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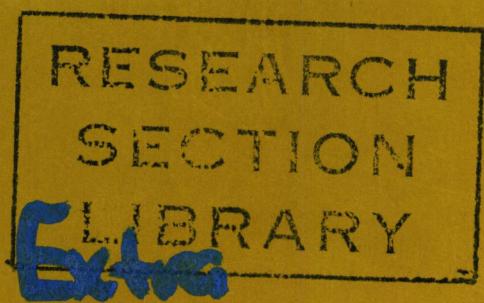
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# Arkansas Waste In Municipal Areas Suitable For Highway Construction Or Maintenance

Sam I. Thornton • Robert C. Welch

1973



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**ARKANSAS WASTE IN MUNICIPAL AREAS  
SUITABLE FOR HIGHWAY CONSTRUCTION  
OR MAINTENANCE**

*by*  
*Sam I. Thornton*  
*Robert C. Welch*

**FINAL REPORT  
HIGHWAY RESEARCH PROJECT 35**

*conducted for*  
*The Arkansas State Highway Department*  
*in cooperation with*  
*The U.S. Department of Transportation*  
*Federal Highway Administration*

The opinions, findings, and conclusions expressed in this publication are those of the authors and not necessarily those of the Arkansas State Highway Department or the Federal Highway Administration.

## ABSTRACT

The categories and quantities of municipal waste products are aggregates (2 million tons/yr), glass (2200 tons/yr), chemical wastes (3 million tons/yr), wood products and paper (50,000 tons/yr), rubber (2000 tons/yr), and textiles and miscellaneous (variable quantities).

Aggregates, woodchip mulches, brown mud, dried sewage sludge, incinerator residues and hydrated lime are recommended for immediate application to Arkansas highways. Aggregates and incinerator residues can be used in fills and embankments. Woodchip mulches are effective in preventing erosion. Dried sewage sludge is an effective soil conditioner and fertilizer. Brown mud and hydrated lime can stabilize plastic clays.

Rubber, brine, and acid hold promise for future use. Rubber holds promise as a viscoelastic layer to eliminate pavement cracking and as a plasticizer in wearing courses but the technology for this is not sufficiently developed. Brine, gypsum, and spent sulfuric acid appear to be good soil stabilizers and conditioners. Studies on the effect of brine and acid on the environment should be made before use.

## GAINS, FINDINGS, and CONCLUSIONS

This study shows that some of the waste products currently available in Arkansas can be used satisfactorily in highway construction and maintenance. Aggregates, woodchip mulches, brown mud, dried sewage sludge, incinerator residues and hydrated lime are recommended for immediate application to Arkansas highways. Aggregates and incinerator residues can be used in fills and embankments. Woodchip mulches are effective in preventing erosion. Dried sewage sludge is an effective soil conditioner and fertilizer. Brown mud and hydrated lime can stabilize plastic clays.

Other wastes such as rubber, brine, and acid hold promise for future use. Rubber may soon be used as a viscoelastic layer to eliminate pavement cracking and as a plasticizer in wearing courses. The technology for these rubber uses is not sufficiently developed. Brine and spent acid appear to be good soil stabilizers and conditioners. Studies on the effect of brine and acid on the environment should be made before use. Arkansas municipal waste products are aggregates (2 million tons/yr), glass (2200 tons/yr), chemical wastes (3 million tons/yr), wood products and paper (50,000 tons/yr), rubber (2000 tons/yr), and textiles and miscellaneous (variable quantities). Many of these wastes have applications which are not mentioned but the lack of quantity or the high cost of acquisition or handling makes their use impractical.

## **IMPLEMENTATION STATEMENT**

Several of the waste products found in Arkansas have immediate application in highway construction and maintenance. These products are aggregates, woodchips and bark, brown mud, waste lime, and dried sewage sludge. The use of these products will be limited, however, by economic considerations, primarily the cost of transportation. Aggregates are recommended for non-critical fills, mulches of woodchips and bark are recommended for erosion protection, brown mud and waste lime are recommended as soil stabilizing agents, and the use of sewage sludge to aid in the establishment and maintenance of desirable vegetation is also recommended.

Brine, gypsum, and spent sulfuric acid show promise for use as soil stabilizers or conditioners but further study to determine the environmental hazards of their use is recommended.

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Solid wastes in excess of 400,000 tons per day are estimated to be produced in the United States. Cities annually are accumulating a trash heap of 250 million tons, 28 billion bottles, 48 billion cans, 4 million tons of plastic, 30 million tons of paper, and 100 million tires. The disposal of these waste materials is a critical problem since it is estimated that within 5 years about 50% of the cities in the U.S. will run out of space to dump their solid wastes. The most desirable disposal methods would be to reuse these wastes and relieve some of the drain on our own natural resources.

Due to the recent increase in environmental awareness and interest in waste disposal, there is a plethora of literature in this field. The waste problems faced by each community differ due to the regional character of wastes, and because political and social climates vary widely. There are many problems, however, which are common to all communities. Many of the solutions to the waste disposal problem proposed in the literature are practical and have been implemented. Others, however, have less merit. If economic conditions and social pressures continue to change, solutions which were previously considered impractical may be acceptable. Several suggestions which have been proposed for the use of solid waste products are briefly presented here.

## CURRENT USES

The ash product of coal burning utilities and industries has several applications in highway construction and maintenance. Ash is suitable for use in embankments (Raymond, 1961), Portland cement concrete (Capps and Spencer, 1970), compacted base courses (Gray and Lin, 1961), asphalt paving mixtures, lightweight structural fills, and filters for drain systems (Moulton, Seals, and Anderson, 1973). Coal ash consists of bottom ash (boiler slag) and fly ash (recovered from furnace flues). Bottom ash is an inert, usually well-graded, lightweight aggregate material. The pozzolanic nature of fly ash makes it an excellent soil stabilizing agent, and a desirable admix in Portland cement concrete and bituminous mixtures.

Rubber from old tires can be used to improve the behavior of asphalt pavements (La Grone and Huff, 1973) by reducing the tendency to shove, bleed, or rut. A significant improvement in low temperature tensile strength and toughness was also noted. A thin ( $\frac{1}{4}$  in.) interface of rubber, sand, and asphalt emulsion between a crack prone base and an asphaltic concrete overlay was found to prevent reflection cracking of the surface.

Glasphalt, a bituminous mixture using crushed and graded glass as aggregate, has received much publicity (Malish, et al, 1970; Day, et al, 1970). Other possible uses of glass are stream scour protection, filter envelope material, and beach sand (Gallaway, et al, 1972).

Construction areas with critical erosion problems can be covered with an inch or two of bark or woodchip mulch to control erosion and simultaneously

create an aesthetically pleasing landscape. Woodchips or bark mulches are much more effective than the straw mulches commonly used (Meyer, et al, 1972). A mixture of asphalt emulsion, sawdust, and paper fibers will also serve as temporary slope protection to allow the establishment of vegetation.

Incinerator residue and nondegradable inorganic wastes are used for roadway fill in many areas (Gallaway, et al, 1972). Carefully controlled sanitary landfills have been used as parks and recreation areas and would be equally satisfactory for rest areas and roadside parks (ENR, Dec. 25, 1972).

Use of miscellaneous wastes are continually being suggested. Gallaway and Horn (1970) have proposed using crushed storage battery cases in asphaltic concrete. Westinghouse Research Laboratories have paved sections of roadway with a mixture containing composted household refuse in addition to the usual asphalt, sand, and stone (Lawrence, 1972). North American Rockwell is patenting a process to make cement from treated sewage sludge. The U.S. Bureau of Mines has developed a process that has produced a barrel of crude oil from a ton of garbage. Carborundum Company has devised a way of burning solid wastes to produce a coarse black grit (useful as a construction material) from municipal garbage (Elliot, 1972). Another interesting possibility is the production of tars by oxidation of solid organic waste (Shuster, 1970).

## THE ARKANSAS STUDIES

In an effort to find suitable uses for Arkansas wastes, the Arkansas Highway Department, in cooperation with the Federal Highway Administration, funded two studies to determine whether or not wastes exist in Arkansas which are suitable for use in highway construction and maintenance. The rural areas were covered in Highway Research Project 34 and the urban areas were covered by Highway Research Project 35. This report covers the findings of the study of Arkansas waste in cities of 15,000 population or more and within a 15 mile radius of those cities (Figure 1). These cities and their populations are given in Table I.

### Method of Study

Industries and municipalities within the study areas were contacted by mail and asked about the character and quantity of waste products generated in their operations. In the Appendix, Table A-1 lists the firms and municipalities responding in this survey. Selected firms and cities were visited and samples of available waste materials were obtained. Some of the samples were tested in the laboratory to determine their potential for stabilizing troublesome soils or as components of the pavement structure. The results of these tests are tabulated in the Appendix.

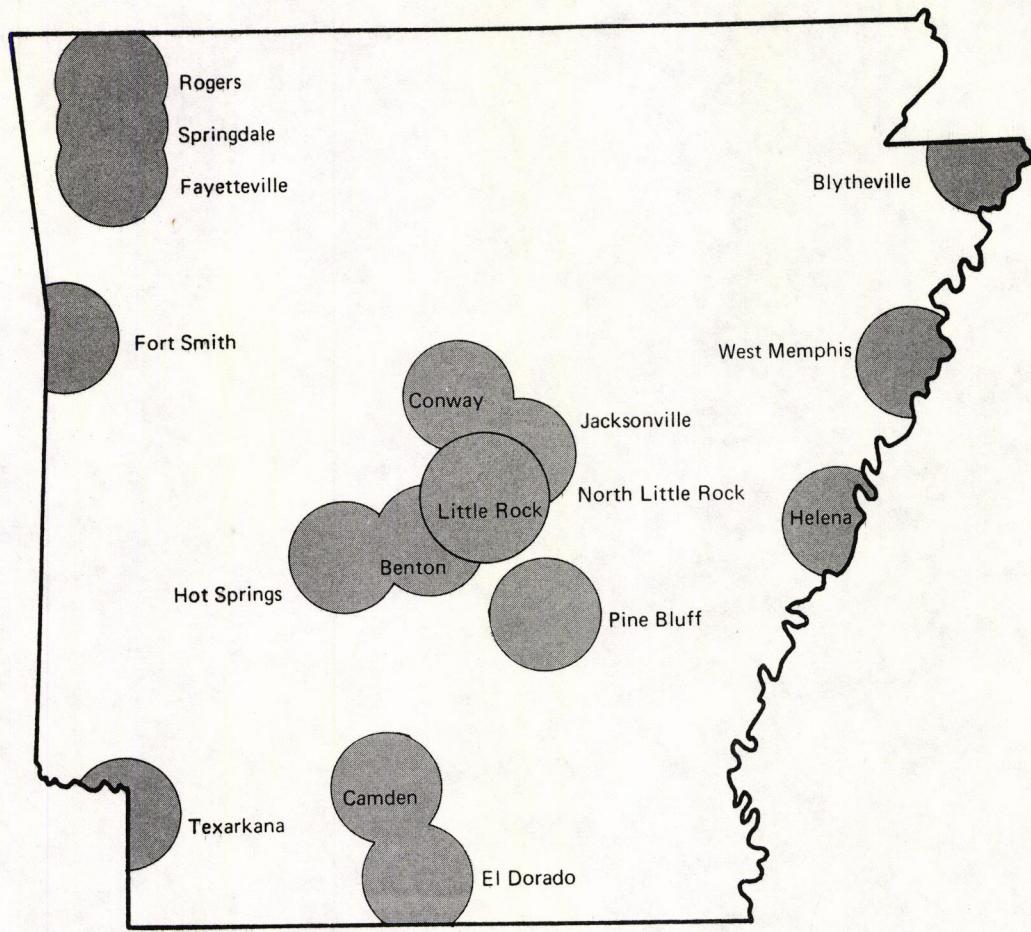


Figure 1 – Study Areas HRP 35

**TABLE I**  
**Cities Included in Study Area of HRP 35**

<b>CITY</b>	<b>COUNTY</b>	<b>POPULATION (1970)</b>
Benton	Saline	16,499
Blytheville	Mississippi	24,752
Camden	Ouachita	15,736
Conway	Faulkner	15,510
EI Dorado	Union	25,283
Fayetteville	Washington	30,729
Fort Smith	Sebastian	62,802
Helena-West Helena	Phillips	21,422
Hot Springs	Garland	35,631
Jacksonville	Pulaski	19,832
Jonesboro*	Craighead	27,050
Little Rock	Pulaski	132,483
North Little Rock	Pulaski	60,040
Pine Bluff	Jefferson	57,389
Rogers*	Benton	11,050
Springdale	Washington	16,783
Texarkana	Miller	21,682
West Memphis	Crittenden	25,892

\*Jonesboro is included in HRP 34 and Rogers is included in HRP 35 due to their proximity to the agencies conducting the research.

## ARKANSAS WASTE PRODUCTS

The waste disposal problems faced by Arkansas are much the same as those faced by the remainder of the nation. The character of the wastes in Arkansas differs from that of many other areas due to the regional nature of natural resources.

Arkansas products which are not currently recycled and represent a disposal problem fall into the general categories of aggregates, chemical wastes, glass, paper, rubber, textile scraps, and wood products. A catch-all miscellaneous category is included for products not fitting in any of the other categories. The largest quantities of waste are in the categories of aggregates, chemical wastes, and wood products.

The presence of the various types of waste products in each of the highway districts is shown in Figure 2. The quantities reported are summarized in Table II. Detailed tabulations of waste products categorized by highway district and industrial classification are given in Tables A-2 and A-3 in the Appendix.

### Aggregates

Approximately 2 million tons per year of aggregates are produced statewide as a by-product of mining and manufacturing industries. About 75% of these aggregates are in the Hot Springs area, with smaller amounts available in Little Rock, Fort Smith, and Texarkana. In the Hot Springs area the majority of the aggregates are scalped rock and mine waste from the vanadium mines and the aggregates are separated generally on the basis of size. Sand tails, which pass the No. 28 sieve, are available in quantities of 400,000 tons per year. About

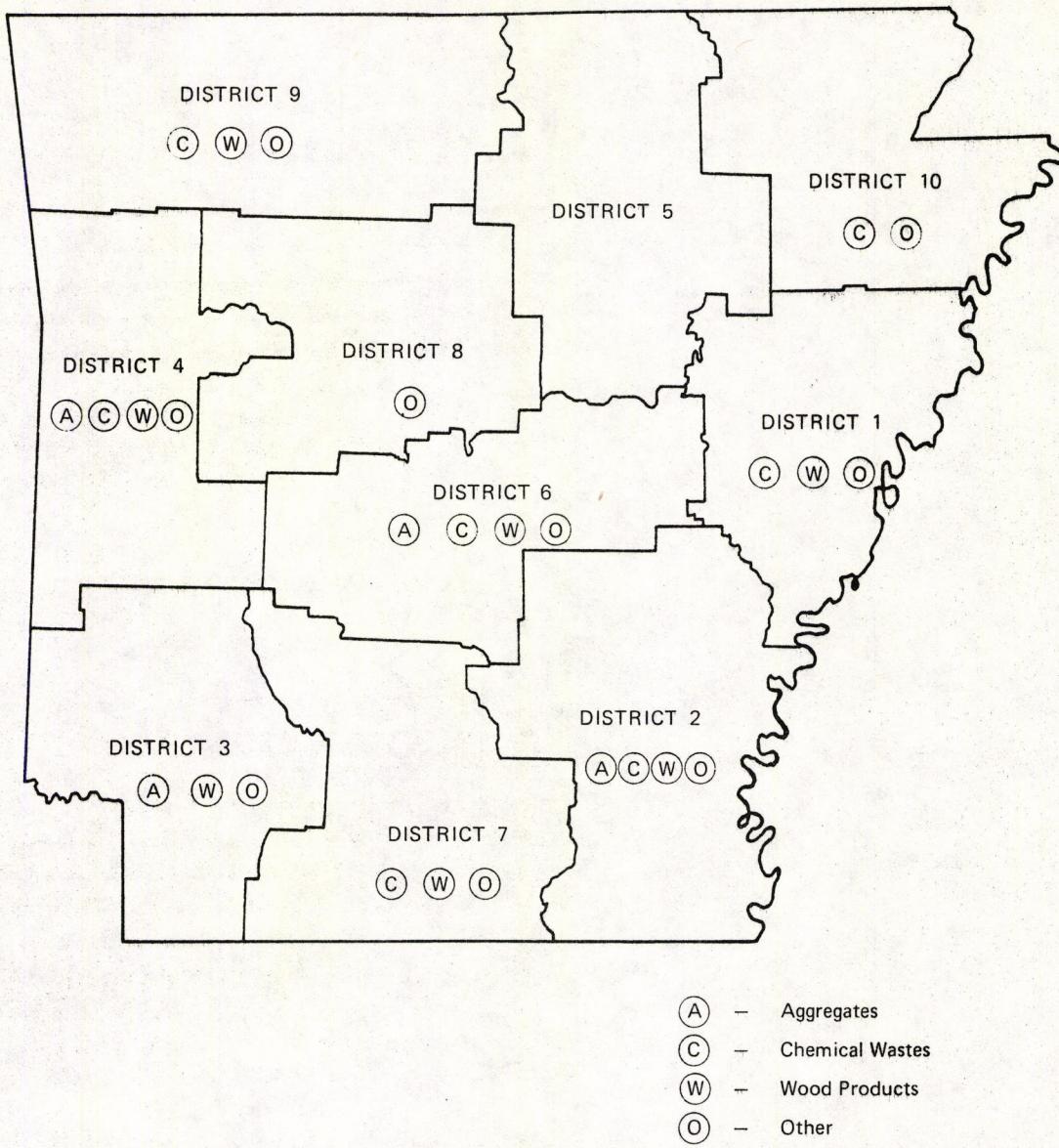


Figure 2 — Waste Products Available in Highway Districts

**TABLE II**  
**Waste Products By Highway District\***

<u>Highway District</u>	<u>Aggregates (tons/yr)</u>	<u>Glass (tons/yr)</u>	<u>Chemicals (tons/yr)</u>	<u>Wood &amp; Paper (tons/yr)</u>	<u>Rubber (tons/yr)</u>
#1 Helena					
West Memphis	400	---		4000+	700+
#2 Pine Bluff	400	---		3000	1500
#3 Texarkana	500	---		---	600
#4 Fort Smith	50,000+	1000		100	---
#5	---	---		---	---
#6 Benton Jacksonville Hot Springs Little Rock North Little Rock					
	1,500,000+	1000	600,000+	30,000+	100
#7 Camden El Dorado	25,000+	---	2,400,000 (Liquid)	10,300	1300
#8 Conway	---	---	---	200	---
#9 Fayetteville Rogers Springdale					
	100	---	---	1200	---
#10 Blytheville	---	---		200	200

\*Wastes estimated to nearest 100 tons/yr

20,000 tons per year of crushed rock (novaculite) in the 1" to 4" size is also available. Mine waste, consisting of mixed clay, sand, and rock is produced at the rate of 1,000,000 tons per year. In the Little Rock area, 50,000 to 75,000 tons of crushed stone (granite) which do not meet the current specification requirements for Portland cement concrete or asphaltic concrete paving are available. There are also smaller quantities of used foundry sand available. In Fort Smith, 50,000 tons of sandstone screenings are available and in Texarkana 20,000 tons of rejected and broken clay pipe are available.

Aggregates can be used in base courses, sub-bases, shoulders, and in surface courses. The appropriate use depends on the durability, grain size and other physical properties of the aggregate.

Since aggregates are not an ecological threat, the cost of transportation limits their use. Aggregates can be stored above ground without deterioration or danger of pollution and usually without long term loss of land use. For this reason, the producer of aggregate wastes may not feel an urgent need to dispose of them and the user would be expected to bear the cost of transportation in addition to the market value of the aggregate.

#### Glass

Most of the glass waste is produced in the Fort Smith and Little Rock areas with approximately 1,000 tons per year being produced in each city. There is glass waste produced in other areas of the state but most of this glass is recycled. Statewide, the available quantity reported is approximately 2,200 tons per year.

Glass waste generally requires crushing and grading before it is suitable for use in highway applications. It could be made to meet the criteria for graded filters or for aggregate in asphaltic concrete. The use of glass with asphalt may also require the use of an anti-stripping agent such as lime.

#### Chemical Wastes

The brown mud produced as a by-product of the aluminum refining industry near Benton represents the largest quantity of solid chemical waste in the state. Approximately 600,000 tons of brown mud per year is produced in this area. Black sand, also a by-product of aluminum, is produced at a rate of 60,000 tons per year.

Also in the category of chemical wastes, there are large quantities of brine, gypsum, and other waste products in lesser quantities. Approximately 5 to 6 million gallons of concentrated chloride brine per day are produced in the El Dorado area. In the same area about 2 million gallons per day of dilute ammonium nitrate (1000 – 3000 ppm) and 3,000 gallons per day of spent sulfuric acid are produced. Other products in the chemical category include 50,000 pounds per month of hydrated lime (Little Rock); 5,000 gallons per month of spent lime slurry (Blytheville); 1,000 pounds per week of spent ferric chloride (Fayetteville); a large stockpile of gypsum in the Helena area, several thousand gallons per month of wire drawing oil and rolling oil emulsion (Hot Springs); along with minor quantities of plastics, solvents, and other products in the same vein.

Chemical wastes constitute a possible highway resource. Chemicals exist

in all parts of the state (See Table II) and some can be used as soil stabilizers. In particular, spent sulfuric acid and brown mud have promise as soil stabilizers. Spent sulfuric acid reduces the plasticity index of the Midway Clay (Little Rock) from 34 to 7 when applied at a rate of 20% by weight of dry soil. Brown mud reduces the plasticity index of this clay to 24 when applied at the rate of 6%. Coston (1969, p. 39) shows that brown mud reduces the plasticity index of another soil from 26 to 14 when applied on the basis of 10% by weight. Thompson (1960) reports that brown mud is equivalent to limestone for agricultural purposes. Hydrated lime has also been proven an effective stabilizing agent for plastic clays. The spent lime slurry, however, was not effective in reducing the plasticity.

The brine produced near El Dorado is another chemical waste with potential for highway use. This brine, which contains 18% calcium chloride, 9% sodium chloride, and 6% magnesium chloride, could be used as a dust palliative, for de-icing, or mixed with the soil in the roadbed to help stabilize the moisture content and reduce the potential for frost action. Studies (Keyser, 1973) have shown that calcium chloride is an excellent complement to rock salt (sodium chloride) for de-icing applications.

Gypsum, when mixed with soil, reduces salt injury to roadside vegetation by decreasing the absorption of sodium. The effect of the acidity (pH 3.4) of the gypsum waste found near Helena should be investigated, however, before it is used for this purpose.

A thorough investigation of the environmental effects of the use of any

chemical wastes should be undertaken prior to their use. Of special concern are the sulfuric acid and the chloride brine. Also, the effect of these products should be evaluated for each soil encountered to assure that the desired improvements are achieved and to determine the quantity required.

#### Wood Products and Paper

Fifty thousand tons of sawdust, bark, and wood scraps are produced by the timber and furniture manufacturing industries in Arkansas each year. Most of the waste is in the Little Rock and El Dorado areas. The remainder of the production is scattered across the state. Most of the waste is in the form of bark and sawdust.

Much of the paper waste produced in the state of Arkansas is recycled but in the areas of Little Rock, Rogers, and Fayetteville there are some fairly large quantities of paper which cannot be recycled because of carbon interleaves or various other reasons. There are 500 to 600 tons per year produced each in Fayetteville and in Rogers, and slightly over 2,000 tons per year produced in Little Rock. The statewide figures for non-recycled paper are approximately 3,300 tons per year.

[REDACTED] Because sawdust, paper, and woodchips decay in the environment, they have limited use in highway construction or maintenance. One possible use is an erosion cover. Shredded paper and sawdust can be used as a mulch carrier for grass seed to cover new highway cuts or fills. Meyer and others (1972) have shown that woodchips or bark are very effective in preventing erosion.

### Rubber

The rubber wastes come from scrapped tires and from mats produced during the manufacture of rubber items for the automobile industry. In the El Dorado area, about 1,300 tons per year of rubber mats are produced and in Texarkana there are approximately 6000 tons per year of scrap tires available. Throughout the remainder of the state scrap tires are available in varying quantities. In Hot Springs, 60 tons of rubber bands per year are scrapped. Over 2,000 tons per year of rubber waste products are available in the state.

Rubber is a good potential source of waste for use in highways, especially as a viscoelastic layer to eliminate reflection cracking of overlays.

### Miscellaneous and Textiles

The miscellaneous category encompasses such products as municipal incinerator residue, mixed municipal wastes, abandoned automobiles, cotton-seed cleanings, vermiculite dust, steel sludge, and various plastic products. The largest quantity within the miscellaneous category, other than mixed municipal wastes, is that of steel sludge produced as a result of tumbling of castings. This waste is produced in Fort Smith (250 tons per year), Little Rock (60 tons per year), and Rogers (1,000 tons per year).

Textile scraps are available as a by-product of the clothing manufacturing industries in the Fort Smith and Little Rock areas. The majority of the production is in the Little Rock area and over 500 tons per year of textile scraps (cotton and synthetics) are available there. Lesser quantities are available in Fort Smith.

The inorganic wastes such as incinerator residue, vermiculite dust, plastics, etc., could be used as fill material where a low quality fill would perform satisfactorily. Careful supervision of the placement and covering of these wastes would be necessary to insure adequate strength for the roadbed.

Organic wastes such as household garbage, cottonseed cleanings, etc., require even more care in their placement to prevent health hazards. Because of the decomposition and attendant settlement (which will occur over a period of 10 years or more) these materials are not suitable for roadway use. Sanitary land fills have been used in several areas as parks and recreation areas and could also be used for rest areas or roadside parks in Arkansas.

Dried sludge from sewage treatment plants with anaerobic digesters is an excellent fertilizer and could be used to aid in the establishment and maintenance of vegetation along the highways.

## CONCLUSIONS AND RECOMMENDATIONS

This study shows that some of the waste products currently available in Arkansas can be used satisfactorily in highway construction and maintenance. Other waste products also have highway applications but the lack of quantity or the high cost of acquisition or handling makes their use impractical.

### Immediate Applications

The waste products which have immediate application and their recommended uses in highway construction and maintenance are given below:

1. The use of all materials in the aggregate category is recommended wherever it is economically feasible to do so. Although most of these products do not meet gradation requirements they could be used for fill in non-critical areas and in portions of embankments where high quality aggregates are not required. The cost of transportation will likely be the controlling factor in the use of these materials.
2. Mulches of woodchips and bark are highly effective in preventing erosion on new cut or fill slopes. It is recommended that these mulches be used in Arkansas.
3. Dried sewage sludge is recommended for use as a fertilizer and soil conditioner to aid in the establishment and maintenance of vegetation in highway right-of-ways in areas where it is readily available.
4. Brown mud is recommended for use as a stabilizing agent for highly plastic clay soils. The central location of the plants producing brown

mud makes the use of this product feasible over a rather wide area.

5. The use of hydrated lime waste is recommended for stabilization of highly plastic clays. The quantity available is small for highway construction but the waste lime should be used to the maximum extent possible.
6. Incinerator residue and inorganic nondegradable wastes may be used as roadway fill when it is economically feasible to do so and when the placement of these materials can be carefully coordinated and controlled.

#### Future Applications

The products listed below may be suitable for future highway applications but need more study prior to their use.

1. Rubber waste should be used in asphalt paving applications when the technology is developed. It appears that methods of preparation and use will be developed soon and it is recommended that highway department personnel remain abreast of the latest developments in this field.
2. Chloride brine, spent sulfuric acid and waste gypsum show promise for use as stabilizing agents or soil conditioners. Further study of the effects of these products upon the environment and the hazards involved in their use is recommended before they are used in highway applications.

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**APPENDIX**

TABLE A-1  
ALL FIRMS RESPONDING TO HRP 35 QUESTIONNAIRES

**ALL FIRMS RESPONDING TO HRP 35 QUESTIONNAIRES**

**BENTON**

Aluminum Company of America  
Arkansas Face Veneer Company, Inc.  
Belvedere Sand & Gravel  
Jones Furniture Manufacturing Company  
Masonite Fabricators  
Reynolds Aluminum, Primary Metals Division

**BIGELOW**

Bigelow Mfg. Co.

**BLYTHEVILLE**

Abbott, Paul, Company, Inc.  
Agrico Chemical Co.  
Coca-Cola Bottling Co. of Blytheville  
Columbia Ribbon & Carbon Mfg. Co., Inc.  
Cotner Bevington, Div. Wayne Corp. Indian Head  
Danvers Shoe Co.  
Nibco of Arkansas

**CABOT**

Aire-Line Mobile Homes Corp.

**CAMDEN**

Baldwin Electronics, Inc.  
Camark Pottery  
Camden Furniture Company  
Camden Mill  
Celotex Corporation  
City of Camden  
Davis Manufacutring Corp.  
Gilchrist Bag Company, Inc.  
Holiday Mfg. Co., Div. of Holiday Inns, Inc.  
Jacket King, Inc.  
Jet Asphalt & Rock Company  
International Paper Co. Bagpak Division  
ITT Arkansas Division  
Southern Pulpwood Co., Inc.  
Stromberg-Carlson Corp.  
Weatherbuster Corp.

## CENTERTON

Bemco Incorporated

## CONWAY

City of Conway  
Clamp Con  
Conway Mfg.  
Conway Mills  
Kimberly Clark Corp.  
Metal Stamping Corporation  
Universal/Nolin  
Virco Manufacturing Corporation

## EL DORADO

American Oil Company  
Anthony Forest Products Co.  
Arkansas Chemicals, Inc.  
Bitucote Products Company  
Cities Service Co.  
City of El Dorado  
Colonial Baking Co. of El Dorado  
Cooper Industrial Products, Inc.  
El Dorado Pole & Piling Co., Inc.  
Georgia-Pacific Corporation, Crossett Div.  
Gifford-Hill & Co., Inc.  
Great Lakes Chemical Corp.  
High Capacity Products Co.  
JM Poultry Packing Co., Inc.  
Jet Asphalt & Rock Company  
Lion Oil Co.  
MacMillan Ring-Free Oil Co., Inc.  
Mid-States Pipe Fabricating, Inc.  
Monsanto Company El Dorado Chemical Plant  
Petroleum Refinery  
Rhyam Craft Boats Co.  
Thermovac Corporation  
United Spacialties, Inc.

## FAYETTEVILLE

Baldwin, D.H., Company  
City of Fayetteville  
College Club Dairy, Inc.  
E.P.C. of Arkansas

## FAYETTEVILLE (Continued)

Fayetteville Coca-Cola Bottling Company  
Fulbright Wood Products  
J.H. Phipps Lumber Company, Inc.  
Kearney Company  
Levi Strauss Company  
Northwest Arkansas Times  
Seven-Up, Dr. Pepper Bottling Co.  
Shakespeare of Arkansas, Inc.  
Shipley Baking Company  
The Standard Register Company

## FORT SMITH

Acme Brick Company  
American Can Company, Dixie Products  
Arkansas Casket Company  
Arkhola Sand & Gravel Co.  
Bailey-White, Inc.  
Baldor Electric Company  
Barr, Harry G. Company  
Bradleys Machine Company  
Brown & Sebo, Inc.  
Buhrke, R.H., Company, Inc.  
Century/Hallmark Lamp Manufacturing Company  
Chin-Lens Safety Products, Inc.  
City of Fort Smith  
Coffey Furniture Industry, Inc.  
Colonial Baking Company  
Dandot, Inc.  
Detroit Tool & Mold Co.  
Duplex Manufacturing Company  
Eades Furniture Manufacturing Company  
Farland Ceramic Supply Company, Inc.  
Flanders Metal Products, Inc.  
Flyer Garment Company  
Fort Smith Chair Company  
Fort Smith Plastic Mold, Inc.  
Fort Smith Structural Steel Company, Inc.  
Fort Smith Table and Furniture Company  
Fourco Glass Co., Harding Division  
General Tire & Rubber Company  
Global Steel of Arkansas, Inc.  
Hill Company, Inc.  
Norman Manufacturing Company, Inc.  
North American Foundry Company, Inc.

## FORT SMITH (Continued)

OK Feed Mills, Incorporated  
OK Processors, Inc.  
Prescotech, Inc.  
Riverside Furniture Corporation  
Shamrock Bolt & Screw Company, Inc.  
Shearman Concrete Pipe Company  
Shipley Baking Company  
Smith, T.J., Box Company, Inc.  
Southwest Manufacturing Company, Inc.  
Spalding Division of Questor  
Steel Mfg. Co., Div. of Natl. Glass & Mfg. Co.  
Thomas Industries, Inc.  
Tucker Duck and Rubber Company  
United Fabricators, Inc.  
United Fence Company, Inc.  
U. S. Forgecraft Corporation  
Universal Packaging Corporation  
Ward Ice Cream Company, Inc.  
Weldon, Williams & Lick, Inc.  
Willard Mirror Company  
Williams Chemical Company, Inc.

## HOT SPRINGS

Alliance Rubber Company  
Bates Reel Co.  
City of Hot Springs  
Coca-Cola Bottling Company of Hot Springs, Inc.  
Cordell Tackle, Incorporated  
General Cable Corporation  
Lake Catherine Footwear, Inc.  
Malvern Minerals Company, Inc.  
National Rejectors Industries  
Nineteen Sixties Corporation  
Norris Dispensers, Inc.  
Permanent Casting, Inc.  
Red Diamond Battery, Inc.  
Reynolds Aluminum at Jones Mill  
Smith, Hiram A., Whetstone Company  
Smith, Keith, Company, Inc.  
Union Carbide  
Weyerhaeuser Company

## JACKSONVILLE

Arkansas Precast Corp.  
Blount and George, Inc.

## JACKSONVILLE (Continued)

Caravelle Boat Co.  
Great Plains Bag Co. of Ark.  
Hiwasse Mfg. Co., Inc.  
Improved Construction Methods, Inc.  
National Swage Division  
Singer Motor Products Division (Franklin Electric)  
Wonder State Trailer Co.

## LITTLE ROCK

AFCO Steel  
Allis Chalmers Corp.  
Ark. Valley Industries  
Armstrong Rubber Co.  
Baldwin Electronics, Inc.  
Batesville Marble Company  
Big Rock Stone & Material Co.  
Borden, Incorporated  
Brake & Wheel Supply, Inc.  
Ceramic Art Center, Inc.  
Choctaw, Inc.  
City of Little Rock  
Coleman Dairy, Inc.  
Colonial Baking Company  
Criss and Shaver, Inc.  
Darragh Company  
Davis Rubber Company  
Democrat Printing & Lithographing Company  
Dixie Culvert Manufacturing Co.  
Dixie Equipment Co.  
Dixie Lumber and Moulding Co.  
Enmar, Inc.  
Essick Mfg. Co.  
Fan-Tron Corporation  
Favorite Check Printers  
Finkbeiner, C., Inc.  
Hamlen, J.H., & Son, Inc.  
Hankins Container Co., The, Div. of the Flintkote  
Hoerner Waldorf Corp.  
International Business Forms, Inc.  
International Graphics, Inc.  
Interstate Hwy. Sign Co.  
Kellwood Co., Radcliffe Group  
Little Rock Furniture Mfg. Co.  
Midwest Casting Corp.  
Minnesota Mining & Mfg. Co.  
Orbit Valve Company

## LITTLE ROCK (Continued)

Porocel Corporation  
Reed, Arthur W. Machine Company  
Shearman Concrete Pipe Company  
Southern Cotton Oil Company, Inc., The  
Southern Paper Box Company  
Stauffer Chemical Company, Ind. Chemical Div.  
Teletype Corporation  
Timex Corporation, Plant 2  
Tuf-Nut Company, Inc.  
Welders Supply Company  
Westinghouse Electric Corporation, Lamp Div.  
Winburn Tile Mfg. Company  
Wrape, W.R., Stave Company, Inc.

## LONOKE

Remington Arms Co., Inc.

## MALVERN

Acme Brick Company  
Glenvale Products Division  
International Technovations, Inc.  
N.L. Industries Bariod Division  
Reynolds-Malvern Cable Plant

## MORRILTON

Arkansas Kraft Corporation  
Interstate Mfg. Corporation

## NORPHLET

Henley Oil  
MacMillan Ring-Free Oil Company, Inc.

## NORTH LITTLE ROCK

Acme Brick Company  
Ark-Crete Block Company, Inc.  
Buckeye Cellulose Corporation  
Chicopee Mfg. Company  
City of North Little Rock  
Katterjohn Concrete Products, Inc.  
Mountainaire Feeds & Vitamin Premixes  
Prospect Farms, Inc.  
Pulaski Publishing Co.  
S. A. R. Mfg. Co., Inc.  
Stanark Plastics, Inc.

## NORTH LITTLE ROCK (Continued)

Waco Mfg. Inc.  
Zonolite, Div. W. R. Grace and Co.

## OSCEOLA

Osceola Products Company  
Paymaster Oil Mill Company

## PINE BLUFF

Allied Chemical Corporation Ind. Chemicals Div.  
City of Pine Bluff  
Commercial Printing Company  
Fox, W. S., & Sons  
Hudson Pulp and Paper Corp.  
Illinois/Eclipse Div. Illinois Tool Works, Inc.  
International Paper Co., Southern Kraft Div.  
Leisure Group, Inc., The (Ben Pearson Archery)  
Ben Pearson Mfg. Co., Inc.  
Planters of Pine Bluff  
Standard Brake Shoe & Foundry Company  
U. S. Army-Pine Bluff Arsenal  
Valmac Industries, Inc. Pine Bluff Pro. Plant  
Viking Bag Div.  
W & A Mfg. Co.  
Weyerhaeuser Co., Dierks Div. Multiwall Bag

## ROGERS

Bear Brand Hosiery Company  
Continental Can Company, Inc.  
Crane Company  
Daisy/Heddon, Div. Victor Comptometer Corp.  
Garrett Poultry, Inc.  
Hoyt Corporation  
Kerns Furniture  
Preformed Line Products Co.  
Rogers Daily News  
Union Carbide Corp., Consumer Products Div.  
Wendt Sonis Unimet United Greenfield, Div. TRW

## SPRINGDALE

City of Springdale  
Franz Food Products of Ark., Inc.  
Heekin Can Company, The  
Ralston Purina Company

**SPRINGDALE (Continued)**

Springdale Farms  
Welch Foods, Inc.

**TEXARKANA**

Boise-Cascade Mobile Homes  
City of Texarkana  
Cooper Tire Co., Div. of Cooper Tire & Rubber Co.  
Dickey, W. S., Clay Mfg. Company  
Gifford-Hill and Company, Inc.  
Globe Union, Inc.  
Malone Concrete Products  
Midwest Farms Dairies  
North American Car Corporation  
Penland Paper Converting Company  
Smith-Blair, Incorporated  
Ward-Davis, Inc.

**VAN BUREN**

Arkhola Sand and Gravel Co.  
Thomas, Derrel, Co., Inc.

**WEST HELENA – HELENA**

Arkla Chemical Corporation  
Faust Band Sawmill, Inc.  
Helena Cotton Oil Company  
Mohawk Rubber Company

**WEST MEMPHIS**

Boise Cascade Corporation  
Choctaw, Inc.  
City of West Memphis  
Delta Steel and Construction Co.  
Flint Steel Corporation  
Newberry Mfg. Co., Inc.  
West Memphis Cotton Oil Mill

TABLE A-2  
WASTE PRODUCTS LISTED BY HIGHWAY DISTRICTS

<u>FIRM</u>	<u>DISTRICT 1</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<u>HELENA - WEST HELENA</u>				
Arkla Chemical Corporation	Gypsum, CaSO <sub>4</sub> •2H <sub>2</sub> O	Large stockpile		
Faust Band Sawmill, Inc.	Sawdust, bark, and planer shavings	50-75 tons/wk	Part is used for fuel, mulch	
Mohawk Rubber Company	Rubber tires and tubes	5,500 tires & tubes		
<u>WEST MEMPHIS</u>				
Boise Cascade Corporation	Paper	400,000 lb/mo	Recycled	
Choctaw	Concrete	1½ cu yds/day		
City of West Memphis	Mixed residential, commercial, and industrial waste	-----		
Flint Steel	Scrap steel	-----	Recycled	
West Memphis Cotton Oil Mill	Mulch (cottonseed & burrs)	200 tons/year		

<u>FIRM</u>	<u>DISTRICT 2</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
PINE BLUFF				
Allied Chemical Company		Partially decomposed clay & silica	3,000 yds/yr 15,000 cu yds stockpiled	
City of Pine Bluff		Mixed residential & commercial refuse	100 tons/day	
Commercial Printing Company		Newspapers and white waste	-----	
Fox, W. S. & Sons		Bark & sawdust	-----	Some sold to nurseries
Hudson Pulp and Paper Corp.		Paper	-----	Recycled
Illinois/Eclipse		High speed steel scrap	-----	Recycled
Leisure Group, Inc., The (Ben Pearson Archery)		Corrugation, wood-blocks & sawdust, pieces of polyester resin & fiberglass	75 cu yds/week	
Pearson, Ben, Mfg. Co., Inc.		Steel trimmings & shavings	-----	Recycled
Standard Brake Shoe & Foundry Co.		Silica Sand & foundry slag	70-80 tons/wk	
Viking Bag Div.		Waste paper, metal cans	-----	
W & A Mfg. Co.		Scrap steel	240 tons/year	Recycled

<u>FIRM</u>	<u>DISTRICT 3</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<u>TEXARKANA</u>				
Boise-Cascade Mobile Homes	Tires, cut lumber, sawdust, cut panels		-----	
City of Texarkana	City refuse		-----	
Cooper Tire Co., Div. of Cooper Tire & Rubber, Inc.	Scrap tires	4,000 – 5,000 lbs/day		
Dickey, W. S., Clay Mfg. Co.	Broken sewer pipe	20,000 tons		
Globe Union, Inc.	Polypropylene chips & battery cases	varies		
Smith-Blair, Incorporated	Rubber, steel turnings, steel plate & tubing	Rubber – 200 lbs/mo Steel – 1–2 tons/mo		Steel is recycled
Ward-Davis, Inc.	Sawdust, wood scraps	10 tons/week		

<u>FIRM</u>	<u>DISTRICT 4</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<u>FORT SMITH</u>				
American Can Company		Solvents-oils Kraft cores Contaminated Paraffin wax Damaged wooden pallets	700 gal/mo 2,500 lbs/mo 200 – 300 lbs/mo	
Arkhola Sand & Gravel Co.		Sandstone screenings	50,000 tons/yr	
Bailey-White, Inc.		Sulfate waste	1,000 lbs/mo	
Barr, Harry G., Company		Cardboard, cardboard cartons, commercial wrapping paper	40 cu yds/wk	
Brown & Sebo, Inc.		Glass sheet scraps	Varies 500 lbs/wk to 1,000 lbs/day	
Bradleys Machine Company		Scrap steel		Recycled
City of Ft. Smith		Steel shavings		
Colonial Baking Company		Municipal refuse Sewage sludge Sludge from water plant	125 tons/day 10 tons/day 2,000 lbs/day	
Dandot, Inc.		Paper and cardboard		
		Low carbon steel punch slugs	10,000 lbs on hand 3,000 lbs/wk	

**DISTRICT 4**  
 (Continued)

<u>FIRM</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<b>FORT SMITH</b>			
Detroit Tool & Mold Co.	Steel chips	400 lbs/wk	Recycled
Duplex Manufacturing Company	Metal scrap	20,000 lbs/mo	Recycled
Eades Furniture Manufacturing Co.	Scrap cotton and vinyl	100 lbs/wk	
Flyer Garment Company	Lightweight cloth clippings	-----	
Fort Smith Table and Furniture Co.	Sawdust	1 truck load/wk	
Fourco Glass Company	Cullet	-----	Recycled
General Tire & Rubber Company	PVC, Styrene & ABS thermoplastics	40 yds/mo	
Global Steel of Arkansas	Scrap steel	-----	Recycled
Hill Company, Inc.	Paper & cloth scraps	20 – 30 55 gal. trash barrels/wk	
North American Foundry Company, Inc.	Slag and sand mixed	-----	
Prescotech, Inc.	Fiberglass insulation	30 cu yds/wk	
Riverside Furniture Corp.	Wood chips	5 tons/day	
Smith, T. J., Box Company, Inc.	Chip board cuttings	1 ton/day	Recycled
Southwest Manufacturing Company, Inc.	Sawdust	300 lbs/wk	

DISTRICT 4  
(Continued)

<u>FIRM</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<u>FORT SMITH</u>			
Spalding Division of Questor	Liquid solvents	250 gals/wk	
Thomas Industries, Inc.	Glass	20 yds/wk	
United Fabricators, Inc.	Scrap stainless steel	-----	Recycled
U. S. Forgecraft Corporation	Residue from tumbling	10,000 lbs/wk	
Universal Packaging Corporation	Waxed cartons	-----	
Weldon, Williams & Lick, Inc.	Paper & films	10,000 lbs/mo	Recycled
Willard Mirror Company	Glass cullet	4,000 lbs/wk	

<u>FIRM</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<u>DISTRICT 6</u>			
<u>BENTON</u>			
Aluminum Company of America	Brown mud residue	1,500 tons/day	
Arkansas Face Veneer Company, Inc.	Scrap wood	any amount	-----
Belvedere Sand & Gravel	Muddy water	-----	-----
Jones Furniture Manufacturing Co.	Wood, cotton fabrics	-----	-----
Masonite Corporation	Hardboard, particleboard, plywood scrap	100 tons/mo	-----
Reynolds Aluminum, Primary Metals Div.	Brown mud Black sand	100,000 tons/yr 60,000 tons/yr	-----
<u>CABOT</u>			
Aire-Line Mobile Homes Corp.	Sawdust	-----	-----
<u>HOT SPRINGS</u>			
Alliance Rubber Company	Cured rubber (rubber bands)	120,000 lbs/yr	
Bates Reel Company	Waste Lumber	2,000 board ft/day	
City of Hot Springs	Incinerator residue	10 – 20 tons/day	
Coca-Cola Bottling Company of Hot Springs, Inc.	Broken glass & paper	54 gal drums/wk	

DISTRICT 6  
 (Continued)

<u>FIRM</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
General Cable Corporation	Rod mill rolling emulsion Wire drawing oil Polyethylene & cross-linked polyethylene strips	10,000 gal/6 mo 10,000 gal/8 mo 125,000 – 175,000 lbs/mo	
Lake Catherine Footwear, Inc.	Mixed plastic, leather, paper, cloth scraps	1 small semi-trailer/day	
Malvern Minerals	Lower novaculite overburden inverted formation	Several million tons	
National Rejectors Industries	Waste water	-----	
Nineteen Sixties Corporation	Steel punchings & turning scrap	2,000 lbs/yr	Recycled
Red Diamond Battery, Inc.	Waste water	-----	
Reynolds Aluminum at Jones Mill	Brick refractory	150 tons/mo	
Smith, Hiram A., Whetstone Company	Rough novaculite	Small amounts	
Union Carbide	Sand tails Scalped rock Mine waste	400,000 tons/yr 20,000 tons/yr 1,000,000 tons/yr	
Weyerhaeuser Company	Wood residue	-----	

DISTRICT 6  
 (Continued)

<u>FIRM</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<u>JACKSONVILLE</u>			
Arkansas Precast Corp.	Rejected precast concrete panels, Concrete spillage	60 – 75/yr, each 2,500 – 10,000 lbs, 700 lbs/day	
Blount and George, Inc.	Metal chips and cuttings	25 – 30 lbs/day	
Caravelle Boat Co.	Fiberglass dust	150 – 200 gal/wk	
Franklin Electric	Kolene Salt	55 gal/wk	Recycled
Hiwassee Mfg. Co., Inc.	Scrap aluminum & steel	-----	Recycled
National Swage Division	Steel borings from machinery	1,000 lbs/wk	Recycled
Improved Construction Methods	ABS plastic	500 – 1,000 lbs/wk	
Wonder State Trailer Co.	Scrap steel	-----	Recycled
<u>LITTLE ROCK</u>			
AFCO Steel	Scrap metal	Varies	Recycled
Allis Chalmers Corp.	Loose paper & scrap paper	Varies	Recycled
Big Stone & Material Co.	Crushed stone (class 9) Crushed stone (class 4)	25,000 tons 25,000 – 50,000 tons	
Borden, Incorporated	Corrugated board	200 lb/day	

DISTRICT 6  
 (Continued)

<u>FIRM</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<u>LITTLE ROCK</u>			
Brake and Wheel Supply, Inc.	Worn out brake linings	10 – 20 barrels/mo	
City of Little Rock	Domestic, commercial and industrial wastes (mixed)	700,000 cu yds/yr	
Coleman Dairy, Inc.	Cardboard boxes & plastic coated paper bottles	-----	
Colonial Baking Company	Scrap dough, bread, cake	-----	Sold to farmers
Criss and Shaver, Inc.	Sand and gravel	100 tons/mo	Used for fill
Darragh Feed Company	Paper and feed ingredients	24 cu yds/wk	
Davis Rubber Company	Rubber strips from old tires	-----	
Democrat Printing & Lithographing Company	Scrap paper	7,000 – 8,000 lbs/day	Recycled
Dixie Equipment Company	Metal	60,000 lbs/yr	Recycled
Enmar, Inc.	Scrap paper	-----	
Essick Mfg. Co.	Paper products, cardboard boxes galvanized steel	-----	
Hamlen, J. H., & Son, Inc.	Hardwood bark & sawdust	15 – 20 tons/day	Used to fire boilers
International Business Forms, Inc.	Paper and corrugated cartons	160,000 lbs/mo	

**DISTRICT 6**  
 (Continued)

<u>FIRM</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<u>LITTLE ROCK</u>			
International Graphics	Waste paper	12 freight cars/yr	Recycled
Interstate Hwy. Sign Co.	Scrap paper and scotchlite trailer/wk		
Kellwood Co., Radcliffe Group	Scrap material (cotton, dacron)	Quite a bit	
Little Rock Furniture Mfg. Co.	Wood	Small quantities	
Midwest Casting Corp.	Waste material	20 – 40 tons/wk	
Minnesota Mining & Mfg. Co.	Fine crushed rock	Unlimited	Sold as Donna Fill
Porocel Corporation	Bauxite ore	7,000 tons in stockpile	
Reed, Arthur W., Machine Company	Steel borings	30 – 40 drums/mo	
Southern Cotton Oil Company, Inc., The	Dirt, cotton boll hulls, sticks from cotton seed processing	-----	
Southern Paper Box Company	Paper board clippings	100 tons/mo	Recycled
Stauffer Chemical Company, Ind. Chemical Div.	Furnace slag	several hundred thousand tons/yr	Available in Mt. Pleasant, TN
Telotype Corporation	Iron and steel turnings and chips Filter aid (sludge)	390,000 lbs/yr 115,000 lbs/yr	
Timex Corporation, Plant 2	Paper, small plastic boxes	1,500 lbs/day	

DISTRICT 6  
(Continued)

<u>FIRM</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<u>LITTLE ROCK</u>			
Tuf-Nut Company, Inc.	Cloth scraps	3,000 lbs/mo	
Welders Supply Company	Slaked lime	50,000 lbs/mo	
Westinghouse Electric Corporation, Lamp Div.	Bulb glass cullet	150,000 lbs/mo.	
Winburn Tile Mfg. Company	Scrap tile and waste clay	5 cu yds/day	Use for own landfill
Wrape W. R., Stave Company, Inc.	Sawdust, shavings, hogged wood waste	80 tons/day	Used as fuel for steam plant
<u>LONOKE</u>			
Remington Arms Company, Inc.	Oil Scrap plastic	3 bbls/wk 30 bbls/wk	
<u>MALVERN</u>			
International Innovations, Inc.	Polystyrene film	15,000 lbs/mo	Not biodegradeable
Reynolds Malvern Cable Plant	Thermosetting polyethylene (vulcanized) Thermoplastic polyethylene (non-vulcanized)	3,000 – 5,000 lbs/mo 3,000 – 5,000 lbs/mo 500 gal/mo	
Wire Drawing Oil			

DISTRICT 6  
 (Continued)

<u>FIRM</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<u>NORTH LITTLE ROCK</u>			
Acme Brick Company	Concrete	40 tons/yr	
Ark-Crete Block Company, Inc.	Broken concrete blocks	2 tons/day	
Buckeye Cellulose Corporation	Soybean cleaning Cotton seed cleaning	4 – 6 mo – 1.5 tons/day 6 – 8 mo – 3 tons/day	
Chicopee Mfg. Company	Cellulosic-organic polymers (non-woven fabric)	1,000,000 lbs/yr	
City of North Little Rock	Slag and ash (incinerator residue)	10 tons/day	
Katterjohn Concrete Products, Inc.	Cull blocks	2,000 tons/yr	
Prospect Farms, Inc.	Chicken fat	500 gallons/day (summer) 300 gallons/day (winter)	
Pulaski Publishing Co.	Paper	-----	
Waco Manufacturing, Inc.	Aluminum product scrap	-----	Sell Scrap
Zonolite, Div. W. R. Grace and Co.	Sand Vermiculite dust	625 yds/yr 24,000 cu ft/yr	

<u>FIRM</u>	<u>DISTRICT 7</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<u>CAMDEN</u>				
Baldwin Electronics, Inc.		Wooden pallets	Small quantity	
Celotex Corporation (Barrett Roofing)		Crushed mineral rock, Asphalt paper	2,500 tons/yr	
City of Camden		Mixed municipal solid waste	48 tons/day	
Davis Manufacturing Corp.		Steel turnings and cast iron chips and shavings	-----	
Gilchrist Bag Company, Inc.		Kraft paper	-----	Recycled
ITT Arkansas Division		Cardboard, metal spools	Small amount	
Southern Pulpwood Co., Inc.		Bark	300 tons-seasonal	
Stromberg-Carlson Corp.		Fiberboard & paper Plastic telephone parts	300 – 400 lbs/wk 250 lbs/wk	
<u>EL DORADO</u>				
Anthony Forest Products Co.		Pine bark	10,000 tons	
Arkansas Chemicals, Inc.		Concentrated chloride brine	2.5 – 3.0 MM gal/day	
Asbestos Roofing		Used roofing shingles	Several tons/day	
City of El Dorado		Mixed household refuse	50 tons daily	

DISTRICT 7  
 (Continued)

<u>FIRM</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<u>EL DORADO</u>			
Cooper Industrial Products, Inc.	Rubber mats	5 tons/day	
Georgia-Pacific Corporation, Crossett Division	Bark, sawdust & cut-offs	Sold	
Great Lakes Chemical Corp.	Sulfuric acid	3,000 gal/day	
Monsanto Company El Dorado Chemical Plant	Dilute solutions of ammonium nitrate (1,000 – 3,000 ppm)	2 million gal/day	
Petroleum Refinery	Misc. wood and paper products		
Rhyan Craft Boats Co.	Aluminum scrap		
<u>NORPHLET</u>			
Henley Oil	Oily Fuller's earth	1.25 tons/day	Plant closed

<u>FIRM</u>	<u>DISTRICT 8</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<u>CONWAY</u>				
City of Conway	Mixed municipal waste		30 cu yds/day	
Clamp Con	Pipe fabrication-steel & alloy scrap	3 tons/yr		Recycled
Conway Mfg.	Scrap wire, PVC beads Copper	75 lbs/yr 25 lbs/yr		
Kimberly Clark Corp.	Misc. cardboard & cotton or rayon fiber	-----		
Metal Stamping Corporation	Steel parts and trimmings Cardboard & paper	30,000 – 40,000 lb/mo Truck load/2 days		Recycled
Safety Plastic Corp.	Self-skinning and fire retardant poly-urethane and some steel	2,000 lbs/mo		
Universal/Nolin	Wood and paper Fiberglass part trimmings Scrap metal	20,000 lbs/mo 625 lbs/mo 4,000 lbs/wk		Recycled
Virco Mfg. Corp.	Scrap steel	5,000 lbs/day		Recycled
<u>MORRILTON</u>				
Interstate Mfg. Corporation	Cardboard boxes	10,000 lbs/mo		

<u>FIRM</u>	<u>DISTRICT 8</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<u>CONWAY</u>				
City of Conway	Mixed municipal waste		30 cu yds/day	
Clamp Con	Pipe fabrication-steel & alloy scrap		3 tons/yr	Recycled
Conway Mfg.	Scrap wire, PVC beads Copper		75 lbs/yr 25 lbs/yr	
Kimberly Clark Corp.	Misc. cardboard & cotton or rayon fiber		-----	
Metal Stamping Corporation	Steel parts and trimmings Cardboard & paper		30,000 – 40,000 lb/mo Truck load/2 days	Recycled
Safety Plastic Corp.	Self-skinning and fire retardant poly-urethane and some steel		2,000 lbs/mo	
Universal/Nolin	Wood and paper Fiberglass part trimmings Scrap metal		20,000 lbs/mo 625 lbs/mo 4,000 lbs/wk	Recycled
Virco Mfg. Corp.	Scrap steel		5,000 lbs/day	Recycled
<u>MORRILTON</u>				
Interstate Mfg. Corporation	Cardboard boxes		10,000 lbs/mo	

<u>DISTRICT 9</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<u>CENTERTON</u>			
Bemco, Inc.	Steel wire and coated fiberglass cloth	6 55 gal drums/wk	
<u>FAYETTEVILLE</u>			
Baldwin, D. H., Company	Spent ferric chloride	1,050 lbs/wk	
City of Fayetteville	Municipal refuse and sewage sludge	-----	
Fayetteville Coca-Cola Bottling Company	Glass	624 54 gal drums/yr	
Fulbright Wood Products	Wood, sawdust, shavings	Lots of it	Sold or burned as energy source
Kearney Company	Silicon carbide & clay Fiberglass rods	5,000 lbs/mo 1,000 ft/mo	
Levi Strauss Company	Cotton scraps	25,000 lbs/3 wks	Recycled
Seven-Up Dr. Pepper Bottling Co.	Glass	624 54 gal drums/yr	
Shakespeare of Arkansas	Trichloroethylene & Stoddard solvent	300 gals/mo	
The Standard Register Company	Carbon interleaved paper	1,000,000 lbs/yr	
<u>ROGERS</u>			
Bear Brand Hosiery Company	Nylon hosiery	-----	
Continental Can Company, Inc.	Corrugated board	50 tons/mo	

DISTRICT 9  
(Continued)

<u>FIRM</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<u>ROGERS</u>			
Crane Company	Plastic scraps, rubber turnings	Small quantity	
Daisy/Heddon, Division Victor Comptometer	Steel Scrap Steel sludge	40,000 lbs/mo	Recycled
Garrett Poultry, Inc.	Offal meal	7 tons/day	Fed to chickens
Hoyt Corporation	Sheet metal, paint (epoxy) filters	1,000 lbs/wk	Some recycling
Preformed Line Products Company	Galvanized steel wire	300 lbs/wk	Recycled
Union Carbide Corporation, Consumer Products Division	Polyethylene Cardboard	250,000 lbs/yr 120,000 lbs/yr	
Wendt Sonis Unimet United Greenfield, Division TRW	Used and contaminated lub oil	55 gal/wk	
<u>SPRINGDALE</u>			
Franz Foods of Arkansas	Paper		
Heekin Can Company	Solvents (ketones, naptha, hexane)		
Ralston Purina Company	Out of condition feed stuffs, Paper	2 tons/mo 300 lbs/mo	

<u>FIRM</u>	<u>DISTRICT 10</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<u>BLYTHEVILLE</u>				
Agrico Chemical Company		Lime Slurry	5,000 gals/mo	
Coca-Cola Bottling Company of Blytheville		Water(wash) used in bottle washing	Year round	
Columbia Ribbon & Carbon Mfg. Co., Inc.		Mill cleaning solution	55 gals/mo	
Cotner/Bevington, Division Wayne Corp., Indian Head		Cardboard cartons, wood crating, packing offal, sheet steel scrap		
Danvers Shoe Company		Crepe rubber	2 – 3 small dump truck loads/week	
Nibco Of Arkansas		Iron Borings	13,500 lbs/wk	
<u>OSCEOLA</u>				
Osceola Products Company		Cotton seed cleanings	1 ton/day, 200 days/yr	

TABLE A-3  
WASTE PRODUCTS LISTED BY INDUSTRIAL CLASSIFICATION

ORDNANCE AND ACCESSORIES

<u>FIRM</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<u>CAMDEN</u>			
Baldwin Electronics, Inc.	Wooden pallets	Small quantity	
<u>LONOKE</u>			
Remington Arms Co., Inc.	Oil Scrap plastic	3 bbls/wk 30 bbls/wk	

<u>FOOD AND KINDRED PRODUCTS</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<u>BLYTHEVILLE</u>			
Coca-Cola Bottling Co. of Blytheville	Water (wash) used in bottle washing	Year round	
<u>FAYETTEVILLE</u>			
Fayetteville Coca-Cola Bottling Co.	Glass	624 54-gal drums/yr	
Seven-Up Dr. Pepper Bottling Co.	Glass	624 54-gal drums/yr	
<u>FORT SMITH</u>			
Colonial Baking Company	Paper and cardboard	-----	
<u>HOT SPRINGS</u>			
Coca-Cola Bottling Co. of Hot Springs	Broken glass & paper	5 54-gal drums/wk	
<u>LITTLE ROCK</u>			
Borden, Incorporated	Corrugated board	200 lbs/day	
Coleman Dairy, Inc.	Cardboard boxes & plastic coated paper bottles	-----	Sold to farmers
Colonial Baking Company	Scrap dough, bread, cake	-----	
Darragh Company	Paper and feed ingredients	24 cu yds/wk	
Southern Cotton Oil Co., Inc. The	Dirt, cotton boll hulls, sticks from cotton seed processing	-----	

FOOD AND KINDRED PRODUCTS  
 (Continued)

<u>FIRM</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<u>NORTH LITTLE ROCK</u>			
Buckeye Cellulose Corporation	Soybean cleaning Cotton seed cleaning	4 – 6 mo – 1.5 tons/day 6 – 8 mo – 3 tons/day	
Prospect Farms, Inc.	Chicken fat	500 gals/day (summer) 300 gals/day (winter)	
<u>OSCEOLA</u>			
Osceola Products Company	Cotton seed cleanings	1 ton/day, 200 days/yr	
<u>ROGERS</u>			
Garrett Poultry, Inc.	Offal meal	7 tons/day	Fed to chickens
<u>SPRINGDALE</u>			
Franz Food Products of Arkansas	Paper	-----	
Ralston Purina Company	Out of condition feed stuffs, paper	2 tons/mo 300 lbs/mo	
<u>WEST MEMPHIS</u>			
West Memphis Cotton Oil Mill	Mulch (cottonseed & burrs)	200 tons/year	

<u>LUMBER AND WOOD PRODUCTS, EXCEPT FURNITURE</u>			
<u>FIRM</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<u>BENTON</u>			
Arkansas Face Veneer Company, Inc.	Scrap wood	Any amount	
Masonite Corporation	Hardboard, particleboard, plywood scrap	100 tons/mo	
<u>EL DORADO</u>			
Anthony Forest Products Co.	Pine bark	10,000 tons	
Georgia-Pacific Corporation, Crossett Division	Bark, sawdust & cut-offs	-----	Sold
<u>FAYETTEVILLE</u>			
Fulbright Wood Products	Wood, sawdust, shavings	Lots of it	
<u>HOT SPRINGS</u>			
Bates Reel Company	Waste lumber	2,000 board ft/day	
Weyerhaeuser Company	Wood residue	-----	
<u>LITTLE ROCK</u>			
Hamlen, J. H., & Son, Inc.	Hardwood bark & sawdust	15 – 20 tons/day	Used to fire boilers
Wrape, W. R., Stave Company, Inc.	Sawdust, shavings, hogged wood waste	80 tons/day	Used as fuel for steam plant

LUMBER AND WOOD PRODUCTS, EXCEPT FURNITURE

(Continued)

<u>FIRM</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<u>PINE BLUFF</u>			
Fox, W. S., & Sons	Bark & sawdust	-----	Some sold to nurseries
<u>TEXARKANA</u>			
Ward-Davis, Inc.	Sawdust, wood scraps	10 tons/wk	
<u>WEST HELENA</u>			
Faust Band Sawmill, Inc.	Sawdust, bark, and planer shavings	50 – 75 tons/wk	Part is used for fuel, mulch

PAPER AND ALLIED PRODUCTS

<u>FIRM</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<u>CAMDEN</u>			
Gilchrist Bag Company, Inc.	Kraft paper	-----	Recycled
Southern Pulpwood Co., Inc.	Bark	300 tons-seasonal	
<u>CONWAY</u>			
Kimberly Clark Corp.	Misc. cardboard & cotton or rayon fiber	-----	
<u>FORT SMITH</u>			
American Can Company	Solvents-oils Kraft cores Contaminated Paraffin wax Damaged wooden pallets	700 gal/mo 2,500 lbs/mo 200 - 300 lbs/mo	-----
Smith, T. J., Box Company, Inc.	Chip board cuttings	1 ton/day	Recycled
Universal Packaging Corporation	Waxed cartons	-----	
<u>LITTLE ROCK</u>			
Southern Paper Box Company	Paper board clippings	100 tons/mo	Recycled
<u>PINE BLUFF</u>			
Viking Bag Div.	Waste paper, metal cans	-----	
Hudson Pulp and Paper Corp.	Paper	-----	Recycled

PAPER AND ALLIED PRODUCTS  
(Continued)

<u>FIRM</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<u>ROGERS</u>			
Continental Can Company, Inc.	Corrugated board	50 tons/mo	
Union Carbide Corporation, Consumer Products Division	Polyethylene Cardboard	250,000 lbs/yr 120,000 lbs/yr	

<u>FIRM</u>	<u>CHEMICALS AND ALLIED PRODUCTS</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<u>BENTON</u>				
Aluminum Company of America	Brown mud residue		1,500 tons/day	
<u>BLYTHEVILLE</u>				
Agrico Chemical Company	Lime slurry		5,000 gals/mo	
<u>EL DORADO</u>				
Arkansas Chemicals, Inc.	Concentrated chloride brine		2.5 – 3.0 MM gal/day	
Great Lakes Chemical Corp.	Sulfuric acid		3,000 gal/day	
Monsanto Company El Dorado Chemical Plant	Dilute solutions of ammonium nitrate (1,000 – 3,000 ppm)		2 mill gall/day	
<u>HELENA – WEST HELENA</u>				
Arkla Chemical Corporation	Gypsum, $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$		Large stockpile	
<u>HOT SPRINGS</u>				
Union Carbide	Sand trails Scalped rock Mine waste		400,000 tons/yr 20,000 tons/yr 1,000,000 tons/yr	

CHEMICALS AND ALLIED PRODUCTS  
 (Continued)

<u>FIRM</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<u>LITTLE ROCK</u>			
Enmar, Inc.	Scrap paper	Several hundred thousand tons/yr	Available in Mt. Pleasant, TN
Stauffer Chemical Co., Ind. Chemical Div.	Furnace slag		
Welders Supply Company	Slaked lime	50,000 lbs/mo	
<u>MORRILTON</u>			
Interstate Mfg. Corporation	Cardboard boxes	10,000 lbs/mo	
<u>NORTH LITTLE ROCK</u>			
Zonolite, Div. W. R. Grace and Co.	Sand Vermiculite dust	625 yds/yr 24,000 cu ft/yr	
<u>PINE BLUFF</u>			
Allied Chemical Company	Partially decomposed clay & silica	3,000 yds/yr 15,000 cu yds stockpiled	

PETROLEUM REFINING AND RELATED INDUSTRIES

<u>FIRM</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<u>CAMDEN</u>			
Celotex Corporation (Barrett Roofing)	Crushed mineral rock, Asphalt paper	2,500 tons/yr	
<u>EL DORADO</u>			
Petroleum Refinery	Misc. wood and paper products	-----	
<u>NORPHLET</u>			
Henley Oil	Oily Fuller's earth	1.25 tons/day	Plant closed

<u>FIRM</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<u>CONWAY</u>			
Safety Plastic Corp.	Self-skinning and fire retardant poly-urethane and some steel	2,000 lbs/mo	
<u>EL DORADO</u>			
Cooper Industrial Products, Inc.	Rubber mats	5 tons/day	
<u>FORT SMITH</u>			
General Tire & Rubber Company	PVC, Styrene & ABS thermoplastics	40 yds/mo	
Prescotech, Inc.	Fiberglass insulation	30 cu yds/wk	
<u>HELENA - WEST HELENA</u>			
Mohawk Rubber Company	Rubber tires and tubes	5,500 tires & tubes	
<u>HOT SPRINGS</u>			
Alliance Rubber Company	Cured rubber (rubber bands)	120,000 lbs/yr	
Nineteen Sixties Corporation	Steel punchings & turnings scrap	2,000 lbs/yr	Recycled
<u>JACKSONVILLE</u>			
Improved Construction Methods	ABS plastic	500 – 1,000 lbs/yr	

RUBBER AND MISCELLANEOUS PLASTIC PRODUCTS

(Continued)

<u>FIRM</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<u>LITTLE ROCK</u>			
Davis Rubber Company	Rubber strips from old tires	-----	
<u>MALVERN</u>			
International Innovations, Inc.	Polystyrene film	15,000 lbs/mo	Not biodegradable
<u>TEXARKANA</u>			
Cooper Tire Co., Div. of Cooper Tire & Rubber, Inc.	Scrap tires	4,000 – 5,000 lbs/day	
Globe Union, Inc.	Polypropylene chips & battery cases	Varies	

<u>FIRM</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<u>BENTON</u>			
Belvedere Sand & Gravel	Muddy water	-----	
<u>FORT SMITH</u>			
Arkholia Sand & Gravel Co.	Sandstone screenings	50,000 tons/yr	
Bailey-White, Inc.	Sulfate waste	1,000 lbs/mo	
Fourco Glass Co.	Cullet	-----	Recycled
Thomas Industries	Glass	20 yds/wk	
Willard Mirror Company	Glass cullet	4,000 lbs/wk	
<u>HOT SPRINGS</u>			
Malvern Minerals Company	Lower novaculite overburden inverted formation	Several million tons	
Smith, Hiram A., Whetstone Co.	Rough novaculite		Small amounts
Weyerhaeuser Company	Wood residue	-----	
<u>JACKSONVILLE</u>			
Arkansas Precast Corp.	Rejected precast concrete panels, Concrete spillage	60 – 75 annually, each 2,500 – 10,000 lbs, 700 lbs/daily	

STONE, CLAY, GLASS, AND CONCRETE PRODUCTS

(Continued)

<u>FIRM</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<u>LITTLE ROCK</u>			
Big Rock Stone & Material Co.	Crushed stone (class 9) Crushed stone (class 4)	25,000 tons 25 – 50,000 tons	
Criss and Shaver, Inc.	Sand and gravel	100 tons/mo	Used for fill
Minnesota Mining & Mfg. Co.	Fine crushed rock	Unlimited	Sold as Donna Fill
Porocel Corporation	Bauxite ore	7,000 tons in stockpile	
Winburn Tile Mfg. Company	Scrap tile and waste clay	5 cu yds/day	Use for own landfill
<u>NORTH LITTLE ROCK</u>			
Acme Brick Company	Concrete	40 tons/yr	
Ark-Crete Block Company, Inc.	Broken concrete blocks	2 tons/day	
Katterjohn Concrete Products, Inc.	Cull blocks	2,000 tons/yr	
Zonolite, Div. W. R. Grace and Co.	Sand Vermiculite dust	625 yds/yr 24,000 cu ft/yr	
<u>TEXARKANA</u>			
Dickey, W. S., Clay Mfg. Co.	Broken sewer pipe	20,000 tons	
<u>WEST MEMPHIS</u>			
Choctaw	Concrete	1½ cu yds/day	

<u>FABRICATED METAL PRODUCTS, EXCEPT ORDNANCE, MACHINERY, AND TRANSPORTATION EQUIPMENT</u>			
<u>FIRM</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<u>BLYTHEVILLE</u>			
Nibco of Arkansas	Iron borings	13,500 lbs/wk	
<u>CONWAY</u>			
Clamp Con	Pipe fabrication-steel & alloy scrap	3 tons/yr	Recycled
Metal Stamping Corporation	Steel parts and trimmings Cardboard & paper	30,000 – 40,000 lbs/mo Truck load/2 days	Recycled
<u>FORT SMITH</u>			
Barr, Harry G., Company	Cardboard, cardboard cartons, commercial wrapping paper Glass sheet scraps	40 cu yds/wk Varies 500 lbs/wk to 1,000 lbs/day	
Duplex Manufacturing Company	Metal scrap	20,000 lbs/mo	Recycled
Global Steel of Arkansas	Scrap steel	-----	Recycled
U. S. Forgecraft Corporation	Residue from tumbling	10,000 lbs/wk	
<u>LITTLE ROCK</u>			
AFCO Steel	Scrap metal	Varies	Recycled
Reed, Arthur W., Machine Company	Steel borings	30 – 40 drums/mo	

FABRICATED METAL PRODUCTS, EXCEPT ORDNANCE,  
MACHINERY, AND TRANSPORTATION EQUIPMENT  
 (Continued)

<u>FIRM</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<u>ROGERS</u>	Galvanized steel wire	300 lbs/wk	Recycled
<u>SPRINGDALE</u>	Solvents (ketones, naptha, hexane)	-----	
<u>Heekin Can Company</u>	Rubber, Steel turnings, steel plate & tubing	Rubber - 200 lbs/mo Steel - 1 - 2 tons/mo	Steel is recycled
<u>TEXARKANA</u>	Smith-Blair, Incorporated	-----	
<u>WEST MEMPHIS</u>	Flint Steel	Scrap steel	Recycled

<u>FIRM</u>	<u>MACHINERY, EXCEPT ELECTRICAL</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<u>CAMDEN</u>	Davis Manufacturing Corp.	Steel turnings and cast iron chips and shavings	-----	
<u>CONWAY</u>	Metal Stamping Corporation	Steel parts and trimmings Cardboard & paper	30,000 – 40,000 lb/mo Truck load/2 days	Recycled
	Universal/Nolin	Wood and paper Fiberglass part trimmings Scrap metal	20,000 lbs/mo 625 lbs/mo 4,000 lbs/wk	Recycled
<u>FORT SMITH</u>	Bradleys Machine Company	Scrap steel	-----	Recycled
	Brown & Sebo, Inc.	Steel shavings	-----	
	Dandot, Inc.	Low carbon steel punch slugs	10,000 lbs on hand 3,000 lbs/wk	
	United Fabricators	Scrap stainless steel	-----	Recycled
<u>HOT SPRINGS</u>	National Rejectors Industries	Waste water	-----	
<u>JACKSONVILLE</u>	National Swage Division	Steel borings from machinery	1,000 lbs/wk	Recycled

MACHINERY, EXCEPT ELECTRICAL  
 (Continued)

<u>FIRM</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<u>LITTLE ROCK</u>			
Dixie Equipment Company	Metal	60,000 lbs/yr	Recycled
Essick Mfg. Co.	Paper products, cardboard boxes galvanized steel	-----	
<u>PINE BLUFF</u>			
Illinois/Eclipse	High speed steel scrap	-----	Recycled
Pearson, Ben, Mfg. Co., Inc.	Steel trimmings and shavings	-----	Recycled
W & A Mfg. Co.	Scrap steel	240 tons/yr	Recycled
<u>ROGERS</u>			
Crane Company	Plastic scraps, rubber turnings	Small quantity	
Hoyt Corporation	Sheet metal, paint (epoxy) filters	1,000 lbs/wk	Some recycling
Wendt Sonis Unimet United Greenfield, Division TRW	Used and contaminated lub oil	55 gal/wk	

<u>FIRM</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<u>CAMDEN</u>			
ITT Arkansas Division	Cardboard, metal spools	Small amount	
Stromberg-Carlson Corp.	Fiberboard & paper Plastic telephone parts	300 – 400 lbs/wk 250 lbs/wk	
<u>CONWAY</u>			
Conway Mfg.	Scrap wire, PVC beads Copper	75 lbs/yr 25 lbs/yr	
<u>FAYETTEVILLE</u>			
Kearney Company	Silicon carbide & clay Fiberglass rods	5,000 lbs/mo 1,000 ft/mo	
<u>HOT SPRINGS</u>			
Red Diamond Battery, Inc.	Waste water	-----	
<u>JACKSONVILLE</u>			
Franklin Electric	Kolene Salt	55 gal/wk	Recycled
<u>LITTLE ROCK</u>			
Allis Chalmers Corp.	Loose paper Scrap metal	Varies Varies	Recycled

ELECTRICAL MACHINERY, EQUIPMENT AND SUPPLIES

(Continued)

<u>FIRM</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
LITTLE ROCK			
Teletype Corporation	Iron and steel turnings & chips Filter aid (sludge)	390,000 lbs/yr 115,000 lbs/yr	
Westinghouse Electric Corporation, Lamp Div.	Bulb glass cullet	150,000 lbs/mo	

<u>FIRM</u>	<u>TRANSPORTATION EQUIPMENT</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<u>BLYTHEVILLE</u>		Cardboard cartons, wood crating, packing offal, sheet steel scrap	-----	
Cotner/Bevington, Division Wayne Corp. Indian Head				
<u>CABOT</u>			-----	
Aire-Line Mobile Homes Corp.		Sawdust	-----	
<u>CENTERTON</u>				
Bemco, Inc.		Steel wire and coated fiberglass cloth	6 55-gal drums/wk	
<u>EL DORADO</u>			-----	
Rhyam Craft Boats Co.		Aluminum scrap	-----	
<u>JACKSONVILLE</u>				
Caravelle Boat Co.		Fiberglass dust	150 – 200 gal/wk	
Wonder State Trailer Co.		Scrap steel	-----	Recycled
<u>LITTLE ROCK</u>				
Brake and Wheel Supply, Inc.		Worn out brake linings	10 – 20 barrels/mo	

TRANSPORTATION EQUIPMENT  
(Continued)

<u>FIRM</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<u>NORTH LITTLE ROCK</u>			
Waco Manufacturing, Inc.	Aluminum product scrap	-----	Sells scrap
<u>TEXARKANA</u>			
Boise-Cascade Mobile Homes	Tires, cut lumber, sawdust, cut panels	-----	

<u>FIRM</u>	<u>FURNITURE AND FIXTURES</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<u>BENTON</u>	Jones Furniture Manufacturing Co.	Wood, cotton fabrics	-----	
<u>CONWAY</u>				
Virco Mfg. Corp.		Scrap steel	5,000 lbs/day	Recycled
<u>FORT SMITH</u>	Eades Furniture Manufacturing Co.	Scrap cotton and vinyl	100 lbs/wk	
	Fort Smith Table and Furniture Co.	Sawdust	1 truck load/wk	
	Riverside Furniture Corp.	Wood chips	5 tons/day	
	Southwest Manufacturing Co., Inc.	Sawdust	300 lbs/wk	
<u>LITTLE ROCK</u>	Little Rock Furniture Mfg. Co.	Wood	Small quantities	

<u>FIRM</u>	<u>MUNICIPALITIES</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
City of Camden		Mixed municipal solid waste	48 tons/day	
City of Conway		Mixed municipal waste	30 cu yds/day	
City of El Dorado		Mixed household refuse	50 tons/day	
City of Fayetteville		Municipal refuse and sewer sludge		
City of Fort Smith		Municipal refuse Sewage sludge Sludge from water plant	125 tons/day 10 tons/day 2,000 lbs/day	
City of Hot Springs		Incinerator residue	10 – 20 tons/day	
City of Little Rock		Domestic commercial and industrial wastes (mixed)	700,000 cu yd/yr	
City of North Little Rock		Slag and ash (incinerator residue)	10 tons/day	
City of Texarkana		City refuse		
City of West Memphis		Mixed residential, commercial and industrial waste		

<u>FIRM</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<u>MISCELLANEOUS MANUFACTURING INDUSTRIES</u>			
<u>BLYTHEVILLE</u>			
Columbia Ribbon & Carbon Mfg. Co., Inc.	Mill cleaning solution	55 gals/mo	
<u>EL DORADO</u>			
Asbestos Roofing	Used roofing shingles	Several tons/day	
<u>FAYETTEVILLE</u>			
Baldwin, D. H., Company	Spent ferric chloride	1,050 lbs/wk	
Shakespeare of Arkansas	Trichloroethylene & Stoddard solvent	300 gals/mo	
<u>FORT SMITH</u>			
Spalding Division of Questor	Liquid solvents	250 gals/wk	
<u>JACKSONVILLE</u>			
Hiwassee Mfg. Co., Inc.	Scrap aluminum & steel	-----	Recycled
<u>LITTLE ROCK</u>			
Interstate Hwy. Sign Co.	Scrap paper and scotchlite		Trailer/wk
Midwest Casting Corp.	Waste material		20 - 40 tons/wk

MISCELLANEOUS MANUFACTURING INDUSTRIES

(Continued)

<u>FIRM</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
PINE BLUFF	Corrugation, wood-blocks & sawdust, pieces of polyester	75 cu yds/wk	
Leisure Group, Inc. The (Ben Pearson Archery)			
ROGERS	Daisy/Heddon, Division Victor Comptometer	40,000 lbs/mo	Recycled

<u>FIRM</u>	<u>TEXTILE MILL PRODUCTS</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<u>NORTH LITTLE ROCK</u>				
Chicopee Mfg. Company	Cellulosic-organic polymers (non-woven fabric)		1,000,000 lbs/yr	
<u>ROGERS</u>				
Bear Brand Hosiery		Nylon hosiery		

APPAREL AND OTHER FINISHED PRODUCTS  
MADE FROM FABRICS AND SIMILAR MATERIALS

<u>FIRM</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<u>FAYETTEVILLE</u>			
Levi Strauss Company	Cotton Scraps	25,000 lbs/3 wks	Recycled
<u>FORT SMITH</u>			
Flyer Garment Company	Lightweight cloth clippings	-----	
Hill Company, Inc.	Paper and cloth scraps	20 - 30 55-gal trash barrels/wk	
<u>LITTLE ROCK</u>			
Kellwood Co., Radcliffe Group	Scrap material (cotton, dacron)	Quite a bit	
Tuf-Nut Company, Inc.	Cloth scraps	3,000 lbs/mo	

<u>FIRM</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<u>FAYETTEVILLE</u>	Carbon interleaved paper	1,000,000 lbs/yr	
<u>FORT SMITH</u>	Paper & films	10,000 lbs/mo	Recycled
<u>LITTLE ROCK</u>	Scrap paper	7,000 – 8,000 lbs/day	Recycled
Democrat Printing & Lithographing Co.	Paper and corrugated cartons	160,000 lbs/mo	
International Business Forms, Inc.	Waste paper	12 freight cars/yr	Recycled
<u>NORTH LITTLE ROCK</u>	Paper	-----	-----
Pulaski Publishing Co.			
<u>PINE BLUFF</u>	Newspapers and white waste	-----	-----
Commercial Printing Company			

<u>FIRM</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<u>LEATHER AND LEATHER PRODUCTS</u>			
<u>BLYTHEVILLE</u>	Crepe rubber	2 – 3 small dump truck loads/wk	
<u>HOT SPRINGS</u>			
Lake Catherine Footwear, Inc.	Mixed plastic, leather, paper, cloth scraps	1 small semi-trailer/day	

<u>PRIMARY METAL INDUSTRIES</u>		
<u>FIRM</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>
		<u>COMMENTS</u>
<u>BENTON</u>		
Reynolds Aluminum, Primary Metals Division	Brown mud Black sand	100,000 tons/yr 60,000 tons/yr
<u>FORT SMITH</u>		
North American Foundry Co., Inc.	Slag and sand mixed	-----
<u>HOT SPRINGS</u>		
General Cable Corporation	Rod mill rolling emulsion Wire drawing oil Polyethylene & cross-linked polyethylene strips	10,000 gal/6 mo 10,000 gal/8 mo
Reynolds Aluminum at Jones Mill	Brick refractory	150 tons/mo
<u>LITTLE ROCK</u>		
Midwest Casting Corp.	Waste material	20 – 40 tons/wk
<u>MALVERN</u>		
Reynolds-Malvern Cable Plant	Thermosetting polyethylene (vulcanized) Thermoplastic polyethylene (non-vulcanized) Wire drawing oil	3,000 – 5,000 lbs/mo 3,000 – 5,000 lbs/mo 500 gal/mo
<u>PINE BLUFF</u>		
Standard Brake Shoe & Foundry Co.	Silica Sand & foundry slag	70 – 80 tons/wk

PROFESSIONAL, SCIENTIFIC, AND CONTROLLING INSTRUMENTS:  
PHOTOGRAPHIC AND OPTICAL GOODS: WATCHES AND CLOCKS

<u>FIRM</u>	<u>WASTE MATERIAL</u>	<u>QUANTITY</u>	<u>COMMENTS</u>
<u>JACKSONVILLE</u>	Metal chips and cuttings	25 – 30 lbs/day	
<u>LITTLE ROCK</u>	Timex Corporation, Plant 2	Paper, small plastic boxes 1,500 lbs/day	

TABLE A-4  
RESULTS OF TESTS ON WASTE PRODUCTS

ATTERBERG LIMITS

Soil	Admixture	Liquid Limit	Plastic Limit	Plasticity Index
Midway Clay	None	77.6	43.3	34.3
Midway Clay	5 ml/100 g Brine	82.3	36.6	45.7
Midway Clay	10 ml/100 g Brine	86.5	36.1	50.4
Midway Clay	6% Brown Mud	90.5	66.9	23.6
Midway Clay	4% Gypsum	43.0	23.8	19.2
Midway Clay	8% Gypsum	42.8	23.8	19.0
Midway Clay	4% Tailings (Allied)	43.2	24.6	18.6
Midway Clay	7% Tailings (Allied)	43.0	26.0	17.0
Midway Clay	10% Tailings (Allied)	42.1	26.1	16.0
Midway Clay	2% Spent Lime Slurry	93.8	36.7	67.1
Midway Clay	4% Spent Lime Slurry	89.8	35.5	54.3
Midway Clay	5% Spent Lime Slurry	92.5	36.0	56.5
Midway Clay	6% Spent Lime Slurry	91.6	37.8	53.8
Midway Clay	10% Spent Lime Slurry	91.2	38.5	53.7
Midway Clay	2 ml/100 g Spent H <sub>2</sub> SO <sub>4</sub>	80.0	37.3	42.7
Midway Clay	10 ml/100 g Spent H <sub>2</sub> SO <sub>4</sub>	63.0	38.4	24.6
Midway Clay	20 ml/100 g Spent H <sub>2</sub> SO <sub>4</sub>	42.5	34.9	7.6

GRAIN SIZE

Sample	Sand Size	Silt Size	Clay Size
Midway Clay	1.5%	14.5%	84%
Midway Clay + 5 ml/100 g Spent H <sub>2</sub> SO <sub>4</sub>	8.0%	68.0%	24%
Midway Clay + 10 ml/100 g Spent H <sub>2</sub> SO <sub>4</sub>	20.0%	54.0%	36%
Foundry Sand	86.0%	2.0%	12%
Black Sand	87.0%	1.0%	12%
Gypsum	25.0%	73.0%	2%
Tailings (Allied)	—	12.0%	88%

ORGANIC CONTENT

Black Sand — 6.5%  
Foundry Sand — 7.8%

pH

Spent Lime Slurry — 9.7  
Waste Gypsum — 3.4  
Tailings (Allied) — 2.8

