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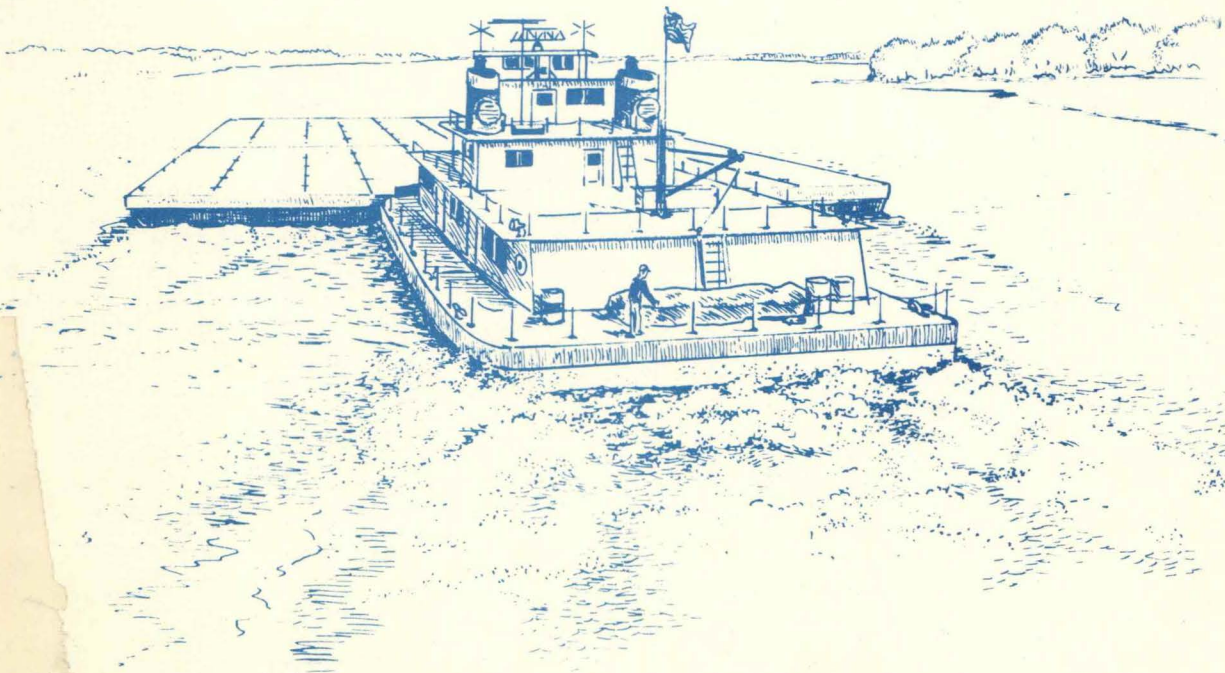


# 1976

# Iowa Barge Terminal

# Study

## GENERAL SUMMARY



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1976  
IOWA BARGE TERMINAL STUDY  
GENERAL SUMMARY



Barge operations of Linwood Stone Products Co., Inc. were recently brought to the attention of the Iowa Department of Transportation and are not reflected in this report; however, in the photograph on page A-19 the top arrow correctly locates their docking area.

Mississippi River Terminal

MILES ABOVE OHIO RIVER: 475.3

NAME: Linwood Stone Products Co., Inc.

ADDRESS:

Rural Route 2, Davenport, IA 52804

PHONE: (319)324-1931

COMMODITIES HANDLED: Crushed stone, coal, and liquid fertilizer.

ACCESS: Truck and Rail  
South of IA 22.

NOTES: Ships crushed stone and receives coal and liquid fertilizer. The crushed stone is mined nearby and the coal is used in producing lime.

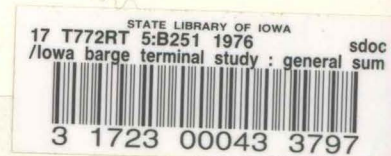


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## INTRODUCTION

Iowa is bordered by two navigable waterways -- the Mississippi River on the east and the Missouri River on the west. The U.S. Army Corps of Engineers operates and maintains the locks, dams, levees, and wing dams to control the navigation channels. In 1975 there were 65 commercial terminals in Iowa with barge handling facilities along the shores of both rivers. They handle about 9 million tons of barge freight each year.

Varying from terminal to terminal, barge-related operations include at least one of the following: loading, unloading, cleaning, repairing, and mooring for storage. In conjunction with these operations, barge freight is stored, manufactured, consumed, or transferred to and from other transportation systems.

Although barge service takes more shipping time than other transportation modes, its rates are economical, which increases the purchasing and marketing powers of Midwestern commercial concerns. Farmers purchase less expensive fertilizer and compete in a larger grain export market. Utility companies charge less for coal - produced electricity. Petroleum companies provide gasoline and fuel oil at lower prices, and other companies which require transportation of bulk quantities can pass savings on to the consumers. The Iowa DOT River Division has estimated that

if all Iowa's waterborne commerce was handled by other modes, Iowa's freight bill would increase 60 million dollars per year.

Motor trucks, railroads, or pipelines transport freight to and from these barge terminals. Some terminals dispatch 150 to 200 trucks per day, and others ship out as many as 750 rail cars per month. Very limited data were available on the origin and destination of the freight handled by these barge terminals, and as to how the freight was transported to and from the waterfront.

To better understand freight movement through barge terminals, the Iowa Department of Transportation (DOT) conducted a survey at each commercial dock location in Iowa during the summer of 1975, and summarized 1974 data collected in a report, "1975 Iowa Barge Terminal Study". During the summer of 1976, the Iowa DOT updated the 1975 survey. This report summarizes Iowa's 1975 barge terminal activities.

## THE SURVEY

The Iowa DOT surveyed Iowa's barge terminals and collected extensive data on their freight movements. The most important data were volume shipped by commodity, origin and destination of freight through each terminal, and mode used to transport freight to and from each terminal.

Field work began in June 1976, and finished in August. All data were obtained through personal interviews with barge terminal owners or operators. Some companies were reluctant to release portions of the data desired; others had to be reassured that the Iowa DOT would not release the data to the public except in summary form. Iowa DOT field personnel were instructed to collect only those data which company representatives were willing to release.

Data collected during the summer of 1976 reflected freight movements during calendar year 1975.

SAMPLE BARGE SHIPPING RATES

The Iowa DOT obtained barge and tow costs per ton by commodity-- from operators willing to release them. However, rates fluctuate with the discounts or premiums applied by the barge lines. The Waterway Freight Bureau Tariff determines rate guidelines. Sample barge shipping costs per ton by commodity, as provided by the barge terminals during the 1975 and 1976 surveys, are:

Mississippi River Rates (1974, 1975)

Alcohol (1975) - Muscatine, Iowa to Owensborough, Kentucky

\$3.86/ton for towing service only

Muscatine, Iowa to New Orleans, Louisiana

\$4.41/ton for towing service only

Barge size is 1,000 tons.

Caustic Soda (1975) - Louisiana to Clinton, Iowa

\$6.60/ton

Barge sizes are 900 and 1,200 tons.

Cement (1974) - Hannibal, Missouri to Bettendorf, Iowa

1 barge	1,200 h.p. tow	\$1.00/ton
2 barges	1,200 h.p. tow	.73/ton
1 barge	1,800 h.p. tow	1.38/ton
2 barges	1,800 h.p. tow	.87/ton



Coal (1974) - Southwest Illinois to Muscatine, Iowa; St. Louis,

Missouri to Muscatine, Iowa - \$2.50/ton

Southwest Illinois to Clinton, Iowa - \$2.32/ton

Minneapolis, Minnesota to Clinton, Iowa - \$2.20/ton

Average barge size is 1,400 to 1,500 tons.

Diammonium Phosphate (DAP) (1975) - Fort Madison, Iowa to Dubuque,

Iowa - \$2.40/ton

Average barge size is 1,400 tons.

Fertilizer (1975) - Louisiana to Burlington, Iowa - \$3.00 to \$4.00/ton

Average barge size is 1,500 tons.

(Maximum of 1,650 tons possible with 9 foot draft)

Grain (1974, 1975) - Iowa (Mississippi River) to Gulf of Mexico

	<u>1974</u>	<u>1975</u>
Typical	\$5.32/ton	\$5.60/ton
Low	\$2.93/ton	\$4.32/ton
High	\$7.98/ton	\$8.15/ton

Average barge size is 1,400 to 1,500 tons.

Manganese Ore (1974) - New Orleans, Louisiana to Keokuk, Iowa - \$7.80/ton

Average barge size is 1,400 to 1,500 tons.

Molasses (1975) - Louisiana to Buffalo, Iowa - \$6.80/ton

Barge size is 1,400 tons.

Petroleum (1974) - St. Louis, Missouri to Burlington, Iowa - \$.0065/gal.

\$1.62/ton      20,000 barrel barge (42 gallon/barrel)

Barge size is 3,300 tons.

Phosphate Rock (1975) - Florida to Fort Madison, Iowa - \$5.80/ton

Barge size is 1,500 tons.

Salt (1975) - New Orleans, Louisiana to Buffalo, Iowa - \$4.22/ton

Barge size is 1,450 tons.

Sand (1974) - Albany, Illinois to Bettendorf, Iowa - \$1.50/ton

Barge size is 300 tons.

Twine (1974) - New Orleans, Louisiana to Dubuque, Iowa - \$7.50/ton

(1975) - New Orleans, Louisiana to Dubuque, Iowa - \$8.21/ton

Average barge size is 700 to 800 tons.

Missouri River Rates (1974, 1975)

Grain (1975) - Missouri River Terminals to Gulf of Mexico

Low \$ 9.25/ton

Average \$10.00 to \$11.00/ton

High \$13.00/ton

Average barge size is 1,000 to 1,200 tons.

Petroleum (1974) - Kansas City, Missouri to Sioux City, Iowa - \$5.50/ton

Average barge size is 1,000 tons.

Salt (1975) - Belle Isle, Louisiana to Sioux City, Iowa

Low \$ 7.25/ton

High \$ 8.50/ton

Average barge size is 1,200 tons.

## IOWA BARGE TERMINALS

Commercial barge terminals have been established along Iowa's two navigable border rivers to take advantage of the lower costs per ton-mile (One "ton-mile" is one ton moved one mile.) of transporting large quantities of bulky, heavy cargo over long distances by barge as compared with other modes. The following sections review various aspects affecting the activity of Iowa's barge terminals.

### U.S. Army Corps of Engineers

The U.S. Army Corps of Engineers is responsible for construction, operations, and maintenance of waterway facilities for navigation, flood control, and related purposes. Applications by companies seeking permission to construct barge terminals in Iowa must be approved by one of the three Corps of Engineers Districts which have jurisdiction along Iowa's river borders. On the Mississippi River, the Rock Island District extends from Lock and Dam No. 22 near Hannibal, Missouri to Lock and Dam No. 10 near Guttenberg, Iowa. The St. Paul District extends from Lock and Dam No. 10 north to the Minneapolis-St. Paul area in Minnesota. On the Missouri River the Omaha District extends from Rulo, Nebraska north to Sioux City, Iowa.

### Terminal Location

Sixty-five barge terminals operated during 1975 on Iowa's shorelines along the Mississippi (58 terminals) and the Missouri (7 terminals). However, 1 of the 58 Mississippi terminals discontinued operations in 1975. The Army Corps of Engineers also listed 2 constructed facilities on the Mississippi and 3 on the Missouri which in 1975 had no plans for handling barges. Four companies have submitted construction applications to the Corps of Engineers, but those terminals may not be constructed. In 1976 or in the near future, new barge operations will begin at 6 recently constructed facilities on the Mississippi (including 3 terminals listed by the Corps of Engineers prior to 1976 as unbuilt), while on the Missouri, 1 inactive terminal renewed barge operations and another new facility is nearing completion. Maps, terminal descriptions and aerial photographs of Iowa's barge terminals operating or nearing operation in 1976 are shown in the Appendix.

Although the terminals are scattered along both rivers, there are concentrations near Burlington, Muscatine, Davenport, Bettendorf, Clinton, and Dubuque on the Mississippi, and near Sioux City on the Missouri.

## Characteristics of Waterway Services

Waterway service depends on the navigation season, the availability of adequate vessel draft in the river channels and docking areas, the types of barge and tow service available, and shipping time.

The Missouri River navigation season along Iowa's border is limited by winter ice conditions and normally extends from late March to late November. Adequate water for navigation on the Missouri is maintained by water releases from 6 reservoirs in Montana, North and South Dakota, and Nebraska.

Ice limits the Mississippi River navigation season to March through December, near Iowa's northeast corner, while warmer winter temperatures further south usually permit year-round shipping for terminals located as far north as Keokuk. Between St. Louis, Missouri; and St. Paul, Minnesota; 29 dams with locks maintain the 9-foot Mississippi navigation channel. Eleven of these dams operate along the 312-mile eastern border of Iowa.

Because of occasional low water periods and silt deposits, the weight of a barge shipment is some times reduced to as little as 75% of capacity so that the barges float higher in the water and clear underwater obstructions. To provide a minimum 9-foot draft, sections of the river channel and some docking harbors must be dredged.

At normal water levels, 3 or 4 barges can be tied to most docks for handling shipments while others may be moored within a short distance of the main docks. Some terminals are able to dock and moor 30 or more barges at one time.

The majority of the barges are 195 feet long by 35 feet wide, have an average load capacity of 1,450 tons, a draft of 9 feet when loaded, and cost approximately \$140,000. Barge loads range from 250 to 3,300 tons depending upon barge size and cargo type. A single towboat can push up to 15 barges (195 feet x 35 feet) carrying a total cargo weight of 22,500 tons on the Upper Mississippi (north of the Ohio River). On the Lower Mississippi a towboat can handle 30 or more barges. On the Missouri River an average tow is 2 barges from Sioux City to Council Bluffs, 4 barges from Council Bluffs to Kansas City, and 6 barges from Kansas City to the mouth of the Missouri River.

Barges may be washed and cleaned on the inside so that a barge is not restricted to one commodity. For example, barges which transport grain downstream may carry coal, phosphate rock, or cement upstream. Also, some barges are separated into a number of compartments and can carry more than one commodity.

Most of the terminals in Iowa do not own barges or towboats and therefore lease from large companies, usually south of Iowa. A few large Midwest companies own terminals all along the rivers and have purchased barges and tows for use by each company's terminals.

Barge commodities originating or terminating in Iowa travel to and from points all along the inland waterways system. Normally shipments from Florida and overseas arrive at New Orleans on ocean ships and must be transferred to smaller barges for shipment on inland rivers. LASH barges (400-ton capacity) and SEABEE barges (800-ton capacity) can be transferred directly to and from ocean ships. This avoids the time for transferring shipments between ships and barges because the LASH and SEABEE barges serve as containers on the ocean ships and barges on the river. Because large numbers of these small barges must be moved to offset the cost of using special ocean ships and handling facilities, very few are received in Iowa.

In the Appendix Figure A-1 ("Mississippi River and Tributaries, Inland Waterways System") shows Iowa's position relative to the entire inland waterways system. The following lists key points from south to north relative to the junction of the Mississippi and Ohio Rivers:

<u>Mississippi River</u>	<u>Miles</u>
New Orleans, Louisiana . . . . .	859
Junction of Mississippi and Ohio Rivers . . . . .	0
St. Louis, Missouri . . . . .	180
Mouth of Missouri River . . . . .	223
Keokuk, Iowa (near southern border of Iowa). . . . .	362
Davenport, Iowa . . . . .	483
Dubuque, Iowa . . . . .	579
Northern border of Iowa on Mississippi River . . . . .	674
St. Paul, Minnesota . . . . .	839

<u>Missouri River</u>	<u>Miles</u>
Southern border of Iowa on Missouri River . . . . .	748
Council Bluffs, Iowa . . . . .	811
Sioux City, Iowa . . . . .	927

The following examples indicate typical times for one-way barge trips:

- Davenport to New Orleans ----- 1,342 miles, 2 weeks;
- Sioux City to New Orleans ----- 1,786 miles, 2 to 3 weeks; and
- Dubuque to St. Paul ----- 260 miles, 2 to 3 days.

The line-haul travel rate is roughly 150 miles per day less time for going through locks, arranging tows, and river and weather conditions.

Access to Supporting Transportation Services

Other transportation modes often support barge transportation service in Iowa barge terminals to meet normal daily needs, to offset recurring service and cost limitations inherent in the use of each mode, and to take advantage of special service and reduced rate offerings. There are tradeoffs among such factors as commodity market price, seasonal variations in shipping rates, quantity discounts, speed and distance of delivery, loss and damage of shipments, availability of transportation vehicles, and availability and cost of storage -- in selecting the optimum balance of modes necessary to maximize service and minimize transportation cost.



Commodities transported by barge are distributed to and from the barge terminals by various combinations of truck and rail. Thirty-eight of Iowa's 65 terminals have rail sidings but some of these rail siding are not used. Most of the terminals rely heavily on trucks for the transportation of barge commodities. The majority of trucks are dispersed to locations within a 150 mile radius of the barge terminals, while the dispersion of commodities by rail may extend to many areas in the Midwest.

One barge terminal uses 20-car mini-trains to transport products to the terminal for shipment by barge. Twenty empty hopper cars are distributed along a rail line to locations a maximum of 250 miles from the terminal. The hopper cars are loaded and returned to the barge terminal. This 2-day operation is completed 3 times weekly, and moves 60 hopper cars per week.

Railroad cars commonly used are: 25 and 80-ton tank cars for liquids; hopper cars ranging from 50 tons to 100 tons for grain and other dry commodities; and 70-ton gondolas, 50-ton boxcars, and 50-ton flatcars for miscellaneous commodities.

Because a considerable number of trucks transport commodities to and from Iowa barge terminals daily, highway access to the terminals is very important. Many Iowa barge terminals are located within the large metropolitan areas within reasonably

good access via local city streets. Rail lines parallel the Mississippi and Missouri Rivers in many of these metropolitan areas, so one access problem common to many of the metropolitan barge terminals is the existence of a rough rail crossing on the access drive.

Eighteen of Iowa's barge terminals are located along the Mississippi River in rather isolated rural areas. Access to these rural terminals is via gravel roads. Storage and handling facilities at the terminals are usually located on the river bank; consequently quite severe geometrics exist on the gravel roads leading to the terminals. For example, access to one terminal is described as "A steep winding gravel road which is cut into a hill and bears a sign warning of falling rocks". Similar descriptions apply to several other rural terminals.

A few of the barge terminals receive petroleum products by pipeline in addition to barge shipments. One terminal now depends exclusively on pipelines for petroleum but still retains the capability of receiving barge shipments.

#### Storage Facilities

Storage facilities for about 4.6 million tons at Iowa barge terminals include open storage, warehouses, elevators, silos, tanks, and bins. Open storage accounts for 50% of the total space available and the majority of open storage is for coal at electric power plants.

Storage space is used not only for barge commodities, but also for commodities produced or used at the terminal and for temporary storage of commodities moved through the terminal by rail, truck, and pipeline.

### Handling Facilities

Commodities carried by barge are transferred by a variety of handling facilities to and from trucks, railroad cars, and storage facilities.

Handling systems vary according to the type of commodity. Liquids and cement are pumped through pipes; grain is moved by augers, conveyor belts, and overhead chutes; and bulk commodities are handled by cranes and conveyor belts.

A 1,400-ton grain barge can be loaded by a conveyor system in 4-12 hours. Using the pumps provided on barges, petroleum products can be drained from a 1,400-ton barge in about 8 hours. Molasses must be steam-heated sometimes for 8 hours and then pumped from the barge in 12 hours. Cranes remove commodities such as coal and salt from barges at an average rate of 150 to 200 tons per hour.

Truck hoists can unload a 24-ton truck load of grain in 3 minutes into a receiving pit. Twenty-four tons of petroleum can be moved by pipes from a storage tank to a truck in 15 minutes. Sand from an overhead bin can be poured into a 15-ton truck in

45 seconds. Weighing time for a truck is usually about 10 seconds unless there is some distance between loading and weighing areas. At the peak of the grain-moving season, long lines of trucks wait for weighing and unloading.

### Ownership and Operation

Iowa barge terminals are owned by small transportation companies, river-front industries, Midwest co-ops, grain companies, and petroleum companies. Some storage and dock facilities are even owned by cities (e.g., Clinton and Dubuque) on the Mississippi River. Terminal owners may handle only their own commodities, contract to manage shipping and receiving for other companies, or lease the facilities and the management of operations to other companies; or a combination of these.

Barge commodities are transported to and from inland locations, produced at the terminal, or consumed in the production of electricity, fertilizer, cement, and other products.

Because of on-site manufacturing and the flexibility of the facilities to coordinate the commodity transfer among transportation systems, not all transfers involve barge transportation.

### Expansion Plans

Land for expanding barge terminals is nonexistent in some metropolitan areas but acreage is available at a majority of the terminals.

Some terminals are planning to expand along the river bank, add new rail sidings, increase the capacity of existing rail sidings, increase storage space, and add new handling facilities.

## BARGE COMMODITIES

During 1975, Iowa barge terminals handled 8,860,000 tons -- 96.5% at the Mississippi River terminals and 3.5% at the Missouri River terminals. Commodities handled were: grain and grain products - 48%; coal - 14%; petroleum - 12%; and other commodities - 26%. Table 1 summarizes for each commodity the volume of barge freight and the type of land, transportation modes used for freight dispersion and consolidation. Table 2 compares 1974 and 1975 barge commodity tonnages originating or terminating in Iowa.

### Grain and Grain Products

About 80% of the grain is usually trucked to the terminals from areas within a 100-mile radius of the terminal, loaded on barges, and transported down river to harbors on the Gulf of Mexico.

The 4,213,000 tons of grain and grain products include: corn - 73%; soybeans - 20%; soybean meal - 4%; wheat - 0.5%; and miscellaneous (feed gluten pellets and corn screenings) - 2.5%.

An estimated 84% of the grain transported by barge is received from Iowa grain shippers and remainder is from out-of-state shippers. Fourteen terminals handle grain shipments exclusively and grain comprises 25 to 90 percent of the operations in 8 more.

Table 1  
1975 SUMMARY OF BARGE COMMODITY  
VOLUME AND DISTRIBUTION

COMMODITY	VOLUME		DISTRIBUTION (%)		
	TONS	% of RIVER MOVEMENT	TRANSPORTED BY TRUCK	TRANSPORTED BY RAIL	PRODUCED OR CONSUMED AT TERMINAL

MISSISSIPPI RIVER

GRAIN	4,135,500	48	79.7	20.0	0.3
COAL	1,225,000	14	3.7	0	96.3
PETROLEUM	1,076,400	13	96.2	0	3.8
OTHER	2,116,500	25	58.0	11.0	31.0
TOTAL	8,553,400	100	65.5	12.4	22.1

MISSOURI RIVER

GRAIN	78,400	26	97.4	2.6	0
COAL	0	0	0	0	0
PETROLEUM	0	0	0	0	0
OTHER	228,200	74	85.3	14.7	0
TOTAL	306,600	100	88.4	11.6	0

TOTALS

GRAIN	4,213,900	48	80.0	19.7	0.3
COAL	1,225,000	14	3.7	0	96.3
PETROLEUM	1,076,400	12	96.2	0	3.8
OTHER	2,344,700	26	60.7	11.3	28.0
TOTAL	8,860,000	100	66.3	12.4	21.3

Table 2  
SUMMARY OF BARGE TONNAGE TOTALS - 1974 & 1975

The following table compares 1974 and 1975 data for the Mississippi and Missouri Rivers' total barge tonnages of grain, coal, petroleum, and other commodities which originate or terminate in Iowa.

YEAR	COMMODITIES (TONS)				ORIGINATE (TONS)	TERMINATE (TONS)	TOTAL (TONS)
	GRAIN	COAL	PETROLEUM	OTHER			

MISSISSIPPI RIVER

1974	4,214,900	1,113,900	1,146,000	2,550,800	4,446,200	4,579,400	9,025,600
1975	4,135,500	1,225,000	1,076,400	2,116,500	4,287,100	4,266,300	8,553,400
<u>+</u> % Change	-1.9%	+10.0%	-6.1%	-17.0%	-3.6%	-6.8%	-5.2%

MISSOURI RIVER

1974	207,800	0	8,000	172,300	226,100	162,000	388,100
1975	78,400	0	0	228,200	104,400	202,200	306,600
<u>+</u> % Change	-62.3%	0.0%	-100.0%	+32.4%	-53.8%	+24.8%	-21.0%

TOTALS

1974	4,422,700	1,113,900	1,154,000	2,723,100	4,672,300	4,741,400	9,413,700
1975	4,213,900	1,225,000	1,076,400	2,344,700	4,391,500	4,468,500	8,860,000
<u>+</u> % Change	-4.7%	+10.0%	-6.7%	-13.9%	-6.0%	-5.8%	-5.9%

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## Coal

About 80% of the coal comes up the river from southern Illinois and Kentucky. Most of the other 20% is Wyoming and Montana coal, which is transported by rail to Minneapolis, Minnesota, transferred to barges, and shipped down river. Some Wyoming and Montana coal is also shipped by rail to St. Louis and then up the river by barge to Iowa.

Eighty-seven percent of the coal is received by 5 power plants near the river and consumed in the production of electrical energy; 9% is consumed during a manufacturing process at another terminal; and 4% is trucked inland to Iowa industries.

All 1,255,000 tons of coal are transported by barge to 7 terminals along the Mississippi River.

## Petroleum

Twelve barge terminals have facilities for handling and storing petroleum products. Two of these terminals consume all their petroleum in manufacturing and 1 terminal in 1975 received petroleum by pipeline only. Of the 12 terminals, 8 received petroleum as the only barge commodity.

Most of the petroleum terminals are in the metropolitan areas of Bettendorf and Dubuque, Iowa. Barges transport petroleum up the river from refineries in St. Louis, Missouri; Wood River, Illinois; Joliet, Illinois; and Mt. Vernon, Indiana. Also, some petroleum comes down the river from Pine Bend, Minnesota. Ninety-

six percent of the petroleum is distributed by trucks from the terminals to surrounding areas within a 50-to 100-mile radius, and the other 4% is consumed at the terminals.

All of the 1,076,400 tons of petroleum are transported by barge to the 12 terminals on the Mississippi River. Table 2 shows 8,000 tons of petroleum were shipped to terminals on the Missouri River in 1974; however, those terminals involved received the petroleum by rail in 1975.

#### Other Commodities

Included in the 2,344,700 tons of "other" commodities moved by barge are: phosphate rock (processed into fertilizer) and other fertilizer products - 50%; industrial salt and road salt - 14%; sand, gravel, and rock - 13%; and over 30 other commodities - 23%.

Table 1 (1975) shows that on the Mississippi River these commodities were distributed by: truck - 58%, and rail - 11%. The remaining 31% was produced or consumed at the terminal. On the Missouri River all "other" commodities were shipped out by: truck - 85%, and rail - 15%.

Table 2 shows a 17% decrease of 434,300 tons for the "other" commodities from 1974 to 1975 on the Mississippi River. The major change was the decrease of 438,400 tons in the sand, gravel, and rock shipments.

## FREIGHT DISTRIBUTION IN IOWA

Barge freight tonnage originates from (50%) and terminates at (50%) Iowa, commercial terminals. Barge operations in 1975 included both shipping and receiving by 12 terminals, 17 exclusively shipped freight, 31 exclusively received freight, and 5 terminals handled no freight. In 1975, freight tonnage was transported on rivers south of Iowa (90%), the Mississippi River north of Iowa (6%), and between locations along Iowa's two river borders (4%).

Iowa barge terminals handled 8.9 million tons of barge freight in 1975. About 7.0 million tons were shipped to and from the terminals by truck and rail, while the remaining 1.9 million tons were produced or consumed at the terminals.

Figure 1 shows the estimated dispersion of 1-way truck trips for all commodities between Iowa counties and barge terminals during a normal weekday's operation in 1974. Truck flow in the eastern two-thirds of Iowa is associated with Mississippi River terminals; in the western quarter of Iowa the truck flow is associated with Missouri River terminals.

The 1975 estimated distribution of freight transported between Iowa counties and barge terminals is shown (in thousands of tons) for trucks in Figure 2 and for rail in Figure 3. The truck distribution for 1975 is based on estimated 1974 truck trip dispersions for each commodity group during a normal weekday's operation. Of

the 5.9 million tons of barge freight moved by trucks, 4.3 million tons were moved within Iowa. Rail distribution for 1975 is based on sample periods of normal operation during the 1975 navigation season. Figure 3 shows the overlap in western Iowa of rail service attributable to terminals on both rivers. Of the 1.1 million tons moved by rail, over 0.9 million tons were shipped within Iowa.

Figure 4 shows the 1975 estimated distribution of Iowa barge tonnage (in thousands of tons) transported by the combination of trucks (Figure 2) and rail (Figure 3) between Iowa counties and barge terminals.

**FIGURE 1**  
**DISPERSION OF ONE -WAY TRUCK TRIPS BETWEEN IOWA COUNTIES**  
**AND BARGE TERMINALS ON THE MISSOURI AND MISSISSIPPI RIVERS**  
**DURING A NORMAL WEEKDAY'S OPERATION IN 1974**

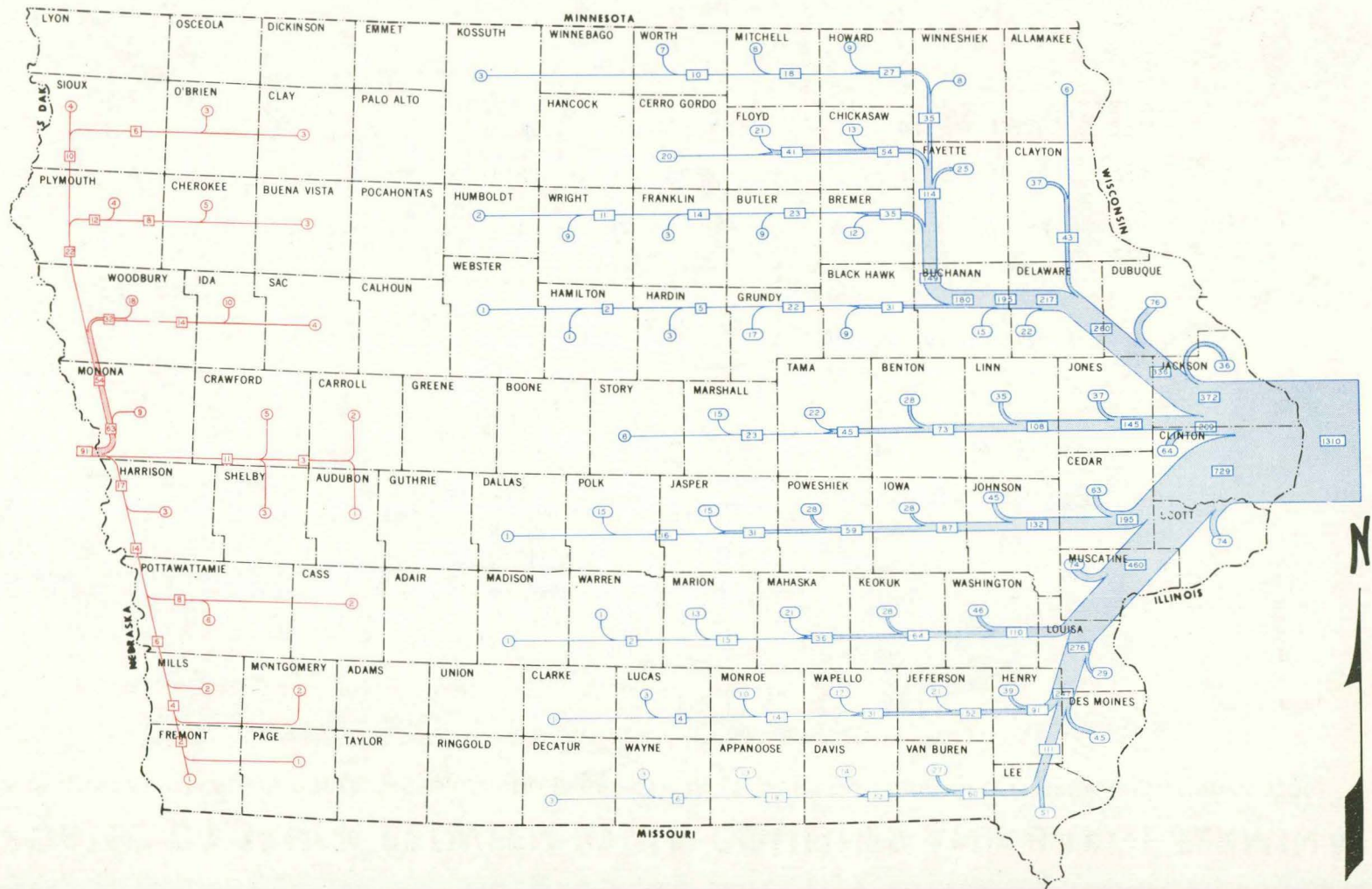
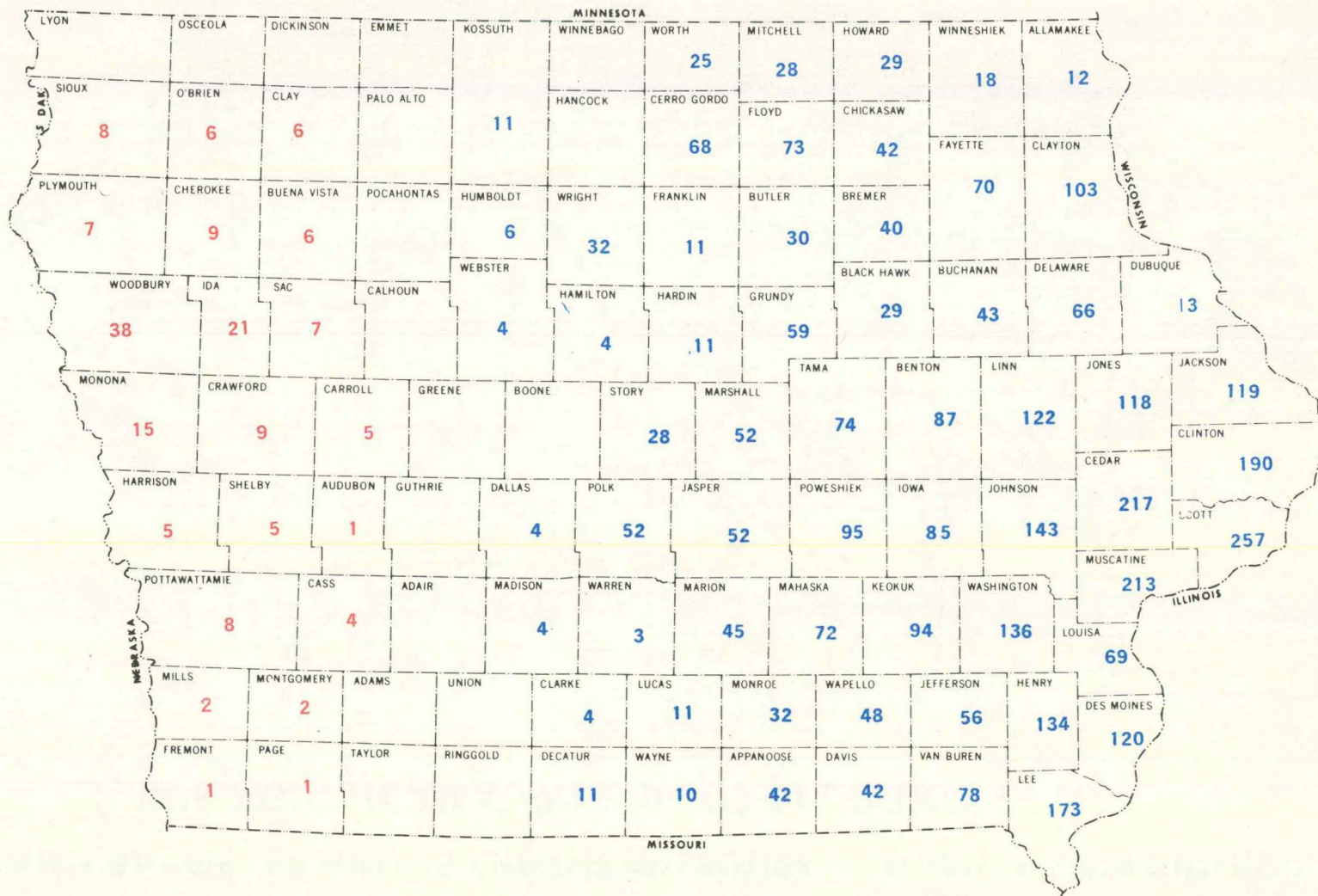


FIGURE 2

# ESTIMATED 1975 ANNUAL BARGE TONNAGE DISTRIBUTION OF COMMODITIES TRANSPORTED BY TRUCK BETWEEN IOWA COUNTIES AND BARGE TERMINALS

(THOUSANDS OF TONS ESTIMATED FOR 1975, BASED ON A NORMAL WEEKDAY'S OPERATION DURING THE 1974 NAVIGATION SEASON)



TO AND FROM MISSOURI RIVER BARGE TERMINALS

TO AND FROM MISSISSIPPI RIVER BARGE TERMINALS

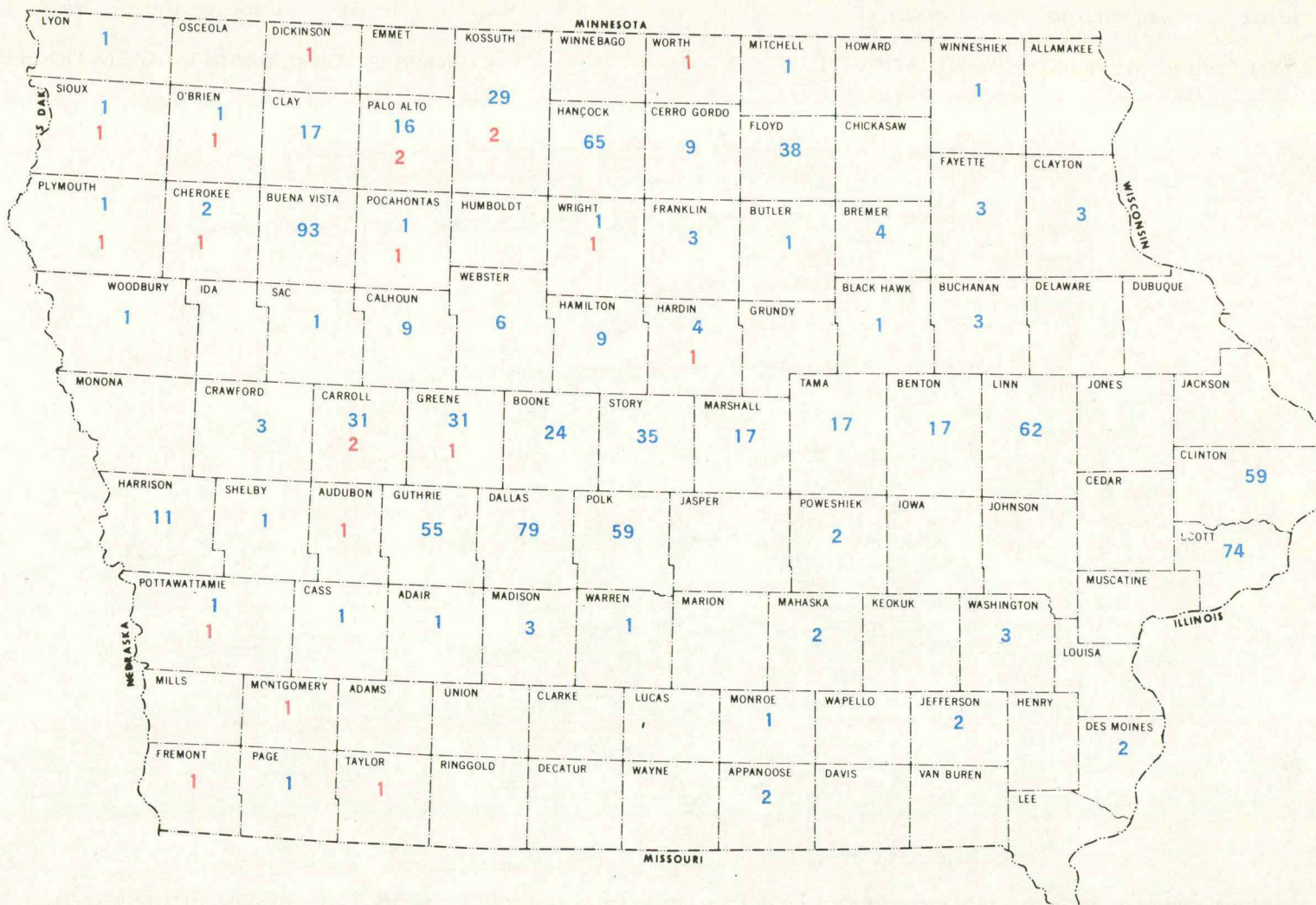
IOWA-TRUCK	166
OUTSIDE IOWA-TRUCK	105
TOTAL TRUCK	271

IOWA-TRUCK	4,119
OUTSIDE IOWA-TRUCK	1,487
TOTAL TRUCK	5,606

FIGURE 3

# ESTIMATED 1975 ANNUAL BARGE TONNAGE DISTRIBUTION OF COMMODITIES TRANSPORTED BY RAIL BETWEEN IOWA COUNTIES AND BARGE TERMINALS

(THOUSANDS OF TONS BASED ON SAMPLE PERIODS OF NORMAL OPERATION DURING THE 1975 NAVIGATION SEASON)



27

TO AND FROM MISSOURI RIVER BARGE TERMINALS

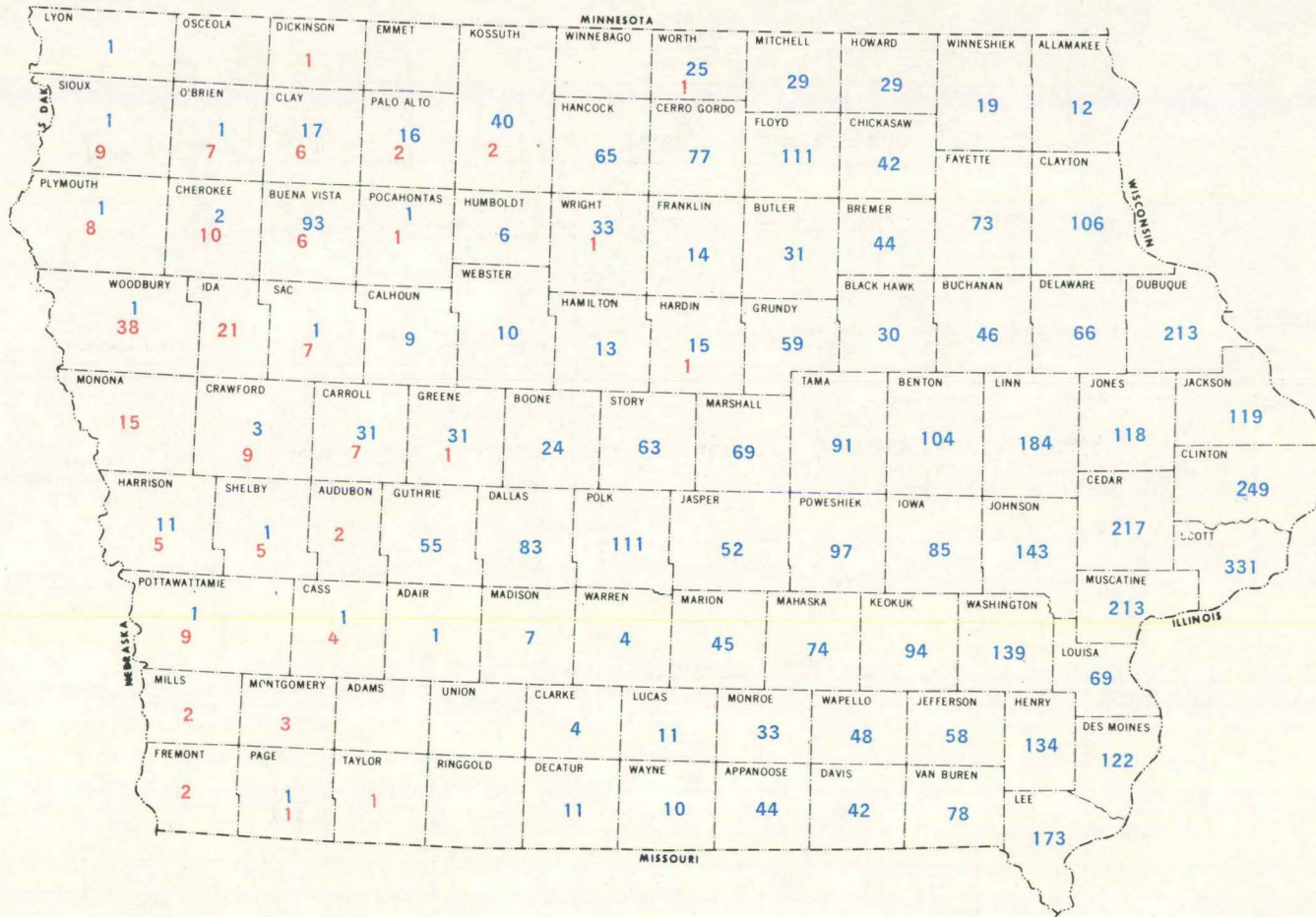
TO AND FROM MISSISSIPPI RIVER BARGE TERMINALS

IOWA-RAIL	21
OUTSIDE IOWA-RAIL	15
TOTAL RAIL	36

IOWA-RAIL	922
OUTSIDE IOWA-RAIL	138
TOTAL RAIL	1,060

# FIGURE 4 ESTIMATED 1975 ANNUAL BARGE TONNAGE DISTRIBUTION OF COMMODITIES TRANSPORTED BY TRUCK AND RAIL BETWEEN IOWA COUNTIES AND BARGE TERMINALS

(THOUSANDS OF TONS BASED ON SAMPLE PERIODS OF NORMAL OPERATION DURING THE 1974 AND 1975 NAVIGATION SEASON)



28

### TO AND FROM MISSOURI RIVER BARGE TERMINALS

IOWA	OUTSIDE IOWA	TOTAL
166	105	271
21	15	36
187	120	307
0	0	0
187	120	307

\*DISTRIBUTION SHOWN IN RED ON MAP ABOVE

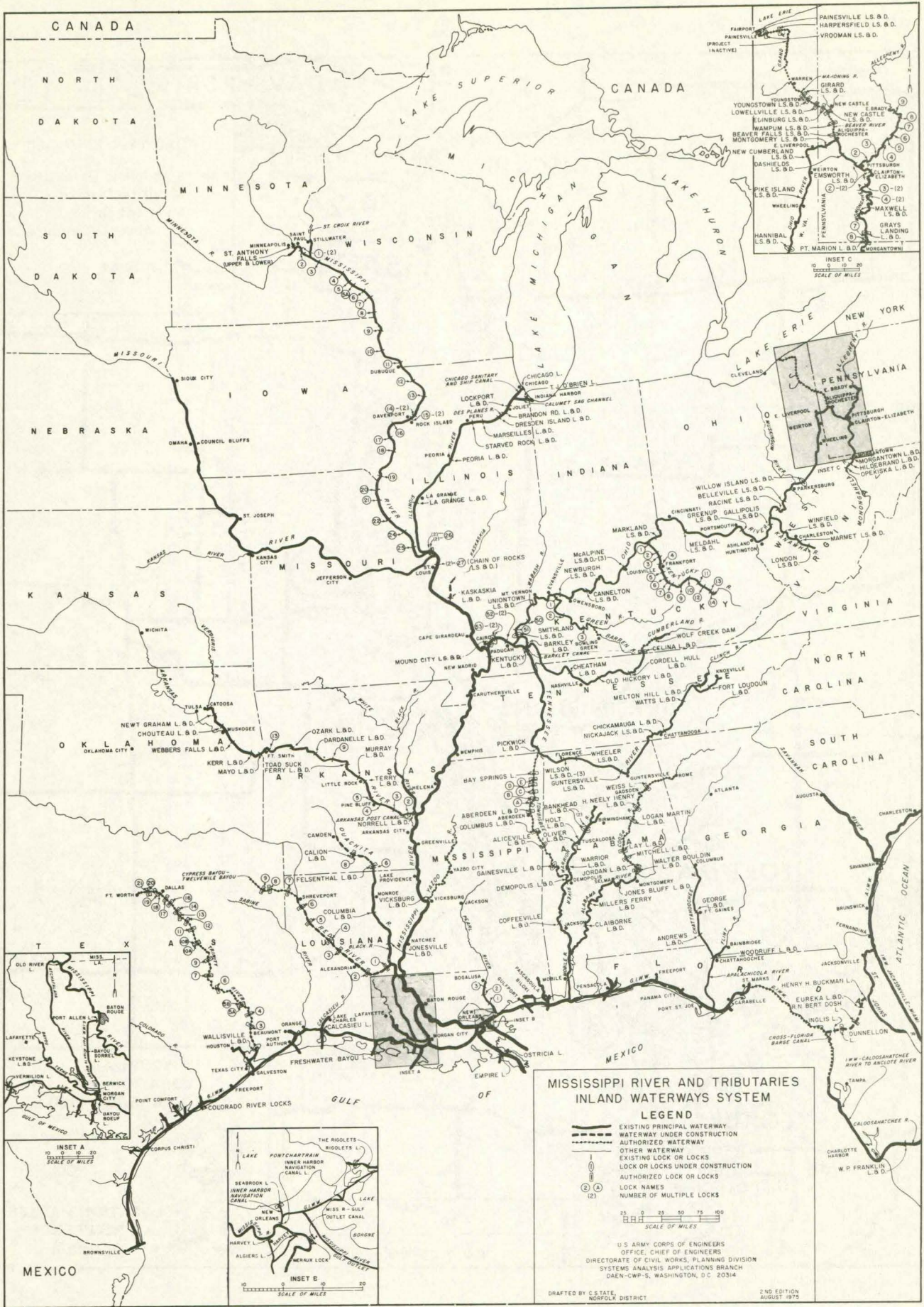
### TO AND FROM MISSISSIPPI RIVER BARGE TERMINALS

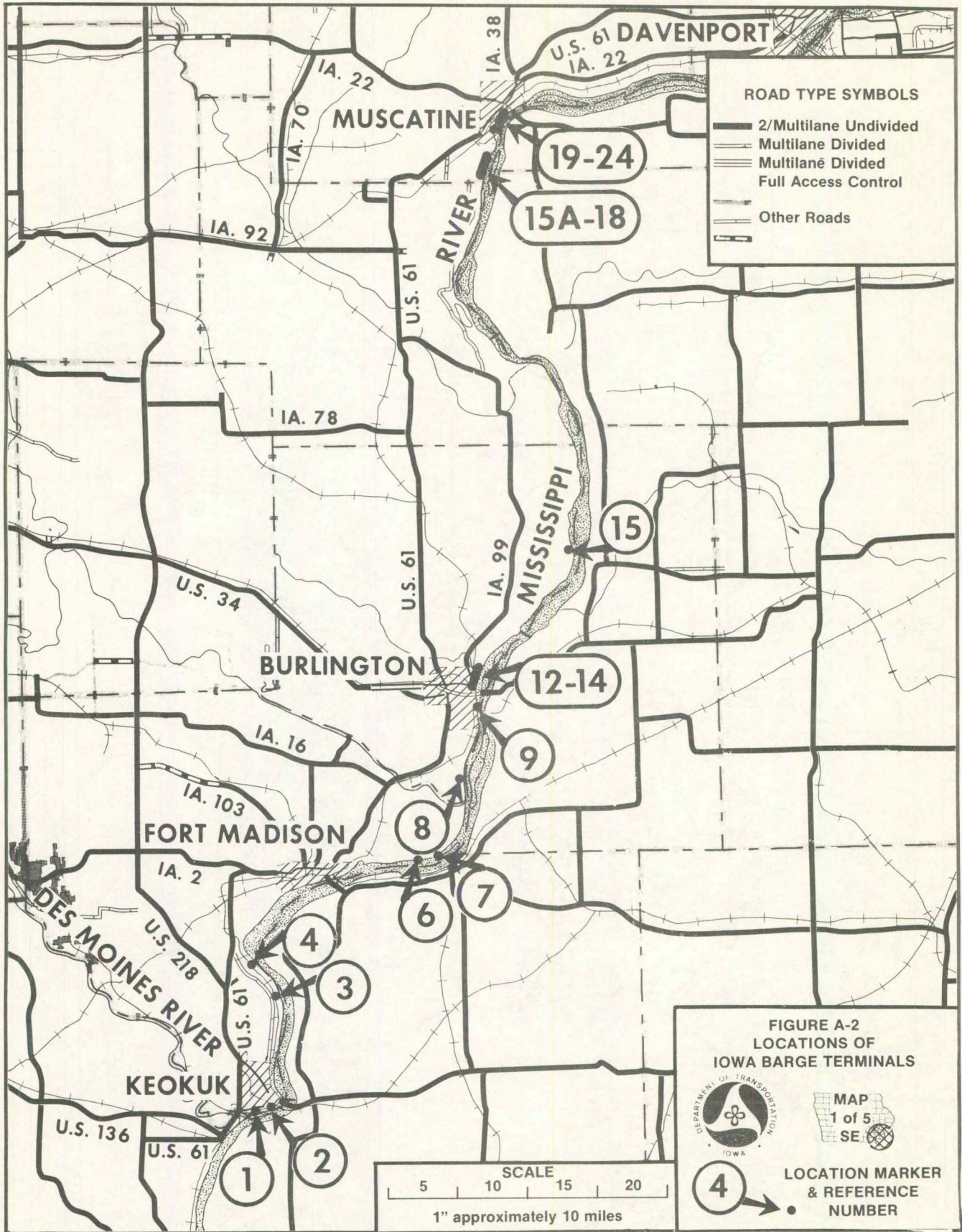
IOWA	OUTSIDE IOWA	TOTAL
4,119	1,487	5,606
922	138	1,060
5,041	1,625	6,666
1,887	0	1,887
6,928	1,625	8,553

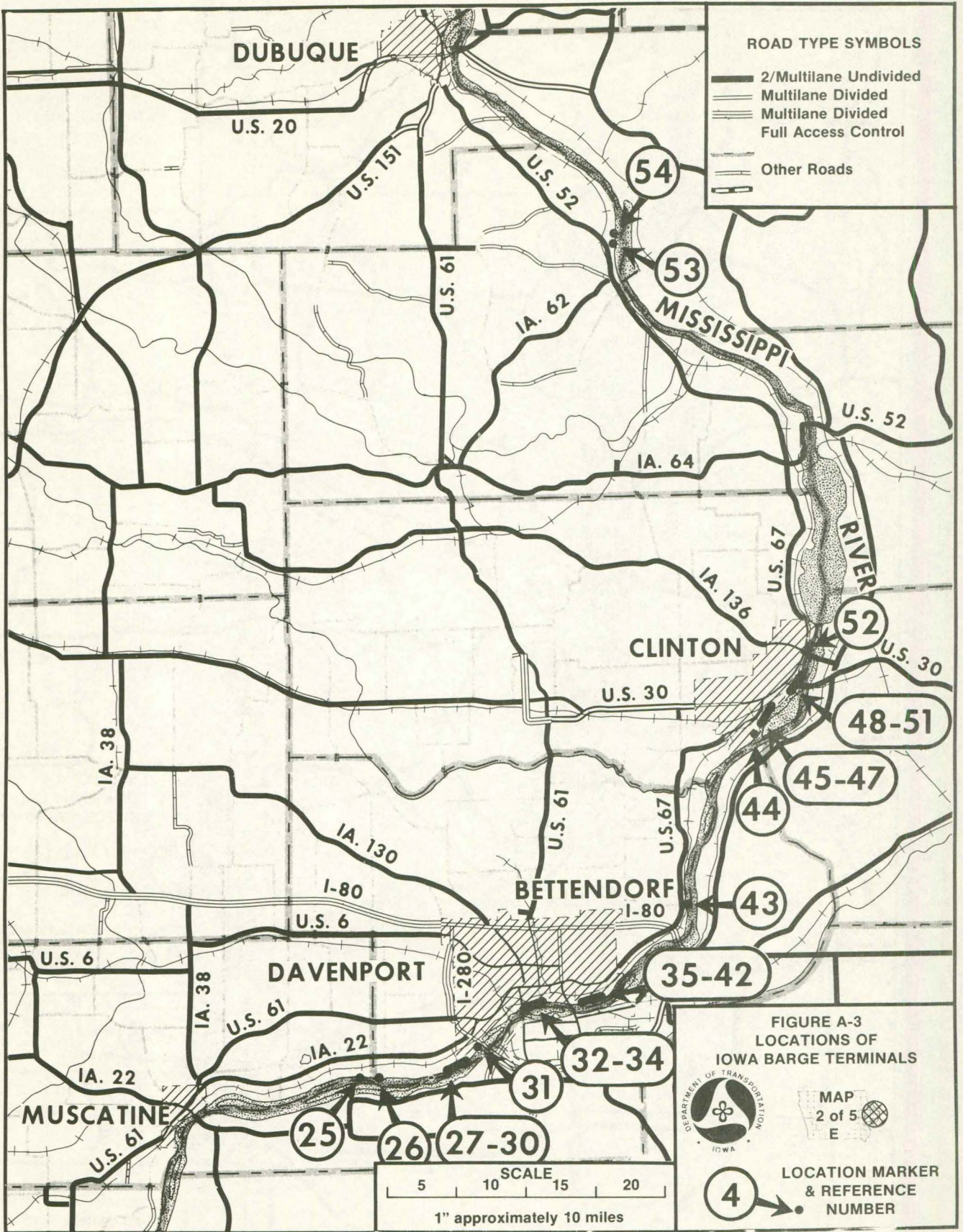
\*DISTRIBUTION SHOWN IN BLUE ON MAP ABOVE



APPENDIX







**ROAD TYPE SYMBOLS**

- 2/Multilane Undivided
- Multilane Divided
- Multilane Divided
- Full Access Control
- Other Roads

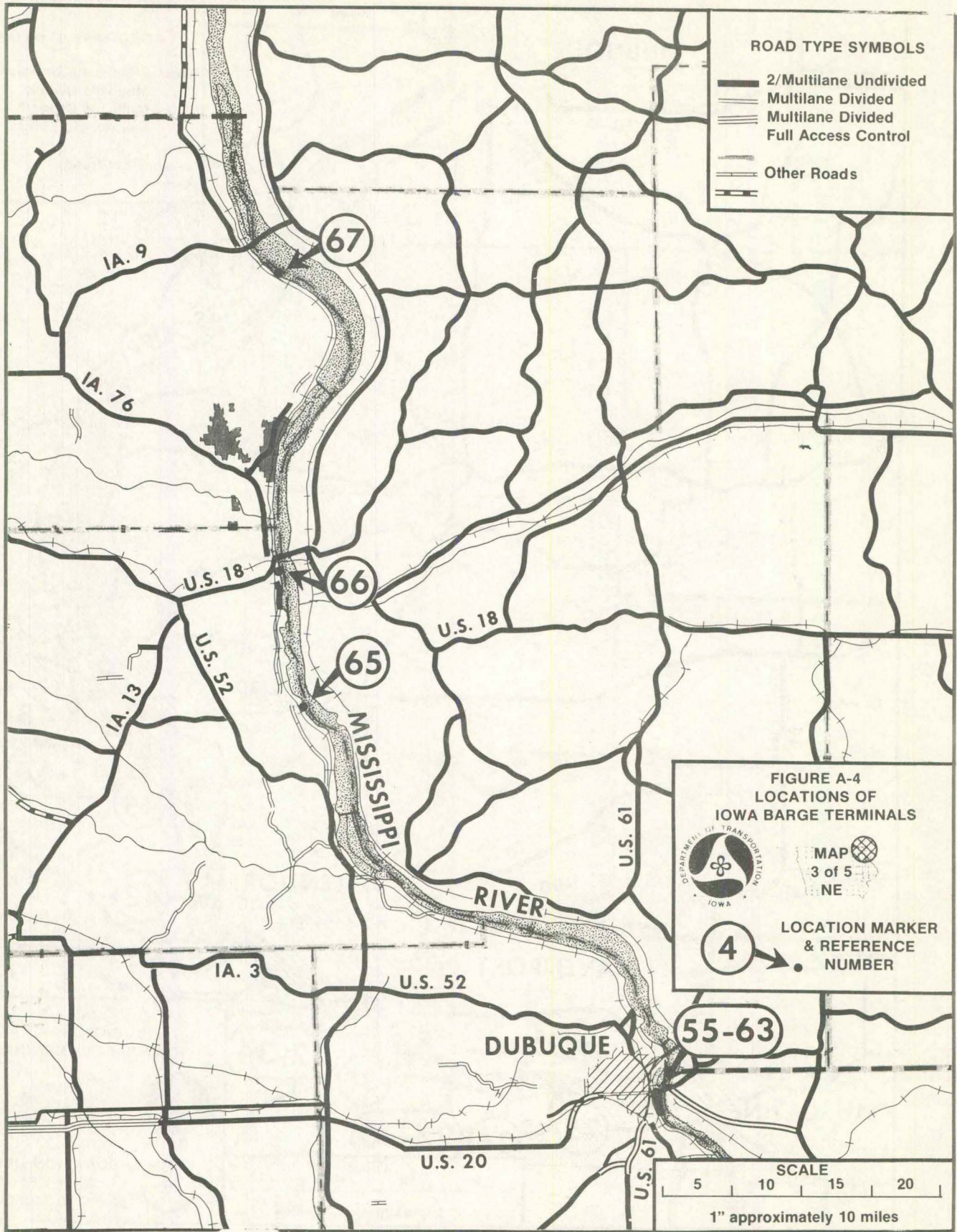
**FIGURE A-3  
LOCATIONS OF  
IOWA BARGE TERMINALS**

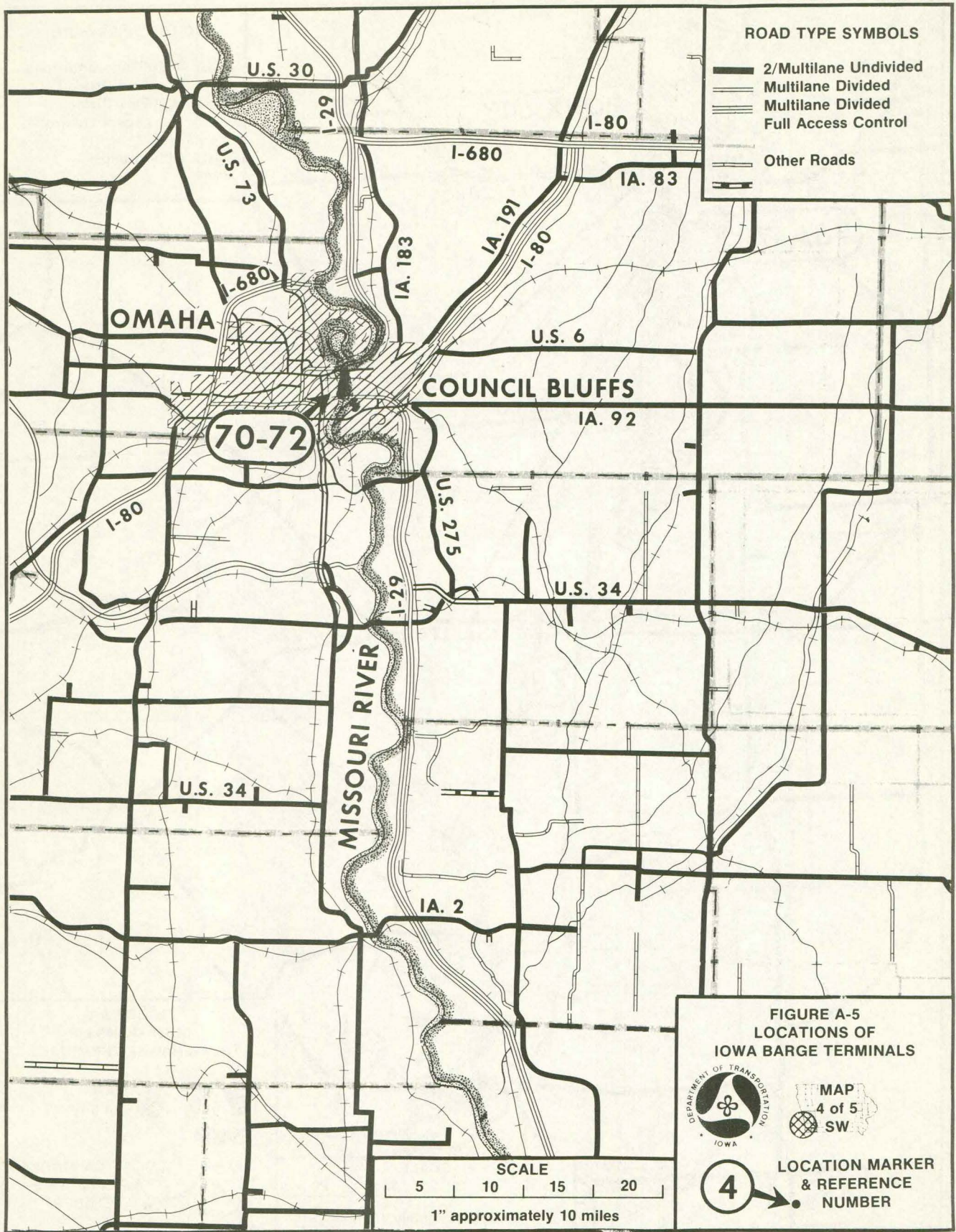
DEPARTMENT OF TRANSPORTATION  
IOWA

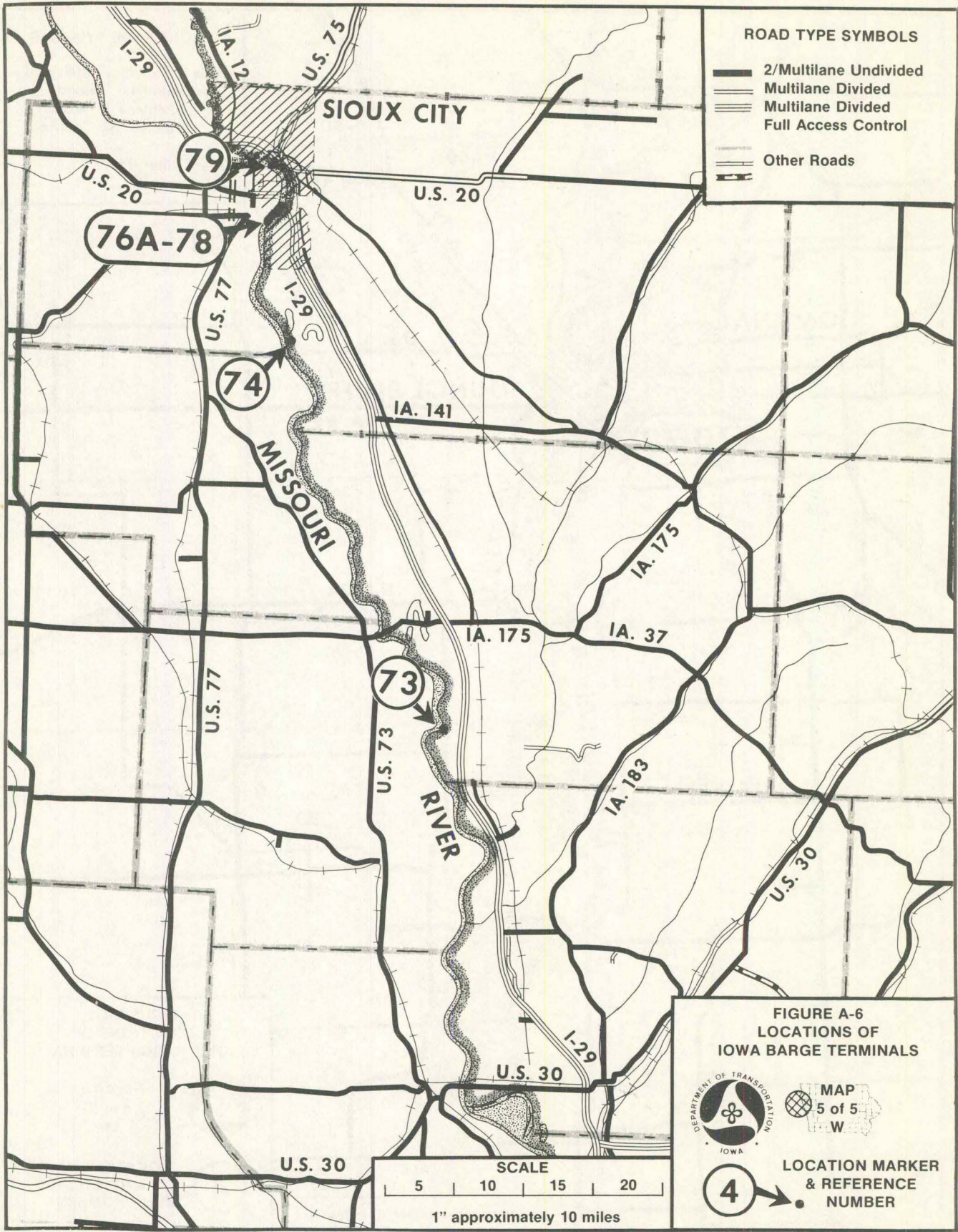
MAP  
2 of 5  
E

**4** LOCATION MARKER & REFERENCE NUMBER

5 10 15 20  
SCALE  
1" approximately 10 miles







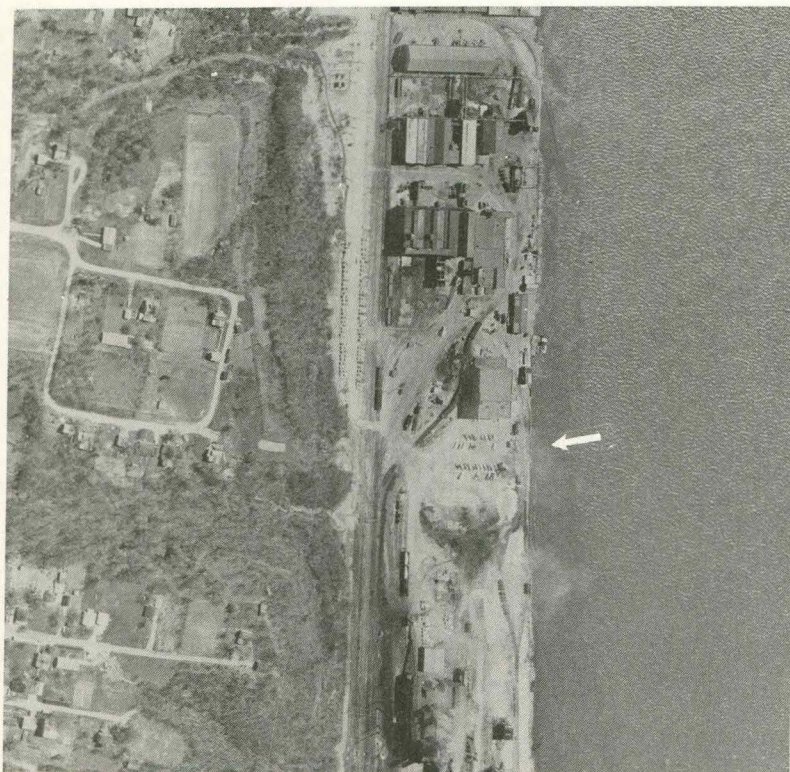
IOWA BARGE TERMINALS:  
PHOTOGRAPHS AND FACTS

White arrows on the photographs locate handling facilities used for commodity transfer between barges and land-based facilities.

The "Map Reference No." corresponds to numbers used in "Locations of Iowa Barge Terminals", pages A-2 through A-6. The terminals are numbered from south to north along the Mississippi and Missouri Rivers.

Photograph scale: 1 inch equals 500 feet.

MISSISSIPPI RIVER TERMINALS



MAP REFERENCE NO.: 1  
MILES ABOVE OHIO RIVER: 362.0  
NAME: Foote Mineral Co.

ADDRESS: Ferro-Alloys Division  
P.O. Box 527  
Keokuk, IA 52632

PHONE: (319)524-5130  
COMMODITIES HANDLED:

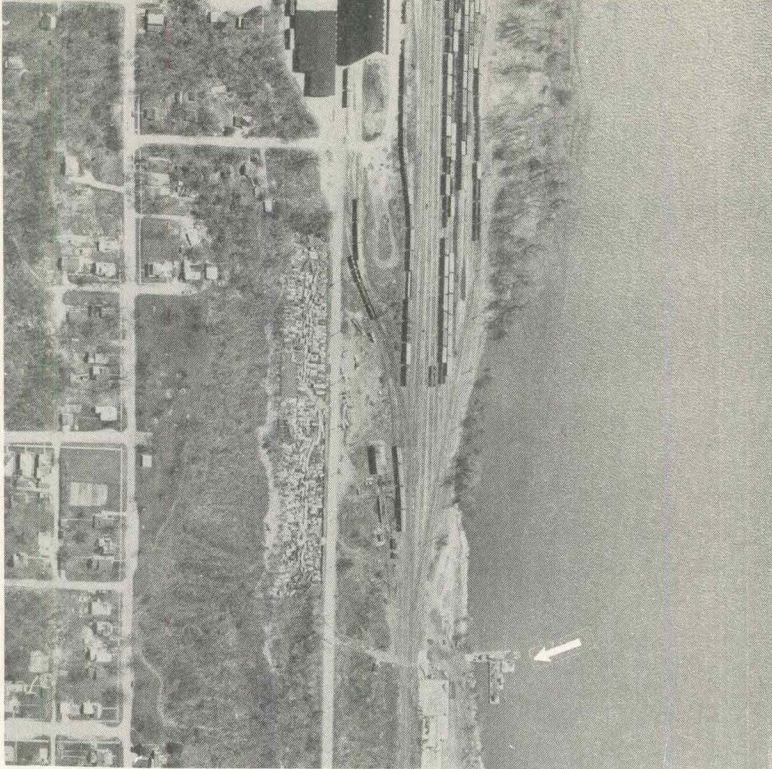
Manganese ore, pig iron, &  
construction equipment.

ACCESS: Truck & Rail  
3½ blocks south of US 136 on  
B St. & about 1 mile west on  
Commercial Street.

NOTES: Ships & receives  
commodities for pig iron  
refinery.



MISSISSIPPI RIVER TERMINALS

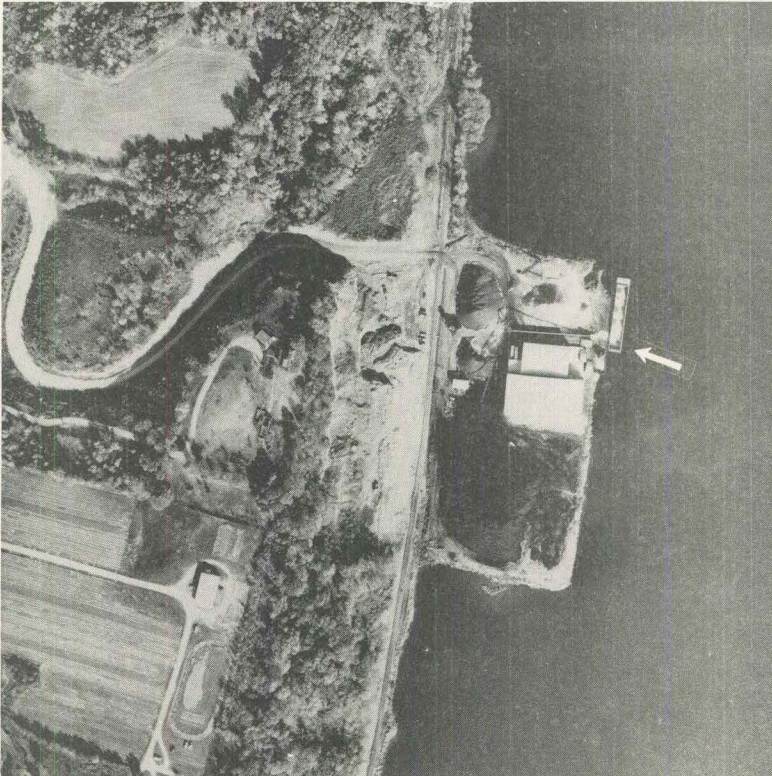


MAP REFERENCE NO.: 2  
MILES ABOVE OHIO RIVER: 362.3  
NAME: J.C. Hubinger Co.

ADDRESS: (Office)  
State Center Building  
610 Main St., Keokuk, IA 52632  
PHONE: (319)524-4151  
COMMODITIES HANDLED:  
Corn & corn gluten pellets.

ACCESS: Truck  
3½ blocks south of US 136 on  
B St. & about 0.5 mi. west on  
Commercial St. to barge  
facility.

NOTES: Ships grain products  
from corn processing plant.



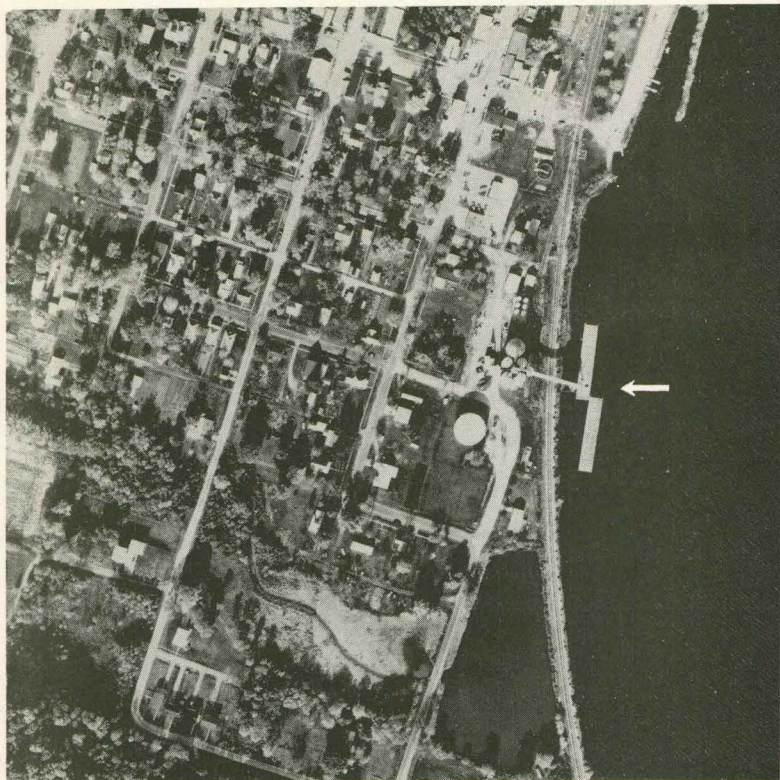
MAP REFERENCE NO.: 3  
MILES ABOVE OHIO RIVER: 371.1  
NAME: Iowa Gateway Terminal

ADDRESS: ATTN: W.E. Caldwell  
River Road  
Keokuk, IA 52632  
PHONE: (319)463-5426  
COMMODITIES HANDLED:  
Coal, salt, newsprint, &  
steel products.

ACCESS: Truck  
About 4.5 miles south of  
Montrose on narrow, winding,  
paved road & 0.3 mi. on steep,  
winding gravel road.

NOTES: Shipping & receiving  
agent.

MISSISSIPPI RIVER TERMINALS



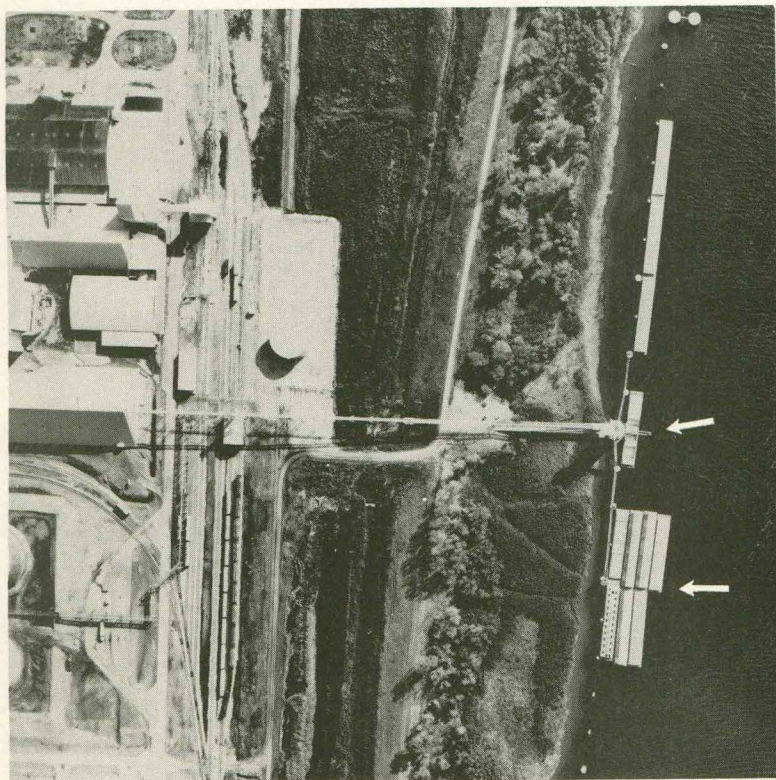
MAP REFERENCE NO.: 4  
MILES ABOVE OHIO RIVER: 374.9  
NAME: Hunold Elevator, Inc.

ADDRESS:  
Montrose, IA 52369

PHONE: (319)463-5421  
COMMODITIES HANDLED:  
Corn, soybeans, & wheat.

ACCESS: Truck & Rail  
On street in Montrose. A  
narrow paved road (IA 404)  
connects Montrose with US 61.

NOTES: Ships grain.



MAP REFERENCE NO.: 6  
MILES ABOVE OHIO RIVER: 389.0  
NAME: First Miss, Inc.

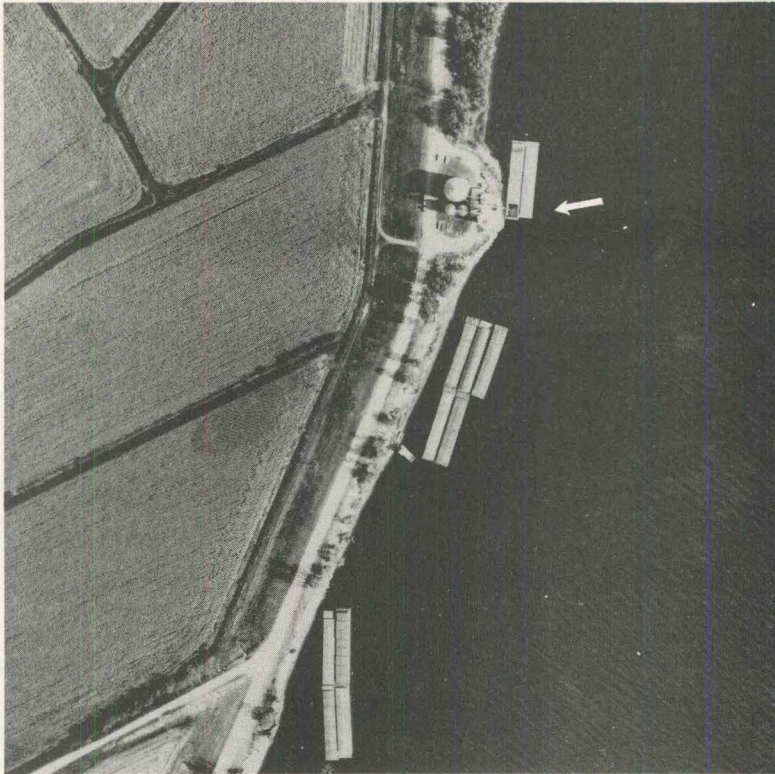
ADDRESS:  
P.O. Box 328  
Ft. Madison, IA 52627

PHONE: (319)376-2279  
COMMODITIES HANDLED:  
Diammonium phosphate,  
phosphate rock,  $\text{NH}_3$ , &  
fuel oil.

ACCESS: Truck & Rail  
SE of US 61 along 4.5 miles  
of paved and gravel roads.

NOTES: Ships fertilizer  
produced at the facility.

MISSISSIPPI RIVER TERMINALS



MAP REFERENCE NO.: 7  
MILES ABOVE OHIO RIVER: 390.0  
NAME: Green Bay Grain Co.

ADDRESS: (Office)  
Green Bay Landing  
Wever, IA 52658  
PHONE: (319)372-5924  
COMMODITIES HANDLED:  
Corn, soybeans, & wheat.

ACCESS: Truck  
SE of US 61 via 6 miles of  
good, gravel roads.

NOTES: Ships grain.



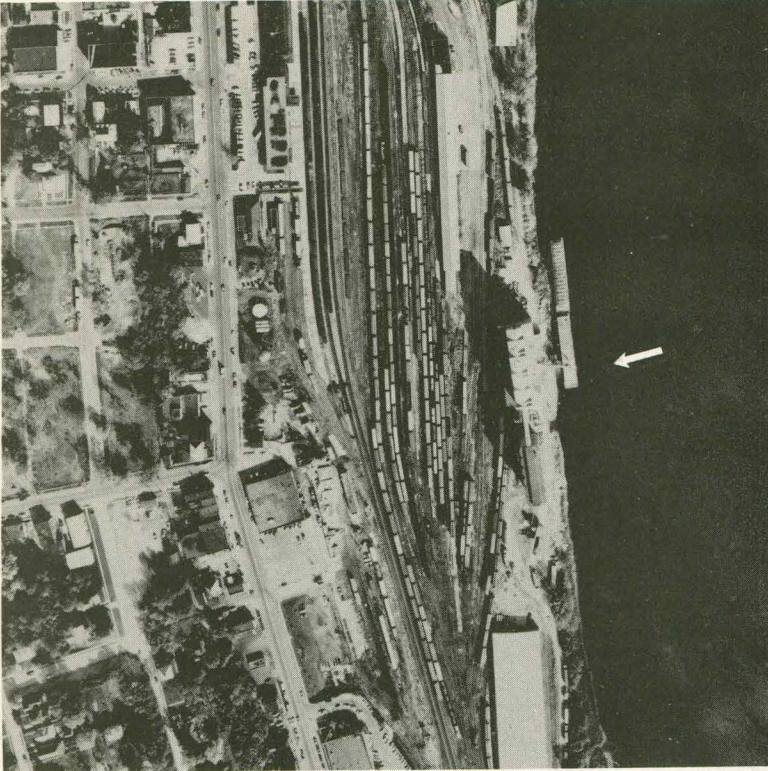
MAP REFERENCE NO.: 8  
MILES ABOVE OHIO RIVER: 399.4  
NAME: Standard Oil Co.

(AMOCO)  
ADDRESS: Anhydrous Ammonia Term.  
Old Highway 61 South  
Burlington, IA 52601  
PHONE: (319)752-3761  
COMMODITIES HANDLED:  
Anhydrous ammonia

ACCESS: Truck & Rail  
SE of paved county road via  
1 mi. of good, gravel roads  
(1 steep incline).

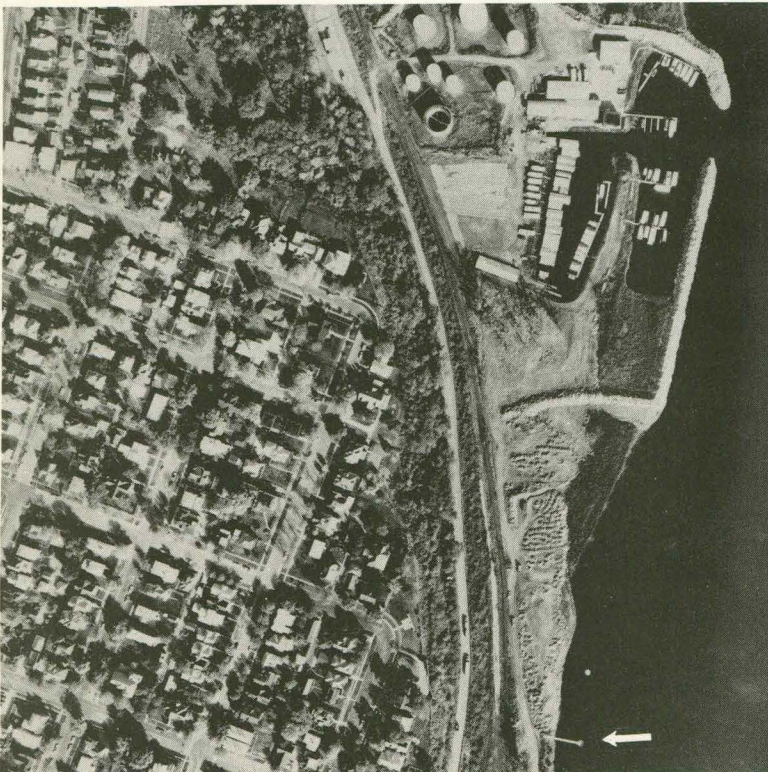
NOTES: Receives anhydrous  
ammonia.

MISSISSIPPI RIVER TERMINALS



MAP REFERENCE NO.: 9  
MILES ABOVE OHIO RIVER: 403.6  
NAME: Tabor & Co., Division  
of A-D-M Export  
ADDRESS:  
Box 309  
Burlington, IA 52601  
PHONE: (319)752-4586  
COMMODITIES HANDLED:  
Grain, soybean meal, &  
gluten pellets.

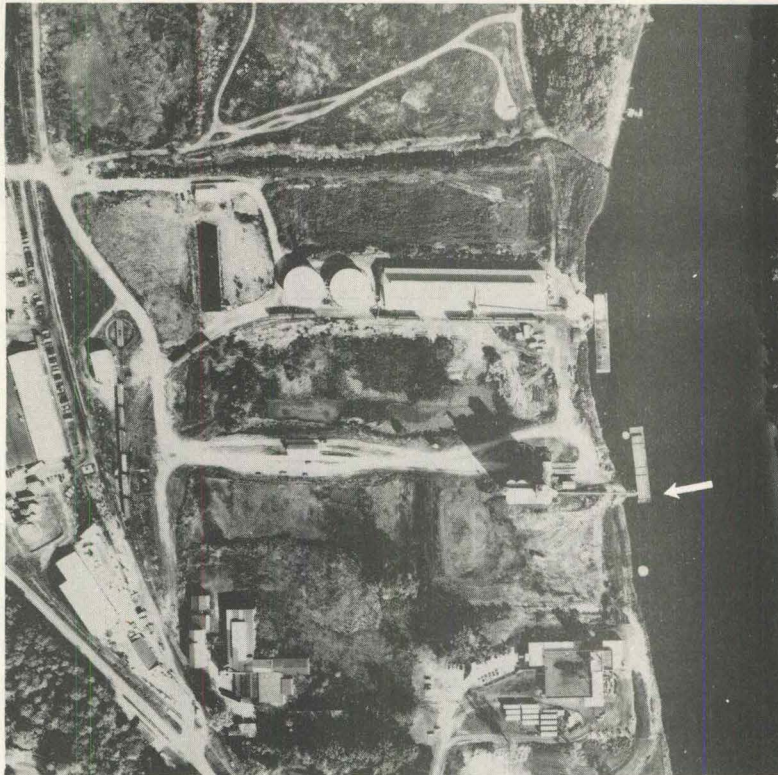
ACCESS: Truck & Rail  
1 mi. east of Burlington  
business district via gravel  
roads with rough RR crossing &  
steep incline.  
NOTES: Ships grain.



MAP REFERENCE NO.: 12  
MILES ABOVE OHIO RIVER: 404.5  
NAME: Yetter Oil Company  
ADDRESS:  
911 Osborne Street  
Burlington, IA 52601  
PHONE: (319)752-6331  
COMMODITIES HANDLED:  
Gasoline & fuel oil.

ACCESS: Truck  
East of IA 99 via steep,  
gravel road. Easy access to  
truck loading area west of  
IA 99.  
NOTES: Receives petroleum.

MISSISSIPPI RIVER TERMINALS



MAP REFERENCE NO.: 13  
MILES ABOVE OHIO RIVER: 405.2  
NAME: Wayne Brothers Grain Co.

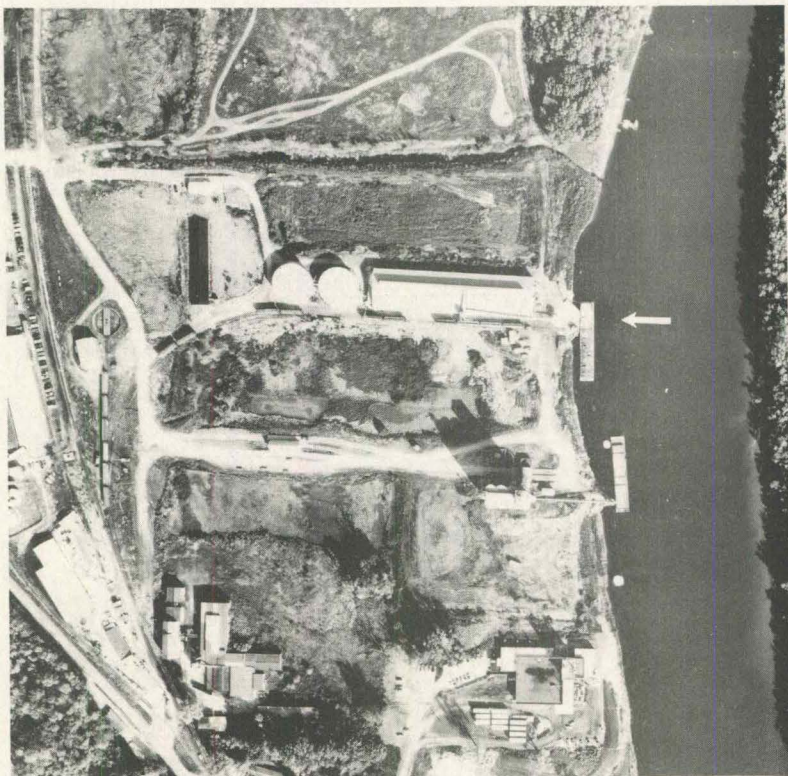
ADDRESS:

P.O. Box 804  
Burlington, IA 52601  
PHONE: (319)753-2857  
COMMODITIES HANDLED:  
Corn & soybeans.

ACCESS: Truck

About 0.3 mile east of IA  
99 on good, gravel road.

NOTES: Ships grain.



MAP REFERENCE NO.: 14  
MILES ABOVE OHIO RIVER: 405.3  
NAME: Burlington River  
Terminal, Inc.

ADDRESS: ATTN: A.G. Stevenson  
P.O. Box 884  
Burlington, IA 52601  
PHONE: (319)752-3611  
COMMODITIES HANDLED:

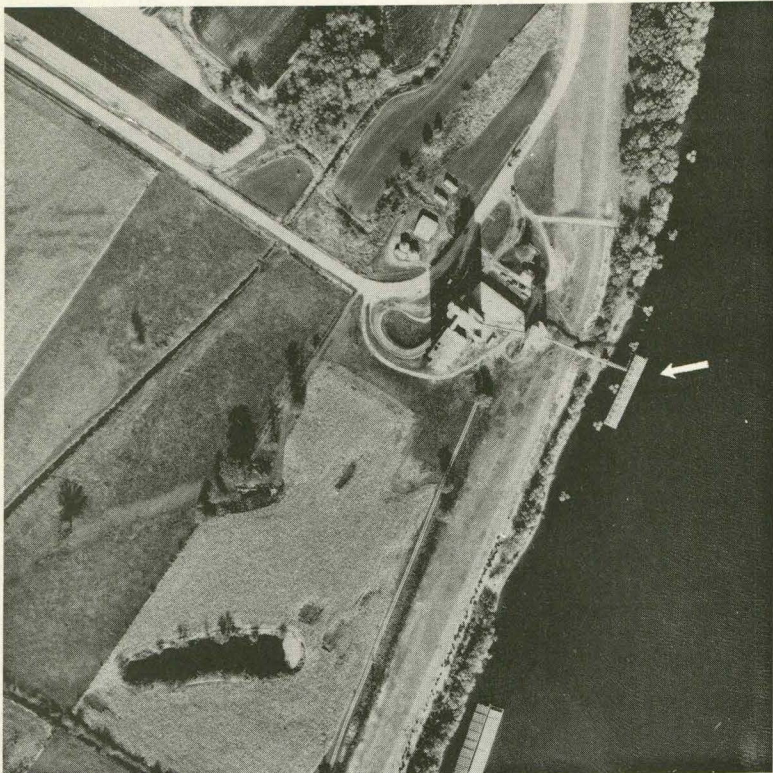
Liquid & dry fertilizers, &  
steel.

ACCESS: Truck & Rail

East of IA 99 via 0.3 mi. of  
good, gravel road; crosses 4  
sets of RR tracks.

NOTES: Receives fertilizer &  
general commodities.

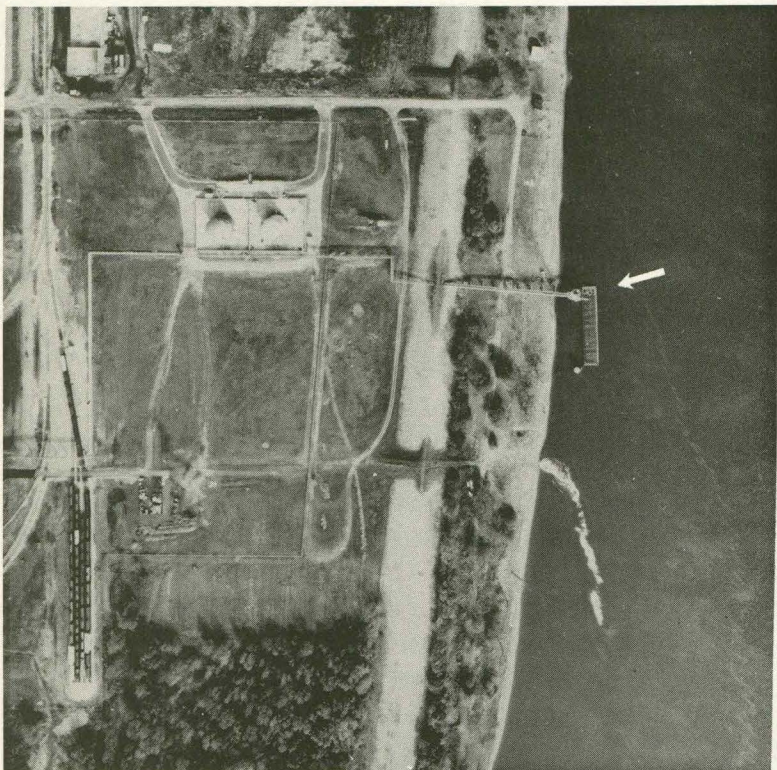
MISSISSIPPI RIVER TERMINALS



MAP REFERENCE NO.: 15  
MILES ABOVE OHIO RIVER: 418.2  
NAME: Farmers Grain Dealers,  
Inc.  
ADDRESS:  
Rural Route 2  
Burlington, IA 52601  
PHONE: (319)937-6155  
COMMODITIES HANDLED:  
Corn, soybeans, & wheat.

ACCESS: Truck  
East of IA 99 about 6 miles  
via level, good, gravel roads.

NOTES: Ships grain.

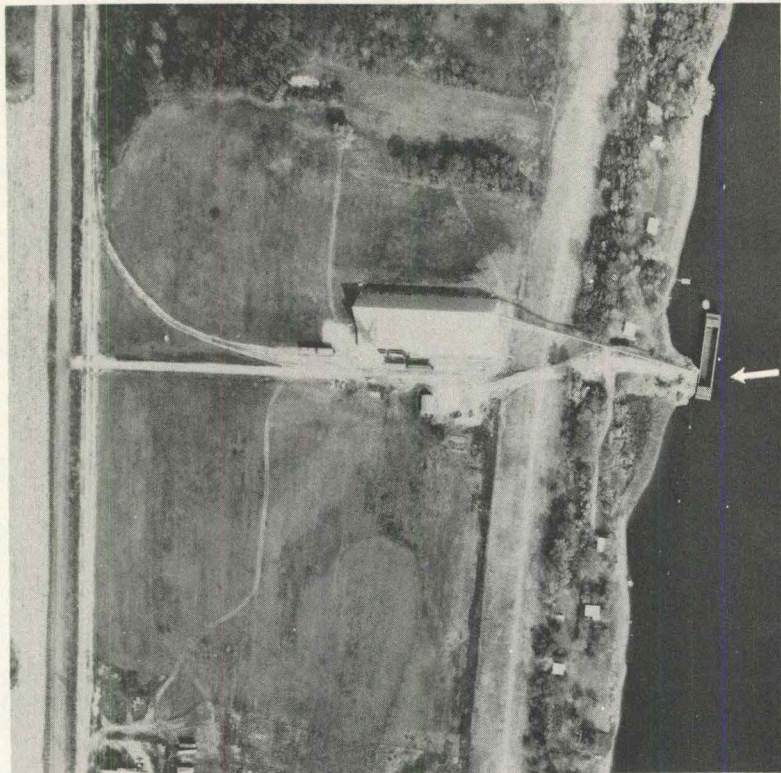


MAP REFERENCE NO.: 15A  
MILES ABOVE OHIO RIVER: 449.9  
NAME: Monsanto Agricultural  
Products Co.  
ADDRESS:  
Rural Route 5  
Muscatine, IA 52761  
PHONE: (319)263-0093  
COMMODITIES HANDLED:  
Styrene & acrylonitrile.

ACCESS: Truck & Rail  
SE of IA 92 about 4 miles  
via good, paved & gravel  
roads.

NOTES: Receives chemicals for  
producing plastics. Barge  
operations started in 1976.

MISSISSIPPI RIVER TERMINALS

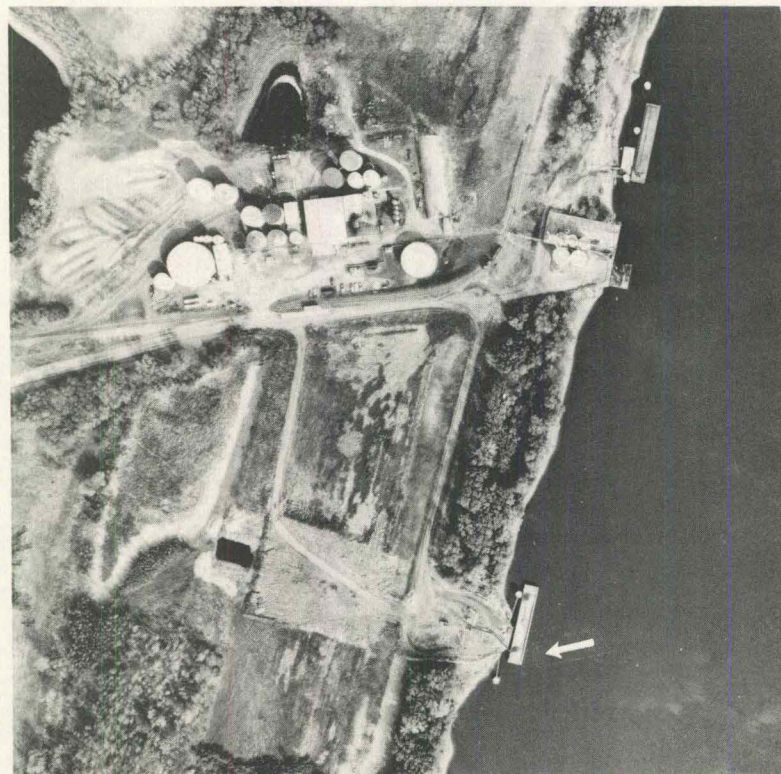


MAP REFERENCE NO.: 16  
MILES ABOVE OHIO RIVER: 450.3  
NAME: Farmland Industries

ADDRESS: Fertilizer Warehouse  
Rural Route 5  
Muscatine, IA 52761  
PHONE: (319)264-1721  
COMMODITIES HANDLED:  
Dry fertilizer

ACCESS: Truck & Rail  
South of US 61 about 3.5 mi.  
via good roads - paved &  
gravel.

NOTES: Receives fertilizer.



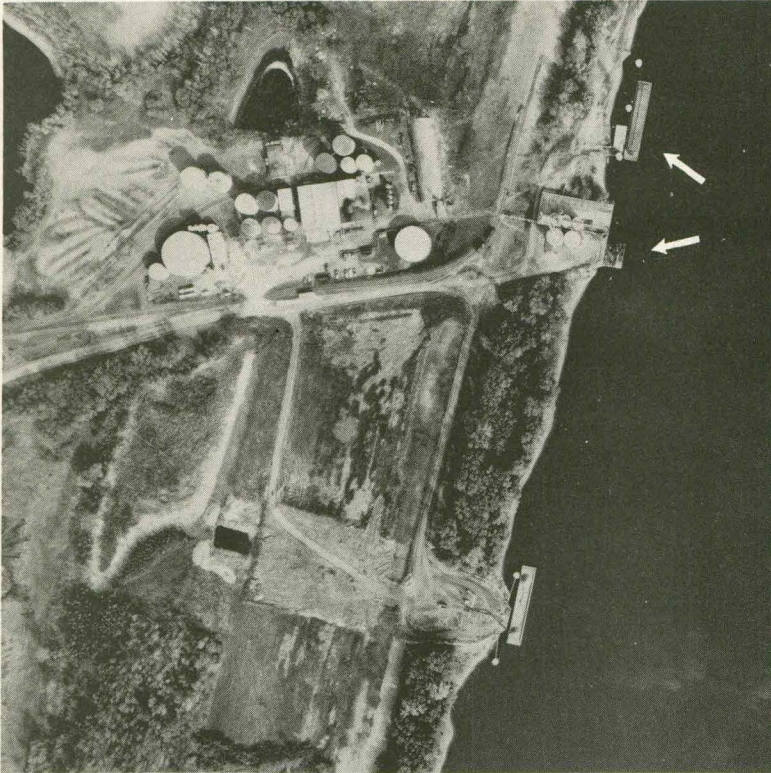
MAP REFERENCE NO.: 17  
MILES ABOVE OHIO RIVER: 451.2  
NAME: W.G. Block Co.

ADDRESS: (Office)  
317 E. 4th  
Davenport, IA 52801  
PHONE: (319) 326-1651  
COMMODITIES HANDLED:  
Sand, gravel, rock & stone.

ACCESS: Truck  
SE of US 61 via 3.5 mi. of  
good roads - paved & gravel.

NOTES: Ships commodities  
owned by W.G. Block Co.  
New terminal operating in  
1976.

MISSISSIPPI RIVER TERMINALS



MAP REFERENCE NO.: 18  
MILES ABOVE OHIO RIVER: 451.3  
NAME: River Terminal Corp.

ADDRESS:

P.O. Box 1036  
Muscatine, IA 52761  
PHONE: (319)263-3155

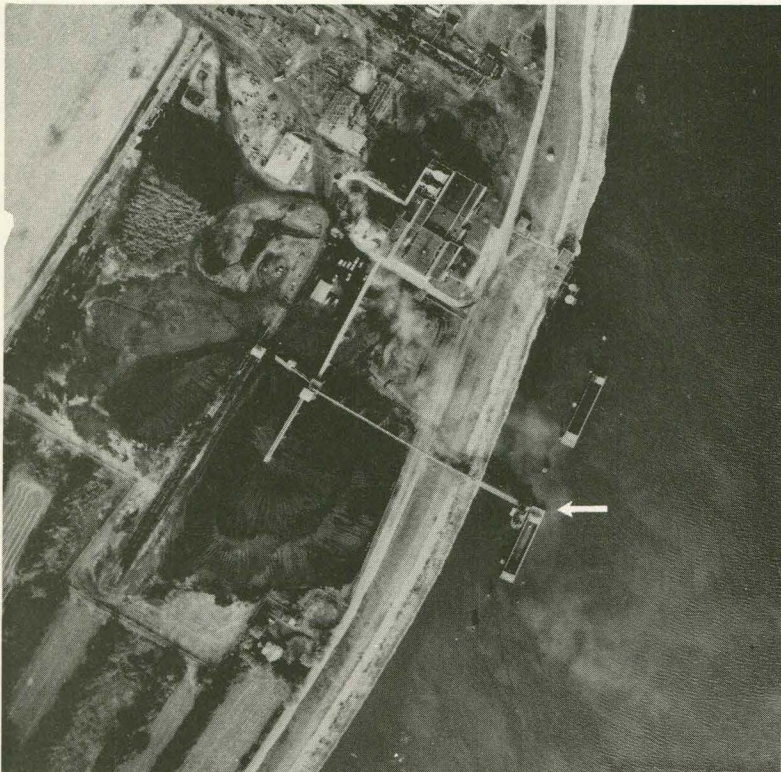
COMMODITIES HANDLED:

Liquid fertilizer, molasses,  
condensed fish solubles,  
soybean oil.

ACCESS: Truck & Rail

East of US 61 about 3.5 miles  
via good roads - paved &  
gravel.

NOTES: Ships & receives  
general merchandise.  
Adjacent land & storage  
leased to other companies.



MAP REFERENCE NO.: 19  
MILES ABOVE OHIO RIVER: 452.9  
NAME: Muscatine Power & Water

Co.  
ADDRESS: (Office)  
818 E. 8th Street  
Muscatine, IA 52761

PHONE: (319)263-2631

COMMODITIES HANDLED:

Coal

ACCESS: Rail

East of US 61 about 1.5 miles  
via good, paved streets.

NOTES: Receives coal.  
All coal used for producing  
electricity.



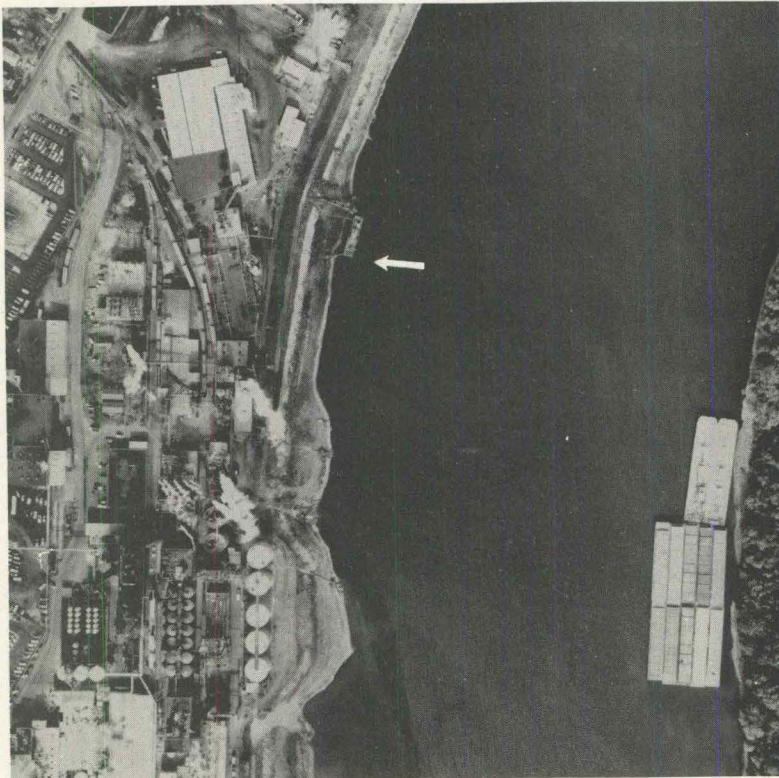
MISSISSIPPI RIVER TERMINALS



MAP REFERENCE NO.: 20  
MILES ABOVE OHIO RIVER: 453.2  
NAME: Farmers Grain Dealers  
Association  
ADDRESS:  
Rural Route 5  
Muscatine, IA 52761  
PHONE: (319)263-9414  
COMMODITIES HANDLED:  
Corn & soybeans.

ACCESS: Truck & Rail  
East of US 61 about 1 mile  
via good, paved streets.

NOTES: Ships grain.



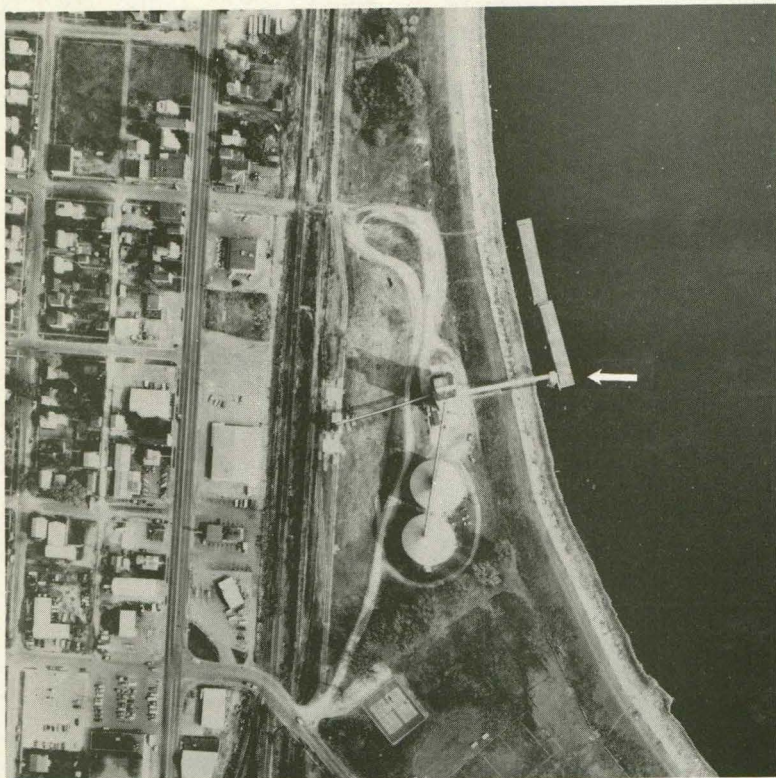
MAP REFERENCE NO.: 21  
MILES ABOVE OHIO RIVER: 453.8  
NAME: Grain Processing Corp.

ADDRESS:  
1600 Oregon Avenue  
Muscatine, IA 52761  
PHONE: (319)263-1321  
COMMODITIES HANDLED:  
Alcohol

ACCESS: Truck & Rail  
SE of US 61 about 6 blocks  
via good, paved streets.

NOTES: Ships alcohol from  
corn processing plant.

MISSISSIPPI RIVER TERMINALS



MAP REFERENCE NO.: 22  
MILES ABOVE OHIO RIVER: 454.2  
NAME: Central Soya Co.

ADDRESS:

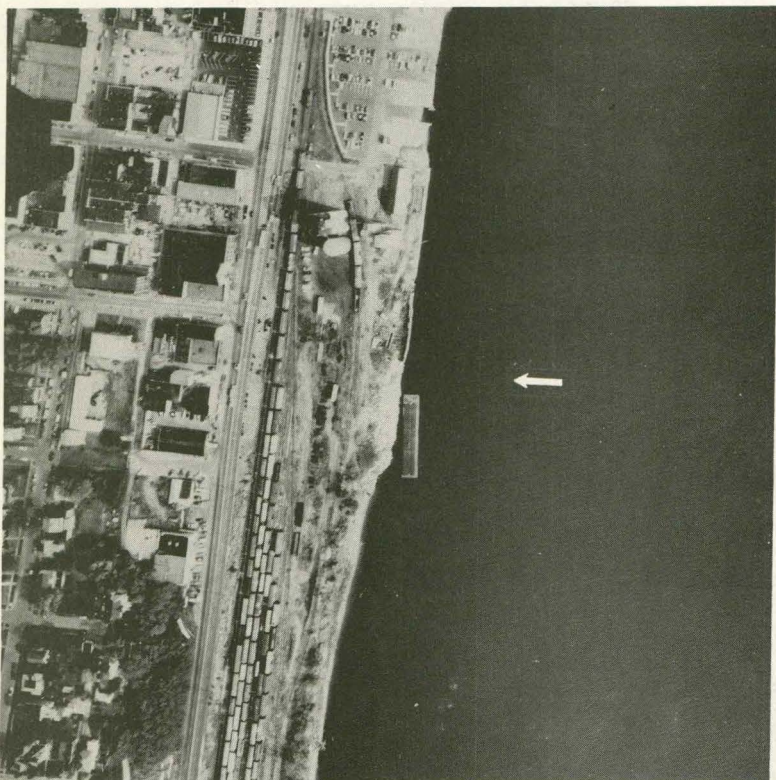
P.O. Box 806  
Muscatine, IA 52761  
PHONE: (319)263-4343  
COMMODITIES HANDLED:  
Corn & soybeans.

ACCESS: Truck & Rail

East of US 61 about 3 blocks  
via paved street across rough  
RR tracks & short gravel road.

NOTES: Ships grain.

Operates together with  
Central Soya terminal 1 mile  
north.



MAP REFERENCE NO.: 24  
MILES ABOVE OHIO RIVER: 455.3  
NAME: Central Soya Co.

ADDRESS:

P.O. Box 806  
Muscatine, IA 52761  
PHONE: (319)263-4343  
COMMODITIES HANDLED:  
Corn & soybeans.

ACCESS: Truck & Rail

East of US 61 via short  
driveway across RR tracks.

NOTES: Ships grain.

Operates together with  
Central Soya terminal 1 mile  
south.

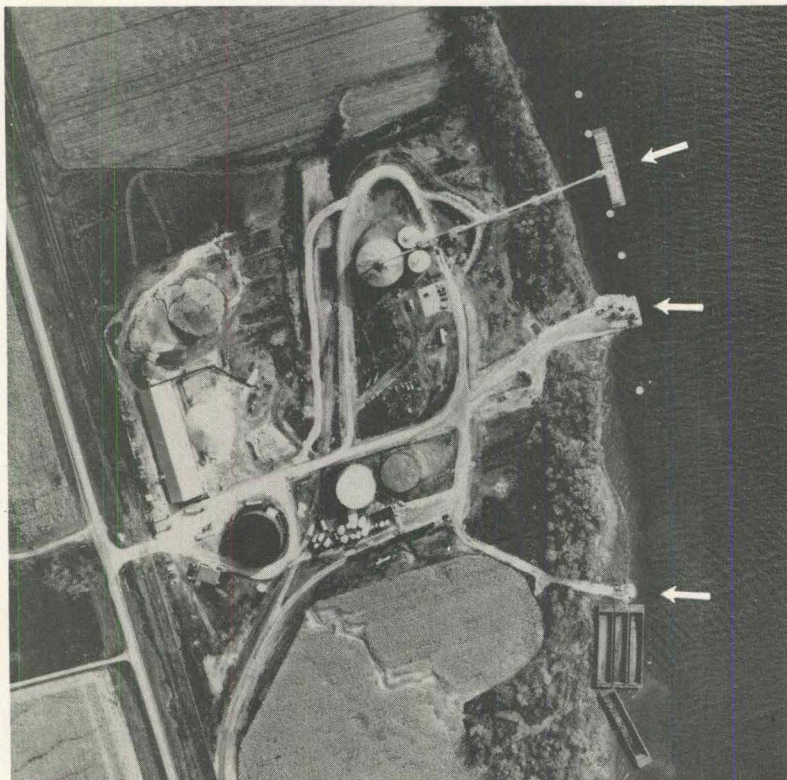
MISSISSIPPI RIVER TERMINALS



MAP REFERENCE NO.: 25  
MILES ABOVE OHIO RIVER: 468.0  
NAME: Eastern Iowa Light &  
Power Corporation  
ADDRESS:  
P.O. Box 110  
Montpelier, IA 52759  
PHONE: (319)263-6898  
COMMODITIES HANDLED:  
Coal

ACCESS: Truck  
South of IA 22 via short,  
paved driveway across rough  
RR tracks.

NOTES: Receives coal.  
All coal used for producing  
electricity.



MAP REFERENCE NO.: 26  
MILES ABOVE OHIO RIVER: 469.8  
NAME: Cargill, Inc.

ADDRESS: Buffalo, IA 52728  
PHONE: (319)381-2210 (salt)  
PHONE: (319)381-2535 (molasses)  
PHONE: (319)381-2323 (grain)  
COMMODITIES HANDLED:

Corn, soybeans, soybean  
meal, industrial & road salt,  
& molasses.

ACCESS: Truck  
South of IA 22 via short  
gravel driveway across rough  
RR tracks.

NOTES: Ships & receives a  
variety of commodities.

MISSISSIPPI RIVER TERMINALS

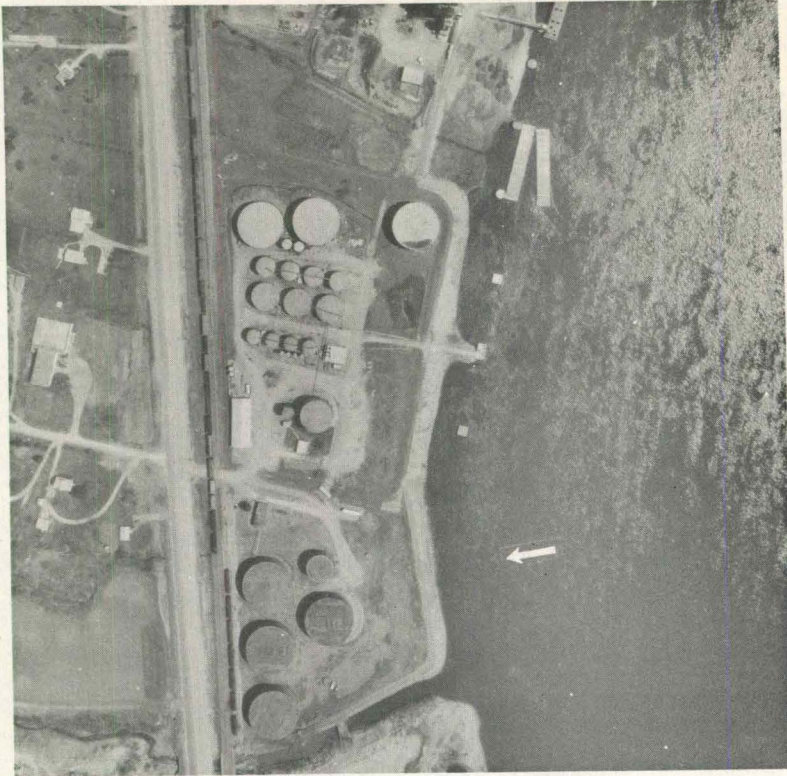


MAP REFERENCE NO. : 27  
MILES ABOVE OHIO RIVER: 474.7  
NAME: Martin Marietta Cement  
(Dewey Portland Cement)  
ADDRESS:  
606A Davenport Bank Bldg.  
Davenport, IA 52808  
PHONE: (319)323-2751  
COMMODITIES HANDLED:  
Coal

ACCESS: Truck & Rail  
South of IA 22 via good,  
flat, paved driveway across  
rough RR tracks.

NOTES: Receives coal.  
All coal is used in producing  
cement.

MISSISSIPPI RIVER TERMINALS



MAP REFERENCE NO.: 27A  
MILES ABOVE OHIO RIVER: 475.4  
NAME: MacMillian Oil Co.

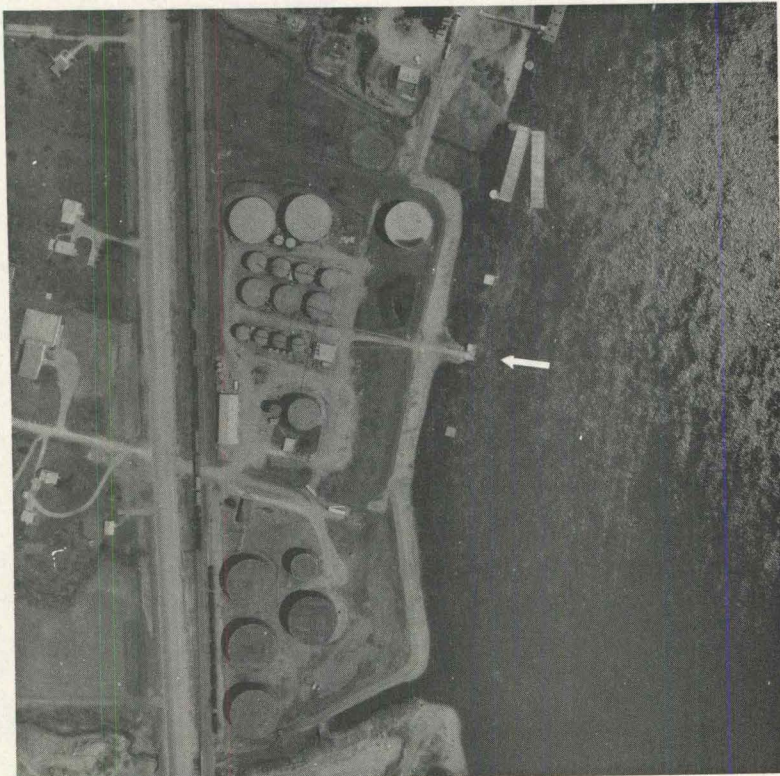
ADDRESS:

P.O. Box 265  
Davenport, IA 52808  
PHONE: (319)383-0009  
COMMODITIES HANDLED:  
Fuel oil

ACCESS: Truck

South of IA 22 via short  
driveway across rough RR  
tracks.

NOTES: Receives petroleum  
products. Barge facilities  
to be completed in 1977.



MAP REFERENCE NO.: 28  
MILES ABOVE OHIO RIVER: 475.5  
NAME: American Oil Co.  
(AMOCO)

ADDRESS:

P.O. Box 3397  
Davenport, IA 52808  
PHONE: (319)324-5276  
COMMODITIES HANDLED:

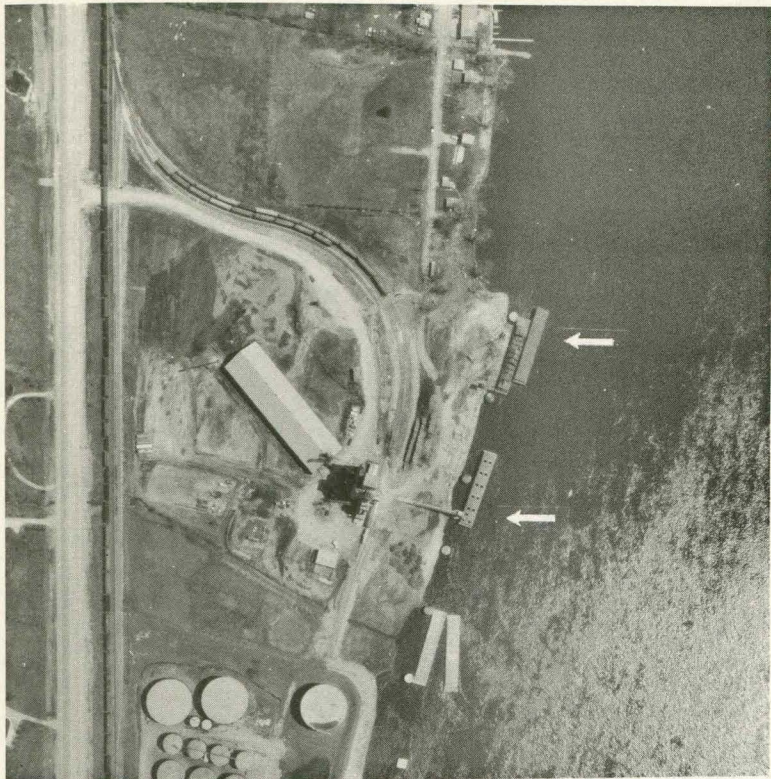
Fuel oil, asphalt &  
road oil.

ACCESS: Truck

South of IA 22 via good,  
gravel driveway across  
rough RR tracks.

NOTES: Receives petroleum  
products.

MISSISSIPPI RIVER TERMINALS



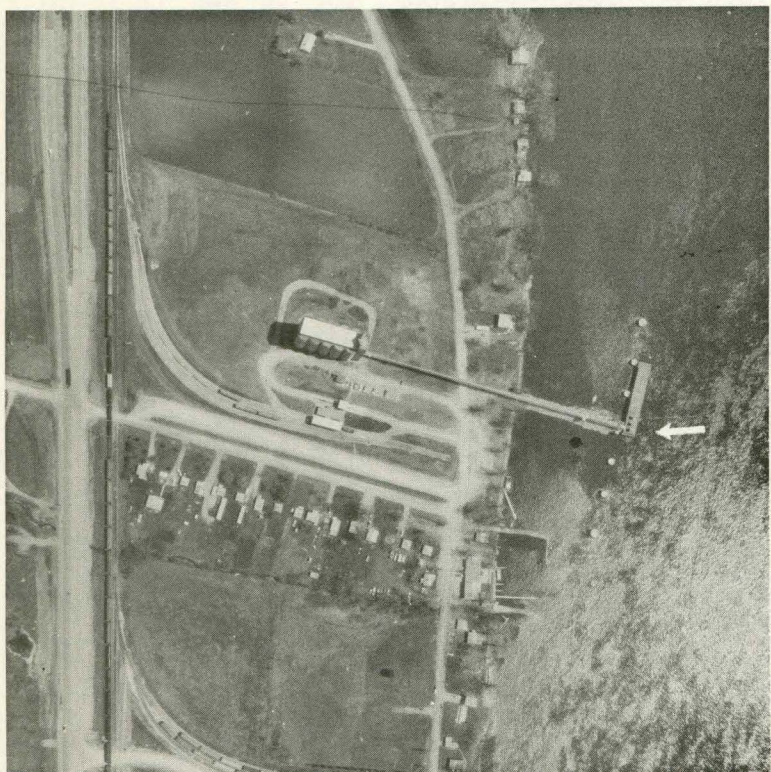
MAP REFERENCE NO.: 29  
MILES ABOVE OHIO RIVER: 475.7  
NAME: Pillsbury Company

ADDRESS: (Office)  
1600 Brady Street  
Davenport, IA 52803  
PHONE: (319)326-3581  
COMMODITIES HANDLED:

Corn, corn screenings, soybeans, wheat, salt, & oak logs.

ACCESS: Truck & Rail  
South of IA 22 via good, gravel driveway across rough RR tracks.

NOTES: Ships & receives commodities.



MAP REFERENCE NO.: 30  
MILES ABOVE OHIO RIVER: 476.0  
NAME: Mississippi River

Grain Elevator, Inc.  
ADDRESS:

6603 S. Concord  
Davenport, IA 52802  
PHONE: (319) 324-5214  
COMMODITIES HANDLED:

Corn, corn products, & soybeans.

ACCESS: Truck & Rail  
South of IA 22 via good, gravel driveway across rough RR tracks.

NOTES: Ships grain.

MISSISSIPPI RIVER TERMINALS

MAP REFERENCE NO.: 31  
MILES ABOVE OHIO RIVER: 477.8  
NAME: W.G. Block Co.

ADDRESS: (Terminal-S. Concord St.)  
Office: 317 E. 4th  
Davenport, IA 52801  
PHONE: (319)326-1651  
COMMODITIES HANDLED:  
Sand, gravel, crushed rock & stone.

ACCESS: Truck  
East of IA 22 via 2 miles of hard-surfaced roads.

NOTES: New terminal operating in 1976.

NO PICTURE AVAILABLE

MAP REFERENCE NO.: 32  
MILES ABOVE OHIO RIVER: 483.2  
NAME: Builders Sand & Gravel

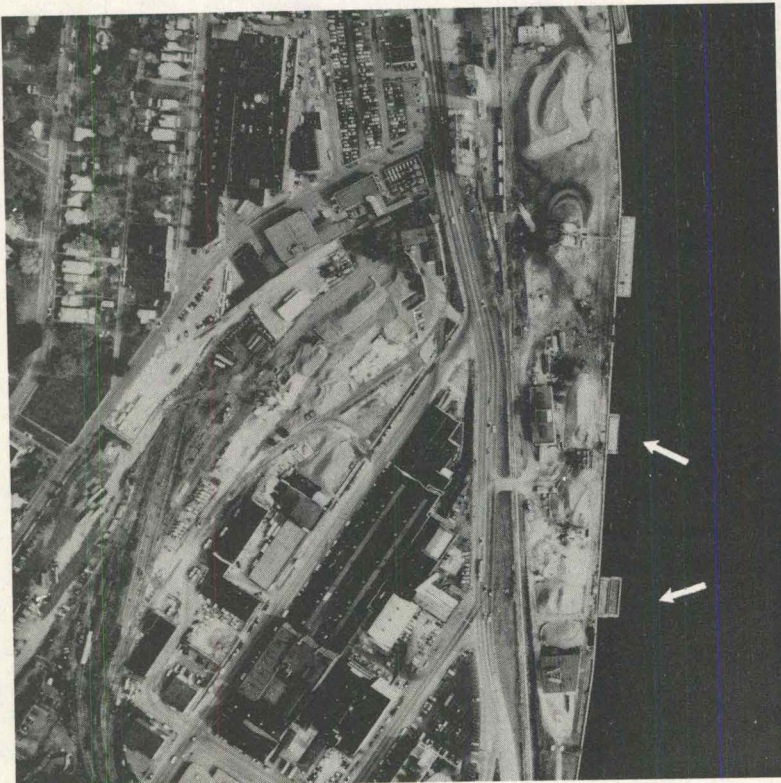
Company  
ADDRESS: (Main Office)

104 Western Ave.  
Davenport, IA 52801  
PHONE: (319)322-1757

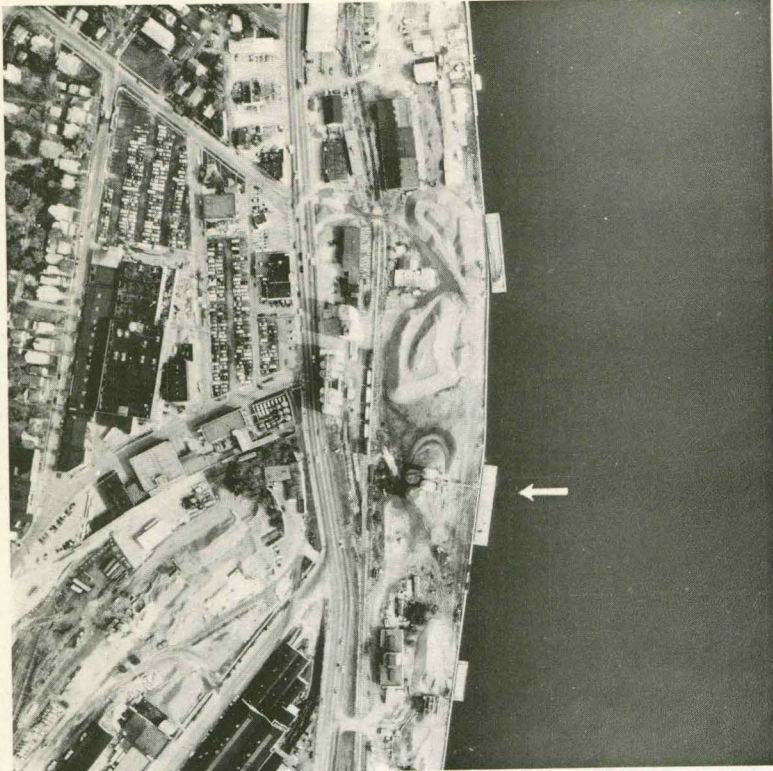
COMMODITIES HANDLED:  
Sand & gravel.

ACCESS: Truck  
South of US 67 via good, gravel driveway across rough RR tracks.

NOTES: Receives sand & gravel dredged from the Mississippi River.



MISSISSIPPI RIVER TERMINALS



MAP REFERENCE NO.: 33  
MILES ABOVE OHIO RIVER: 483.3  
NAME: Alter Company

ADDRESS:

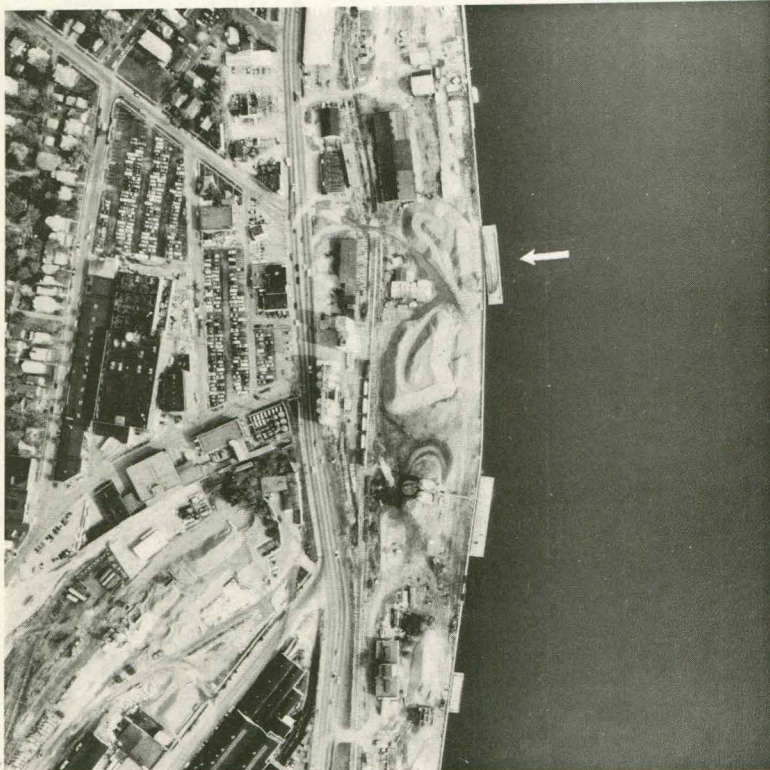
2333 Rockingham Road  
Davenport, IA 52802  
PHONE: (319)326-2561  
COMMODITIES HANDLED:

Corn, soybeans, scrap iron,  
car bodies, miscellaneous  
steel, & ingots.

ACCESS: Truck & Rail

South of US 67 via good,  
gravel driveway across rough  
RR tracks.

NOTES: Ships & receives general  
commodities for its own  
operations & under contract  
with other companies.



MAP REFERENCE NO.: 34  
MILES ABOVE OHIO RIVER: 483.3  
NAME: W.G. Block Co.

ADDRESS: (Office)

317 E. 4th  
Davenport, IA 52801  
PHONE: (319)326-1651  
COMMODITIES HANDLED:

Sand, gravel, & stone.

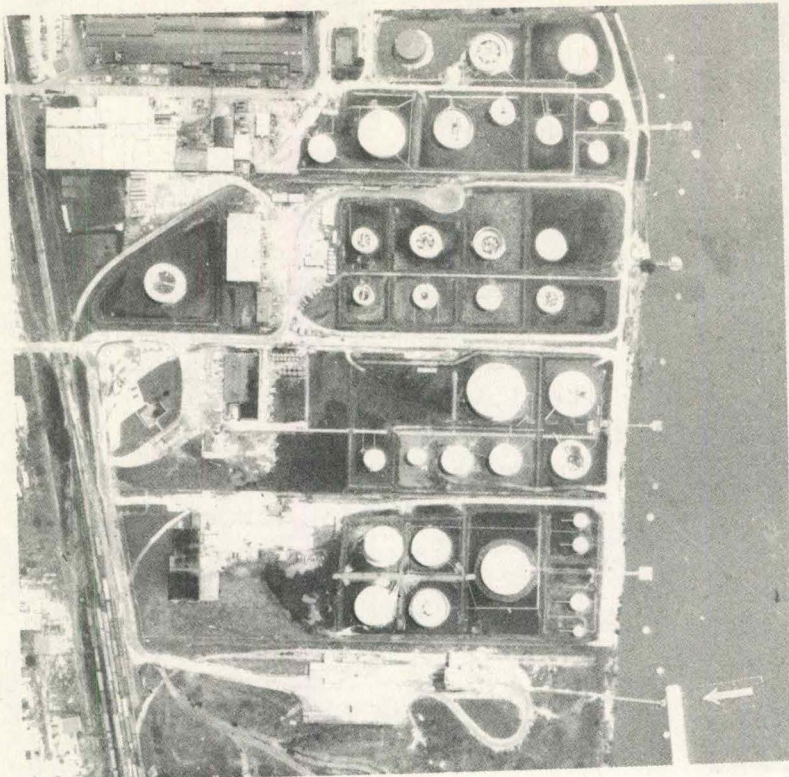
ACCESS: Truck & Rail

South of US 67 via good,  
gravel driveway across rough  
RR tracks.

NOTES: Receives sand, gravel,  
& stone. Land area & dock  
purchased from International  
Multi-Foods Co. in 1975.  
New facilities used in 1976.



MISSISSIPPI RIVER TERMINALS

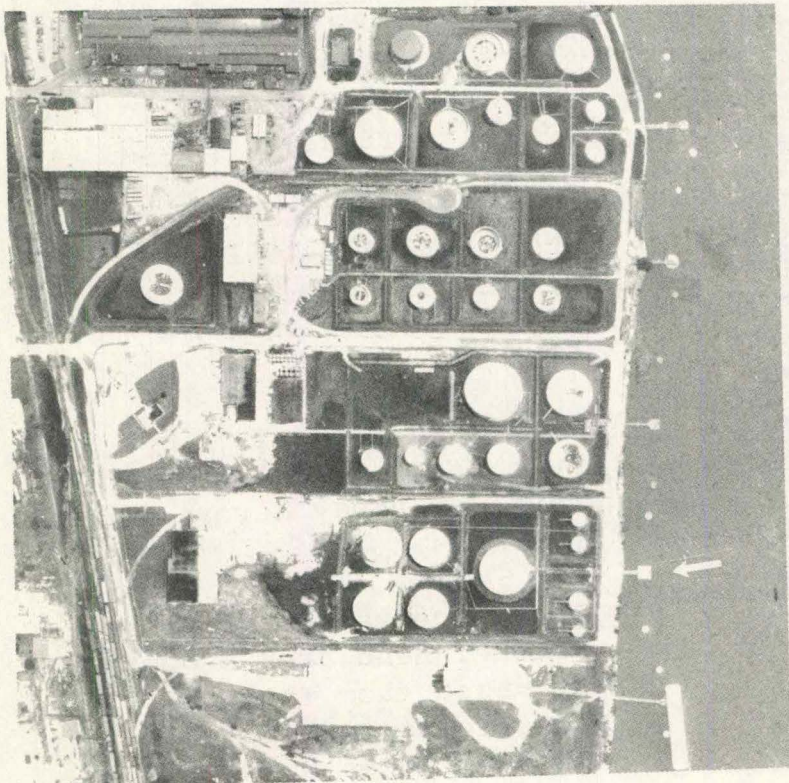


MAP REFERENCE NO.: 35  
MILES ABOVE OHIO RIVER: 486.8  
NAME: Universal Atlas Cement

ADDRESS:  
2871 Depot  
Bettendorf, IA 52722  
PHONE: (319)359-8237  
COMMODITIES HANDLED:  
Cement

ACCESS: Truck & Rail  
South of US 67 via good,  
level, blacktop roads.

NOTES: Receives cement.



MAP REFERENCE NO.: 36  
MILES ABOVE OHIO RIVER: 487.0  
NAME: Mobil Oil Company

ADDRESS:  
2925 Gilbert Street  
Bettendorf, IA 52722  
PHONE: (319)355-0255  
COMMODITIES HANDLED:  
Gasoline & fuel oil.

ACCESS: Truck  
South of US 67 via good,  
level, blacktop roads.

NOTES: Receives petroleum  
products for transfer &  
storage.

MISSISSIPPI RIVER TERMINALS

MAP REFERENCE NO.: 37  
MILES ABOVE OHIO RIVER: 487.0  
NAME: Shell Oil Company

ADDRESS:

Marine Terminal  
Bettendorf, IA 52722  
PHONE: (319)355-1835

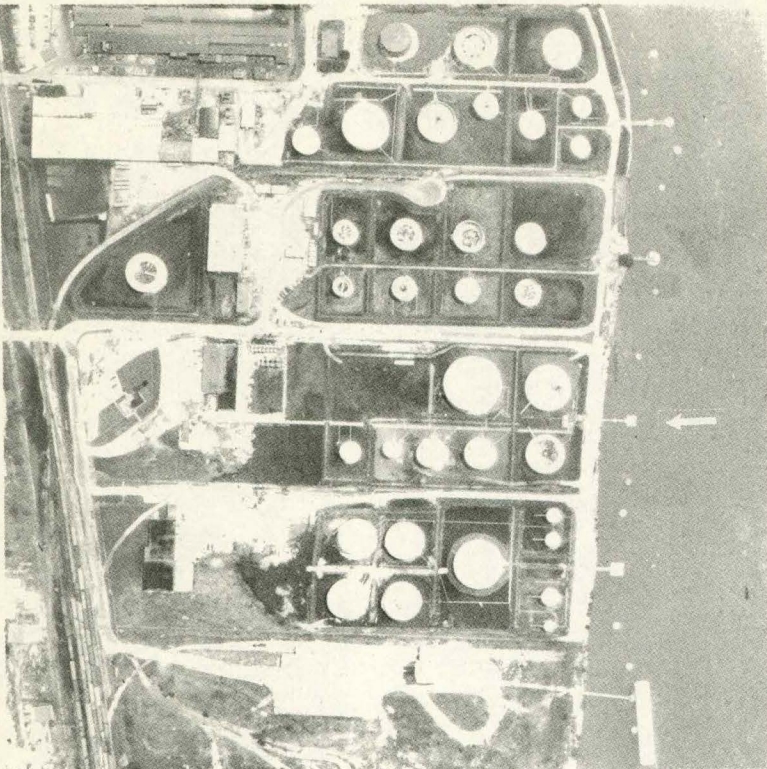
COMMODITIES HANDLED:

Gasoline, furnace oil,  
jet fuel.

ACCESS: Truck

South of US 67 via good, flat,  
blacktop roads.

NOTES: Receives petroleum  
products for transfer &  
storage.



MAP REFERENCE NO.: 38  
MILES ABOVE OHIO RIVER: 487.1  
NAME: AMOCO Oil Company

ADDRESS:

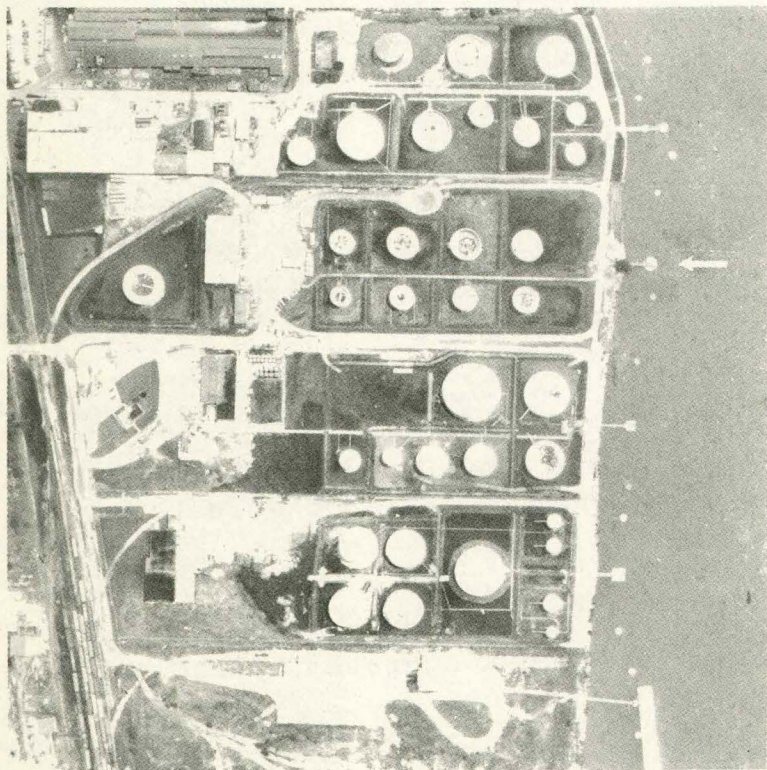
S. 31st Street  
Bettendorf, IA 52722  
PHONE: (319)355-2686  
COMMODITIES HANDLED:

Petroleum products.

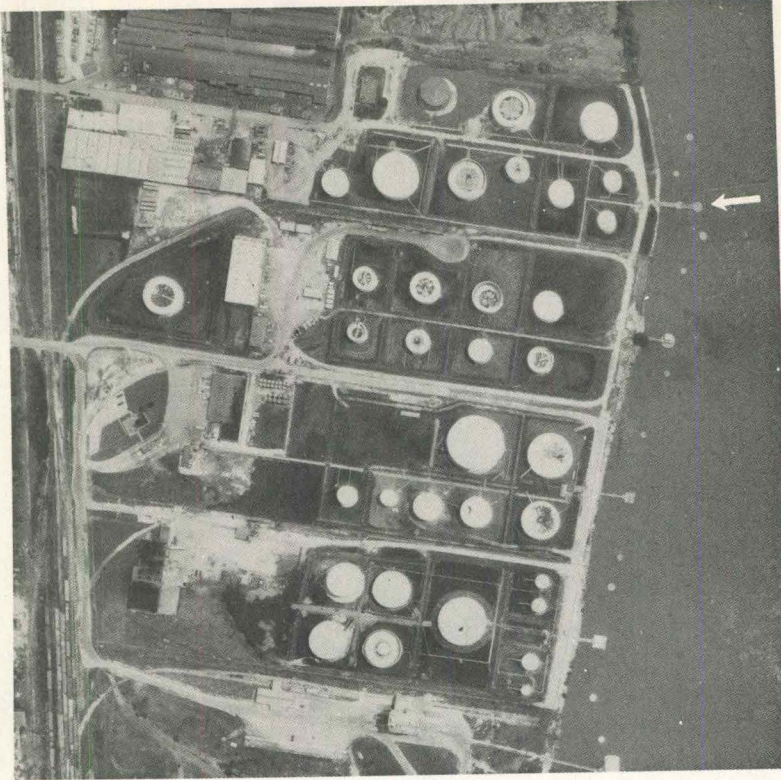
ACCESS: Truck

South of US 67 via good,  
flat, balcktop roads.

NOTES: Receives petroleum  
products for transfer &  
storage.



MISSISSIPPI RIVER TERMINALS



MAP REFERENCE NO.: 39  
MILES ABOVE OHIO RIVER: 487.2  
NAME: Phillips Petroleum Co.  
(Phillips 66)  
ADDRESS:  
Box M  
Bettendorf, IA 52722  
PHONE: (319) 355-2654  
COMMODITIES HANDLED:  
Petroleum products.

ACCESS: Truck  
South of US 67 via good,  
blacktop street.

NOTES: Receives petroleum  
products for transfer &  
storage.



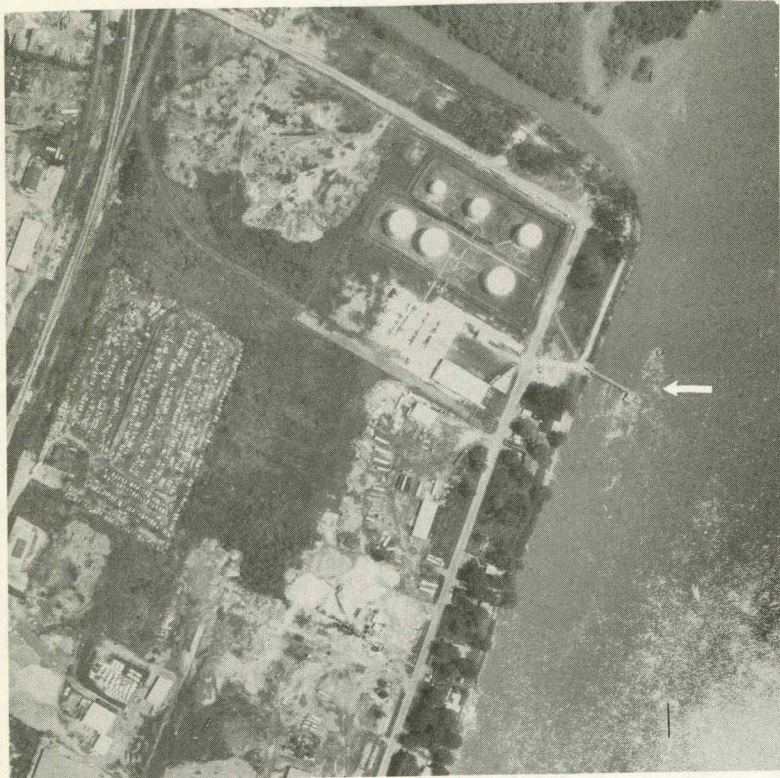
MAP REFERENCE NO.: 40  
MILES ABOVE OHIO RIVER: 487.5  
NAME: Bettendorf Terminal Co.

ADDRESS:  
3623 Elm Street  
Bettendorf, IA 52722  
PHONE: (319) 355-6223  
COMMODITIES HANDLED:  
Sand

ACCESS: Truck  
South of US 67 via 0.4 mi.  
of hard-surfaced streets.

NOTES: Receives sand.  
Owned & operated by LeClaire  
Quarries.

MISSISSIPPI RIVER TERMINALS



MAP REFERENCE NO.: 41  
MILES ABOVE OHIO RIVER: 487.7  
NAME: The Texaco Company

ADDRESS:

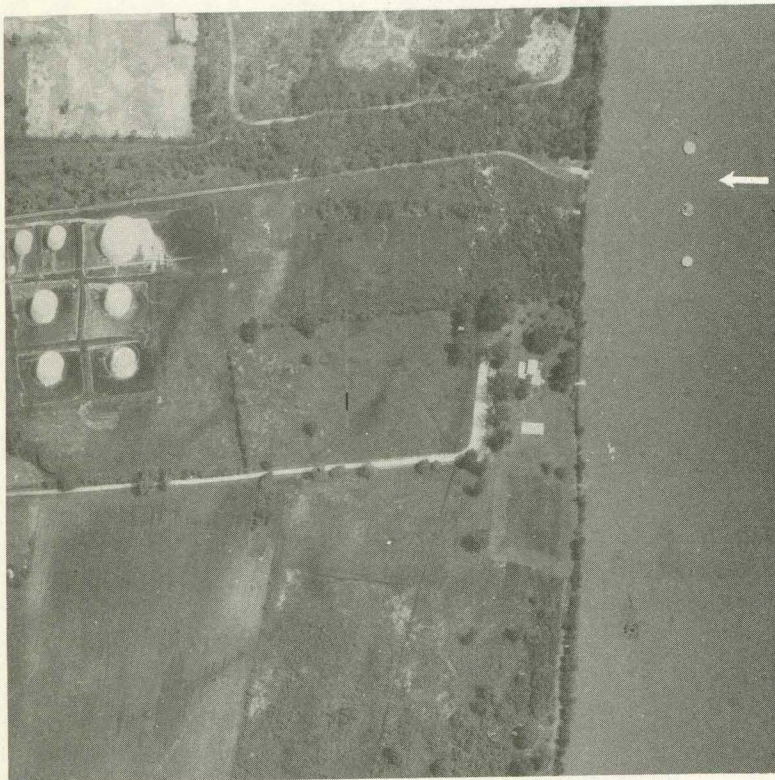
Mississippi Point  
Bettendorf, IA 52722  
PHONE: (319)355-0271  
COMMODITIES HANDLED:

Gasoline

ACCESS: Truck

South of US 67 via 0.8 mile  
of good paved streets.

NOTES: Receives petroleum  
products.



MAP REFERENCE NO.: 42  
MILES ABOVE OHIO RIVER: 488.5  
NAME: Union Oil Company  
(W.H. Barber Co.)

ADDRESS:

S. Bellingham Street  
Bettendorf, IA 52722  
PHONE: (319) 355-2931  
COMMODITIES HANDLED:

Petroleum products.

ACCESS: Truck

SE of US 67 about 0.5 mile  
via good city streets.

NOTES: Received all petroleum  
by pipeline in recent years  
& does not use barge facility.

MISSISSIPPI RIVER TERMINALS



MAP REFERENCE NO.: 43  
MILES ABOVE OHIO RIVER: 498.2  
NAME: LeClaire Quarries, Inc.

ADDRESS:

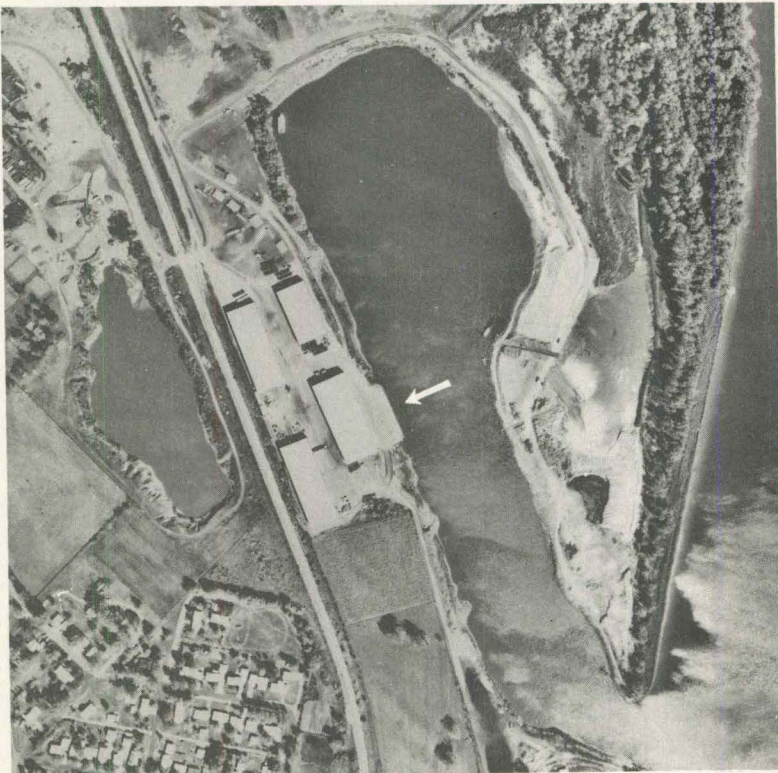
P.O. Box 206  
LeClaire, IA 52753  
PHONE: (319)289-4214  
COMMODITIES HANDLED:

Sand & rock.

ACCESS: Truck

East of US 67 on good  
driveway across rough RR  
tracks.

NOTES: Ships & receives  
sand & rock.



MAP REFERENCE NO.: 44  
MILES ABOVE OHIO RIVER: 512.2  
NAME: Determann Industries,  
Inc.

ADDRESS:

1425 N. Washington  
Camanche, IA 52730  
PHONE: (319)259-8311  
COMMODITIES HANDLED:

Aluminum, machinery,  
fertilizer, urea, & others.

ACCESS: Truck & Rail

East of US 67 via good,  
gravel driveway.

NOTES: Shipping & receiving  
agent.

MISSISSIPPI RIVER TERMINALS

NO PICTURE  
AVAILABLE

MAP REFERENCE NO.: 45  
MILES ABOVE OHIO RIVER: 513.5  
NAME: W.G. Block Co.  
(Acme Aggregates)  
ADDRESS: (Terminal-Camanche, IA)  
Office-317 E. 4th  
Davenport, IA 52801  
PHONE: (319)326-1651  
COMMODITIES HANDLED:  
Sand, gravel, & crushed  
rock & stone.

ACCESS: Truck  
East of US 67 via 3/4 mile,  
gravel road.

NOTES: New facility being  
developed.

MAP REFERENCE NO.: 46  
MILES ABOVE OHIO RIVER: 513.9  
NAME: E.I. DuPont DeNemours,  
Inc.  
ADDRESS:  
P.O. Box 451  
Clinton, IA 52732  
PHONE: (319)242-4421  
COMMODITIES HANDLED:  
Caustic soda

ACCESS: Rail  
East of US 67 via good, paved  
driveway.

NOTES: Receives caustic soda  
for use in manufacturing  
cellophane and film materials.



MISSISSIPPI RIVER TERMINALS



MAP REFERENCE NO.: 47  
MILES ABOVE OHIO RIVER: 514.2  
NAME: Interstate Power Co.

ADDRESS: M.L. Kapp Station  
2001 Beaver Channel Pkwy.  
Clinton, IA 52732  
PHONE: (319)243-2611  
COMMODITIES HANDLED:  
Coal

ACCESS: Rail  
South of US 30 via very  
rough, gravel street.

NOTES: Receives coal.  
All coal used for producing  
electricity.



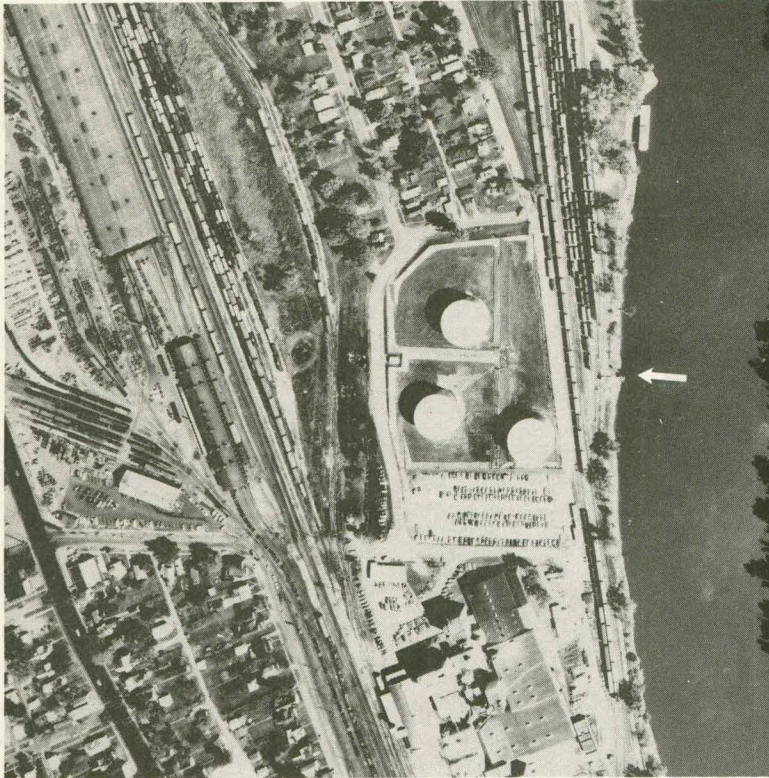
MAP REFERENCE NO.: 48  
MILES ABOVE OHIO RIVER: 517.2  
NAME: Peavy Company

ADDRESS:  
1811 S. 4th Street  
Clinton, IA 52732  
PHONE: (319)242-5251  
COMMODITIES HANDLED:  
Corn & soybeans.

ACCESS: Truck  
South of US 30 via 6 blocks  
of good, paved streets.

NOTES: Ships grain.  
The facilities were purchased  
from Fronings, Inc. in 1975.

MISSISSIPPI RIVER TERMINALS



MAP REFERENCE NO.: 49  
MILES ABOVE OHIO RIVER: 517.5  
NAME: Clinton Corn Processing

ADDRESS:

P.O. Box 340  
Clinton, IA 52732  
PHONE: (319)242-1121  
COMMODITIES HANDLED:

Fuel oil

ACCESS: Truck & Rail  
South of US 30 on good, paved streets.

NOTES: Receives fuel oil for use at the corn processing plant.



MAP REFERENCE NO.: 50  
MILES ABOVE OHIO RIVER: 517.7  
NAME: Lewis & Lawson Harbor

Service  
ADDRESS:

17th Ave. S. & River St.  
Clinton, IA 52732  
PHONE: (319)242-1646  
COMMODITIES HANDLED:

Barge handling services.

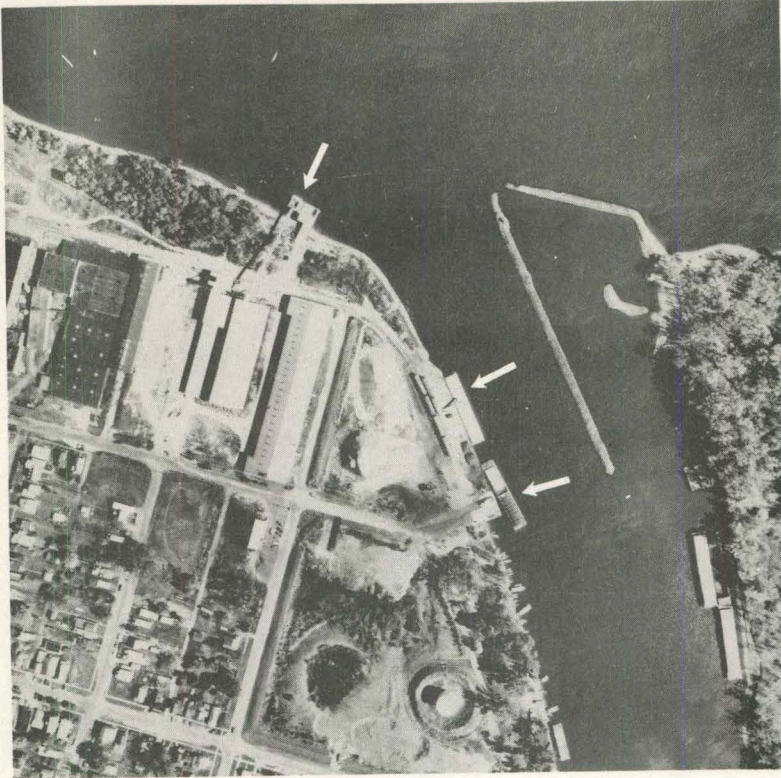
ACCESS:

South of US 30 via 6 blocks of good paved streets & 1 block on gravel street.

NOTES: Groups, moves, cleans, and repairs barges.



MISSISSIPPI RIVER TERMINALS



MAP REFERENCE NO.: 51  
MILES ABOVE OHIO RIVER: 517.5  
NAME: CF Industries, Inc.

(Municipal Dock)

ADDRESS:

204-15th Ave., S.  
Clinton, IA 52732

PHONE: (319)242-0962

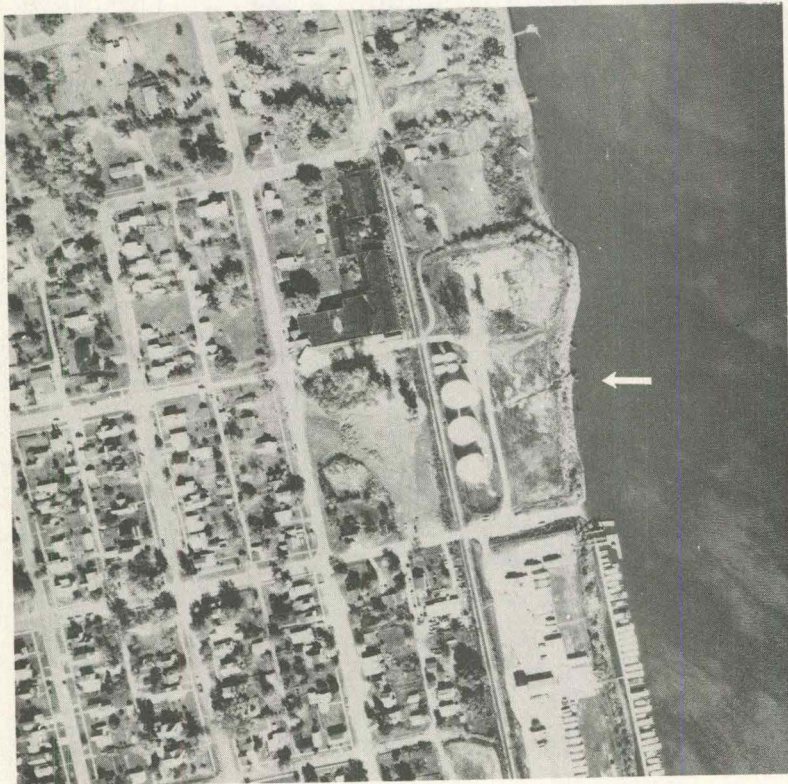
COMMODITIES HANDLED:

Soybean meal, corn feed pellets,  
beet pulp pellets, petroleum by-  
products, fertilizer & salt.

ACCESS: Truck & Rail

South of US 30 via 7 blocks  
of good, paved streets.

NOTES: Shipping & receiving  
agent for all classes of  
commodities. The dock facilities  
are leased from the City of  
Clinton.



MAP REFERENCE NO.: 52

MILES ABOVE OHIO RIVER: 521.0

NAME: CF Industries, Inc.

(Carnes Oil Co.)

ADDRESS:

31st Ave., N. & River St.  
Clinton, IA 52732

PHONE: (319)242-0433

COMMODITIES HANDLED:

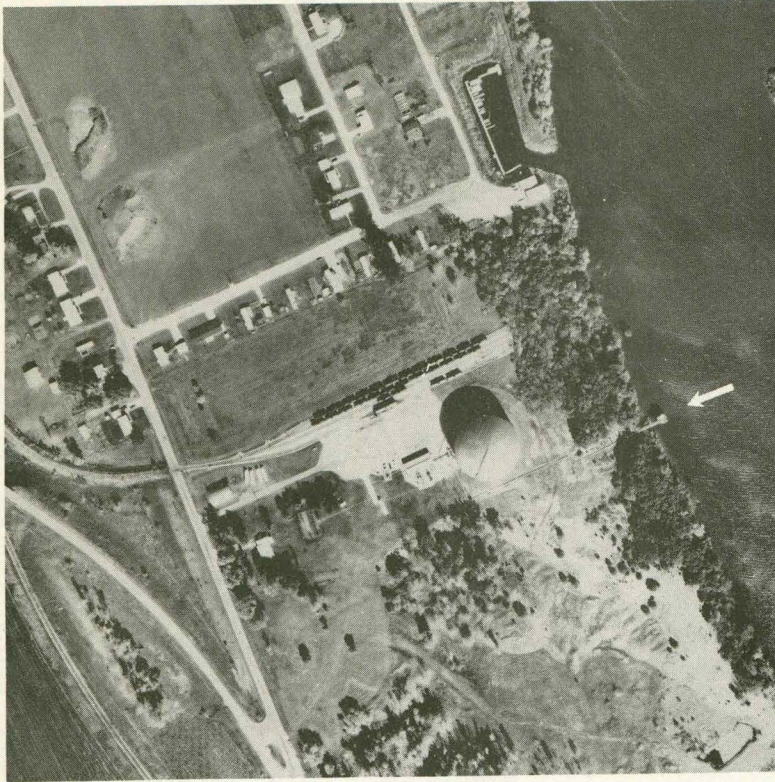
Nitrogen

ACCESS: Truck & Rail

East of US 67 about 6 blocks  
via good streets (paved &  
gravel).

NOTES: Receives nitrogen.

MISSISSIPPI RIVER TERMINALS

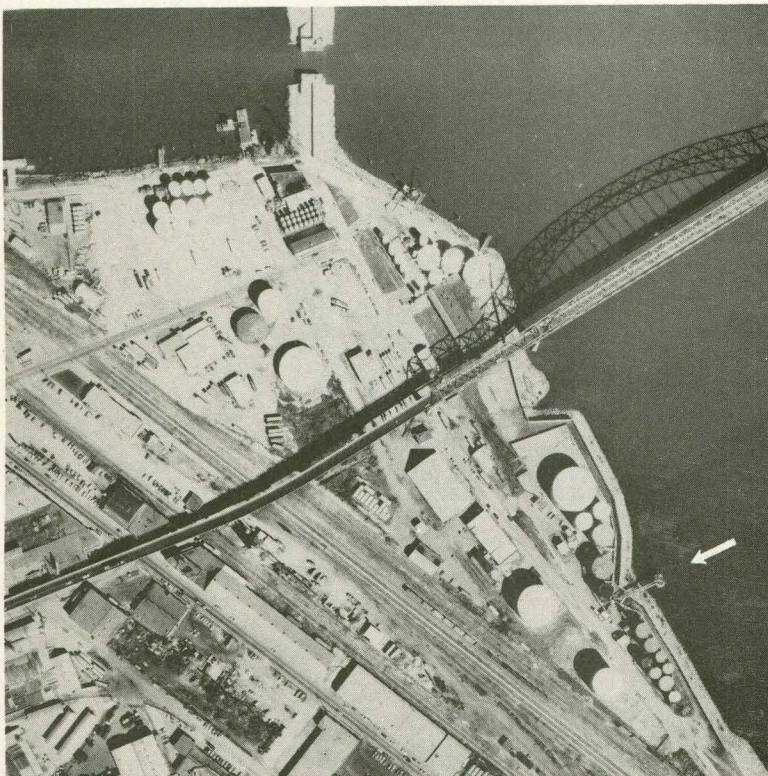


MAP REFERENCE NO.: 54  
MILES ABOVE OHIO RIVER: 559.0  
NAME: USS Agri-Chemicals Co.

ADDRESS:  
R.F.D. 2  
Bellevue, IA 52031  
PHONE: (319)872-3218  
COMMODITIES HANDLED:  
Anhydrous ammonia.

ACCESS: Truck & Rail  
East of US 52 & 67 via  $\frac{1}{4}$   
mile of good, asphalt road.

NOTES: Receives anhydrous  
ammonia.



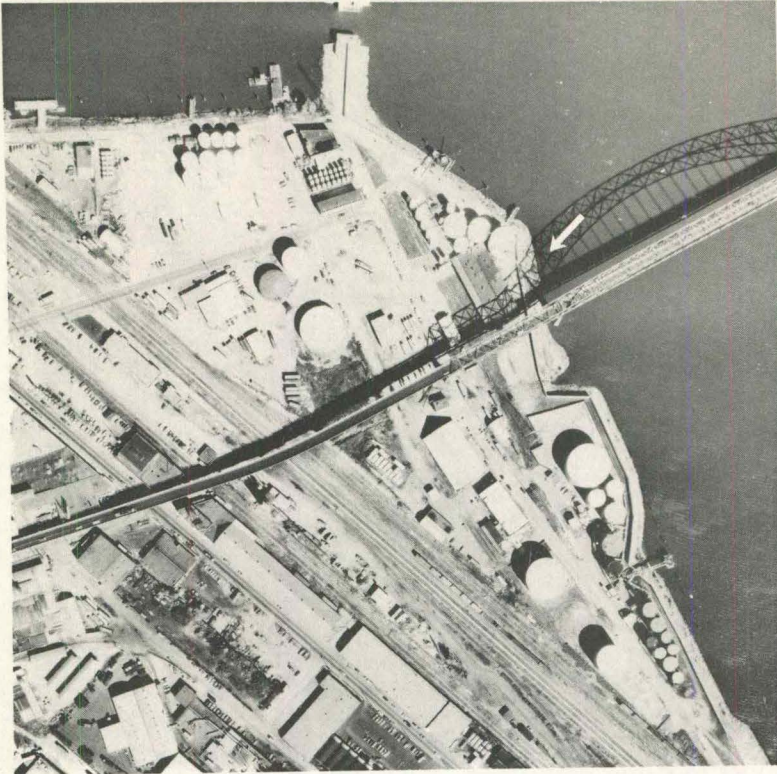
MAP REFERENCE NO.: 55  
MILES ABOVE OHIO RIVER: 579.2  
NAME: Sinclair Marketing, Inc.

ADDRESS:  
200 Terminal St.  
Dubuque, IA 52001  
PHONE: (319)583-9718  
COMMODITIES HANDLED:  
Asphalt, gas, & fuel oil.

ACCESS: Truck  
East of US 52 via about 6  
blocks of good, paved streets.

NOTES: Receives petroleum  
products.

MISSISSIPPI RIVER TERMINALS



MAP REFERENCE NO.: 56  
MILES ABOVE OHIO RIVER: 579.3  
NAME: Dubuque Twine Company

ADDRESS:

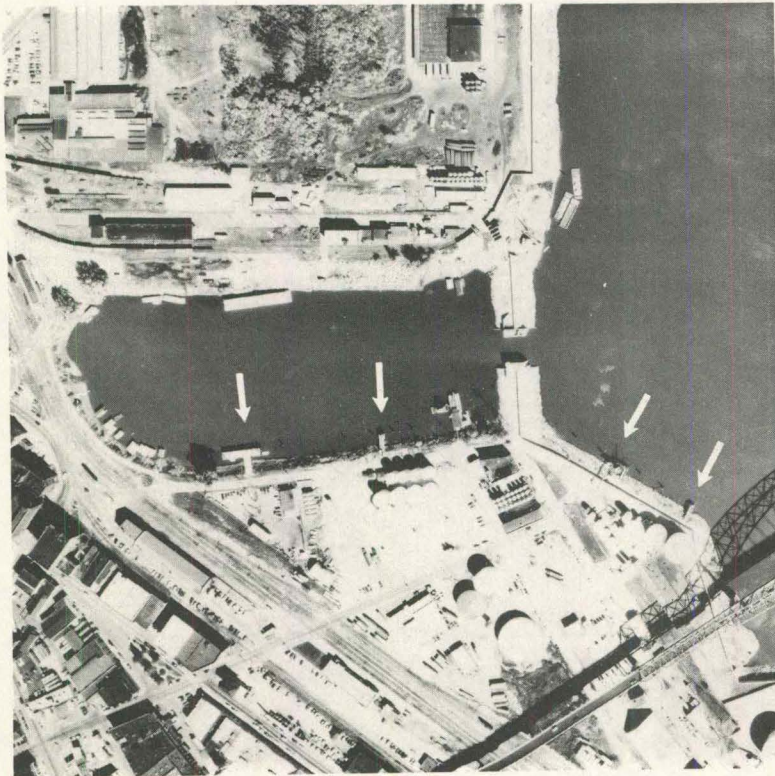
Jones & Terminal St.  
Dubuque, IA 52001  
PHONE: (319)583-9701  
COMMODITIES HANDLED:  
Baler twine

ACCESS: Truck & Rail

East of US 52 via about 5  
blocks of good, paved streets.

NOTES: Receives twine.

Dock and storage area owned  
by the City of Dubuque.



MAP REFERENCE NO.: 57  
MILES ABOVE OHIO RIVER: 579.4  
NAME: Dubuque Tank Terminal Co.

ADDRESS:

Jones & Terminal St.  
Dubuque, IA 52001  
PHONE: (319)583-6457  
COMMODITIES HANDLED:  
Lard, grease, tallow,  
fertilizer, molasses, &  
salt.

ACCESS: Truck & Rail

East of US 52 via about 4  
blocks of good, paved streets.

NOTES: Ships & receives a  
variety of commodities.

MISSISSIPPI RIVER TERMINALS

MAP REFERENCE NO.: 58  
MILES ABOVE OHIO RIVER: 579.5  
NAME: Molo Sand & Gravel Co.

ADDRESS: (Plant: end of 3rd St.)

Office: 41 Main St.  
Dubuque, IA 52001

PHONE: (319)582-3611

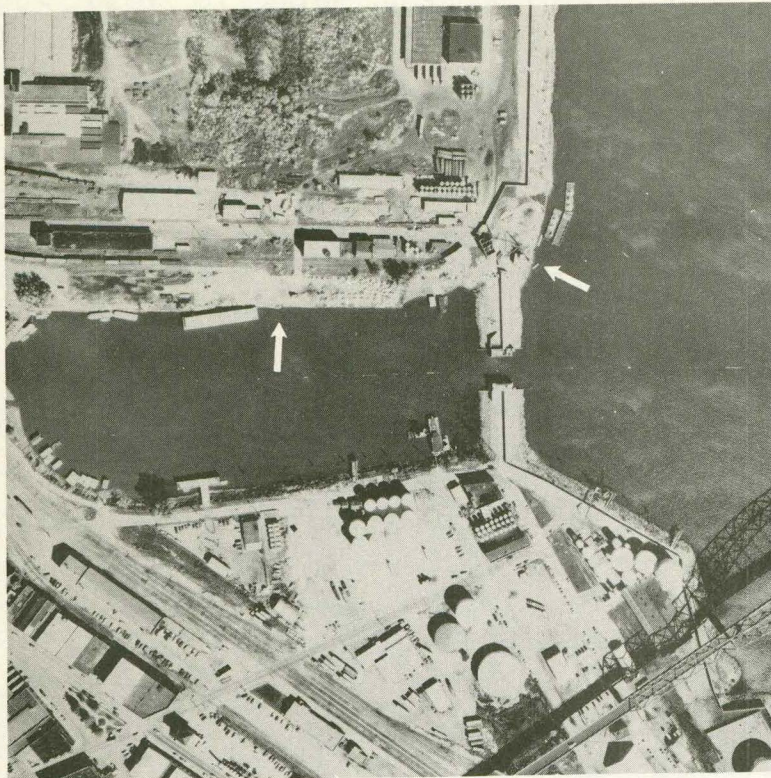
COMMODITIES HANDLED:

Sand & gravel.

ACCESS: Truck

East of US 52 via about 4  
blocks of bumpy brick streets  
& across 9 RR tracks.

NOTES: Receives sand & gravel  
which is dredged from the  
Mississippi River.



MAP REFERENCE NO.: 59  
MILES ABOVE OHIO RIVER: 580.0  
NAME: Pillsbury Company

ADDRESS:

E. 7th & Commercial St.  
Dubuque, IA 52001

PHONE: (319)556-4245

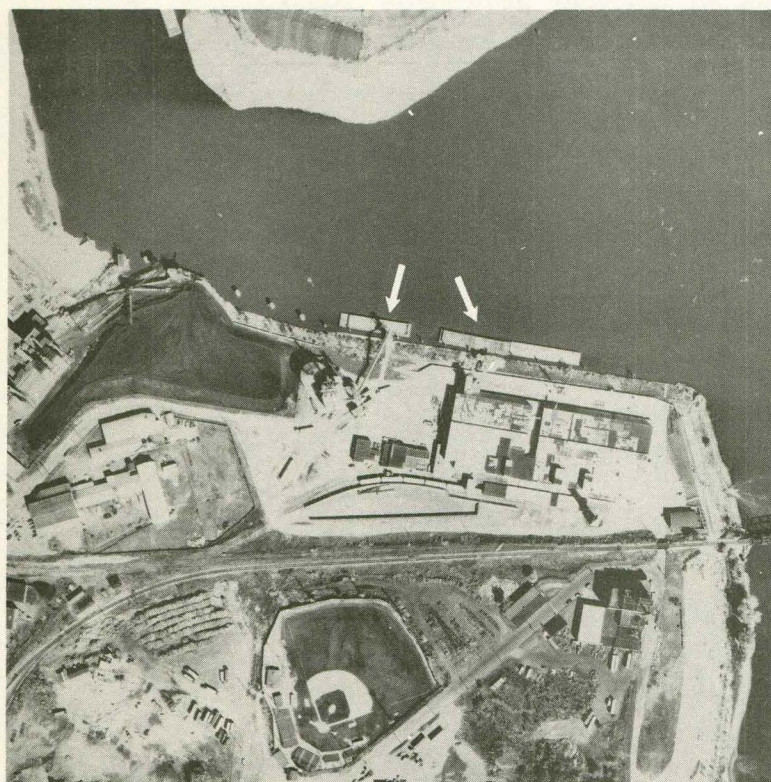
COMMODITIES HANDLED:

Corn, soybeans, & fertilizer.

ACCESS: Truck & Rail

East of US 52 via 6 blocks  
of good, paved streets & 6  
blocks of rough gravel &  
brick streets.

NOTES: Ships & receives  
commodities.



MISSISSIPPI RIVER TERMINALS



MAP REFERENCE NO.: 60  
MILES ABOVE OHIO RIVER: 580.0  
NAME: Interstate Power Co.

ADDRESS:

1000 Main St.  
Dubuque, IA 52001

PHONE: (319)582-5421

COMMODITIES HANDLED:

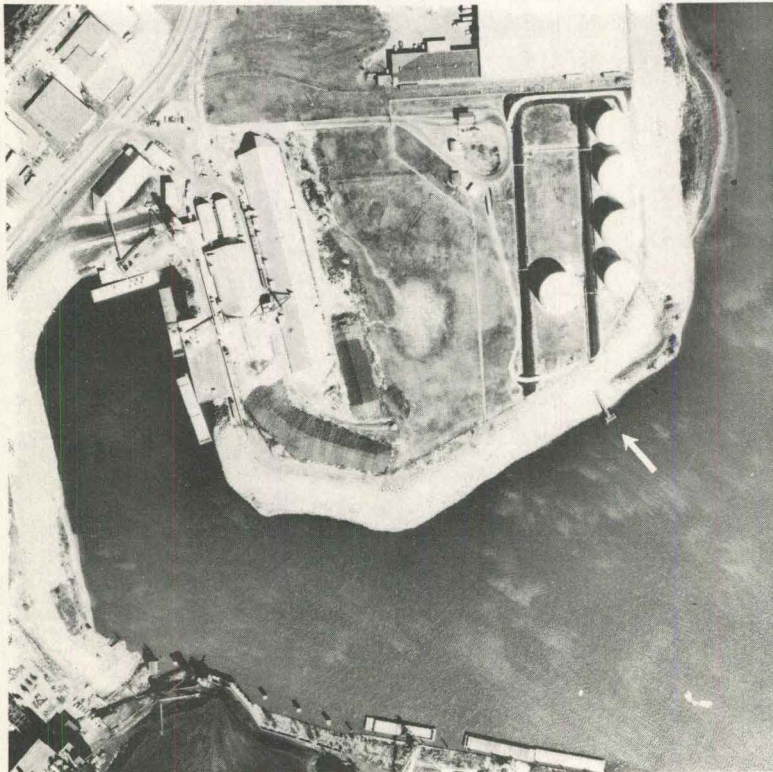
Coal

ACCESS: Rail (not used)

East of US 52 via about 6  
blocks of good paved streets.

NOTES: Receives coal.

All coal used for producing  
electricity.



MAP REFERENCE NO.: 61  
MILES ABOVE OHIO RIVER: 580.1  
NAME: Dubuque Oil Company

ADDRESS: (12th St. Extension)

Box 921  
Dubuque, IA 52001

PHONE: (319)582-8883

COMMODITIES HANDLED:

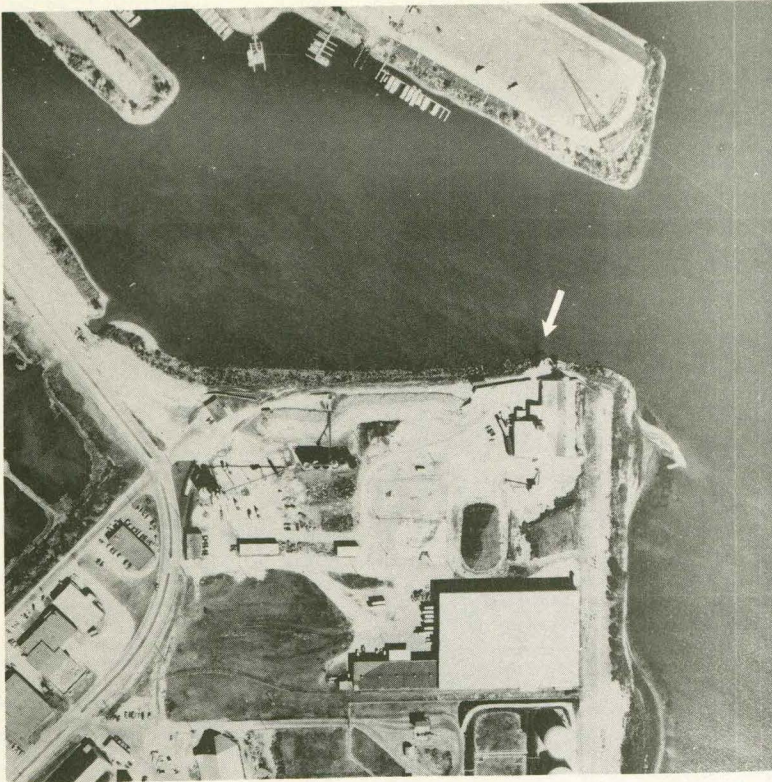
Gasoline & fuel oil.

ACCESS: Truck

East of US 52 via good,  
paved streets.

NOTES: Receives petroleum  
products. Owned by Koch  
Industries.

MISSISSIPPI RIVER TERMINALS

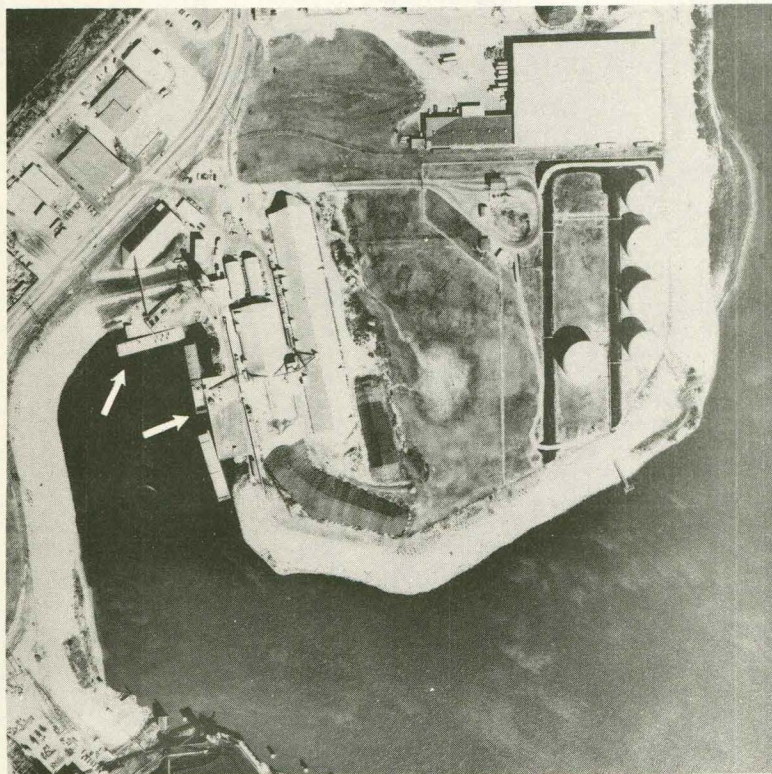


MAP REFERENCE NO.: 62  
MILES ABOVE OHIO RIVER: 580.3  
NAME: Dubuque Tank Terminal Co.

ADDRESS: (Office)  
Jones & Terminal St.  
Dubuque, IA 52001  
PHONE: (319)583-6457  
COMMODITIES HANDLED:  
Salt & dry fertilizer.

ACCESS: Truck & Rail  
East of US 52 via good,  
paved streets.

NOTES: Receives general  
commodities.



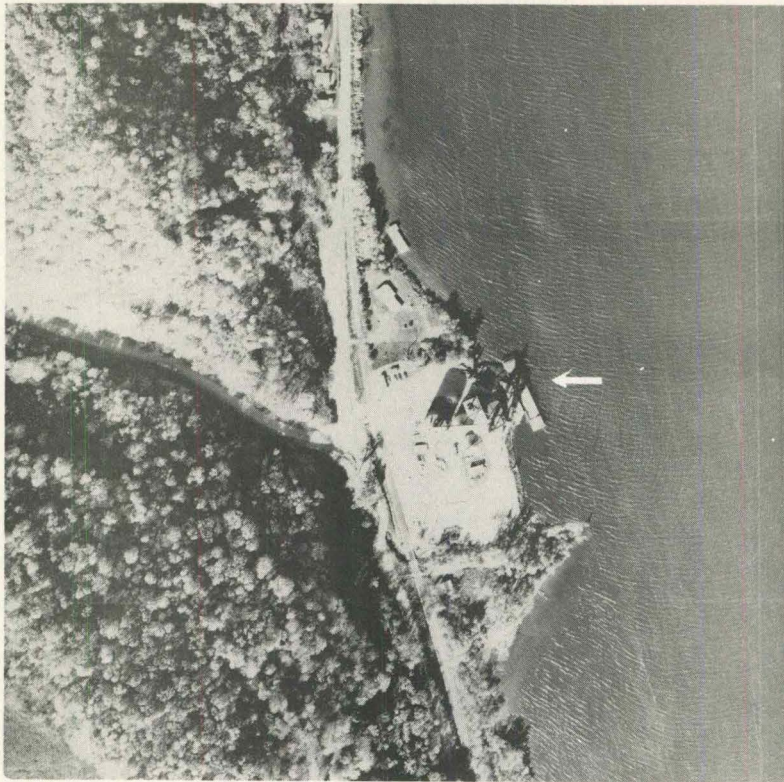
MAP REFERENCE NO.: 63  
MILES ABOVE OHIO RIVER: 580.3  
NAME: ContiCarriers &  
Terminals, Inc.

ADDRESS:  
1050 Kerper Blvd.  
Dubuque, IA 52001  
PHONE: (319)556-4532  
COMMODITIES HANDLED:  
Corn, soybeans, salt,  
fertilizer, coal, steel, &  
pig iron.

ACCESS: Truck & Rail  
East of US 52 via good, paved  
streets.

NOTES: Ships & receives  
bulk commodities.

MISSISSIPPI RIVER TERMINALS



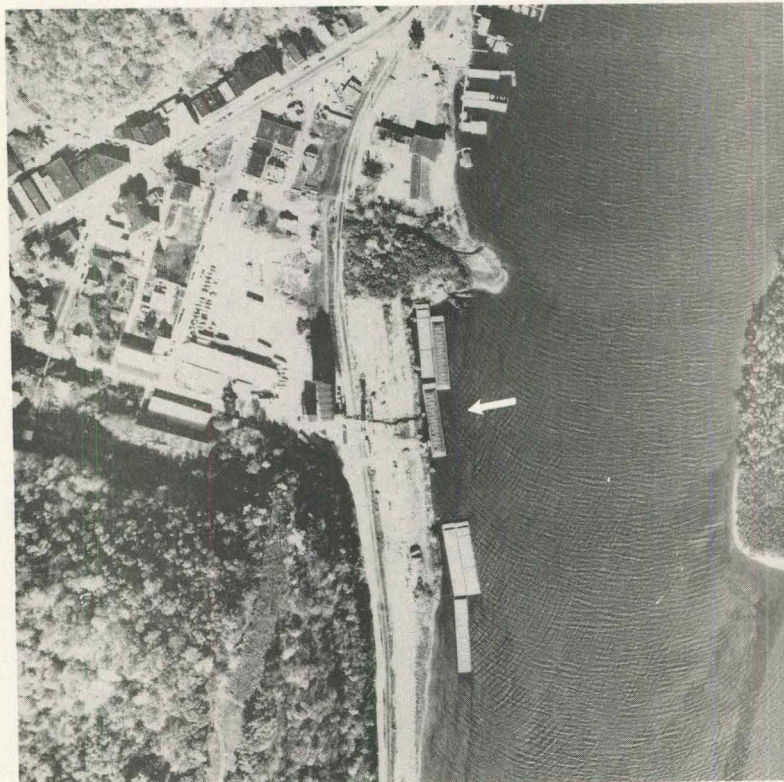
MAP REFERENCE NO.: 65  
MILES ABOVE OHIO RIVER: 624.0  
NAME: Pattison Grain Terminal

ADDRESS:  
Clayton, IA 52049

PHONE: (319)964-2133  
COMMODITIES HANDLED:  
corn & soybeans.

ACCESS: Truck  
East of paved county road  
(x-56) via a steep, winding,  
gravel road for 1 mile.

NOTES: Ships grain.



MAP REFERENCE NO.: 66  
MILES ABOVE OHIO RIVER: 633.3  
NAME: Farmers Grain Dealers  
Association

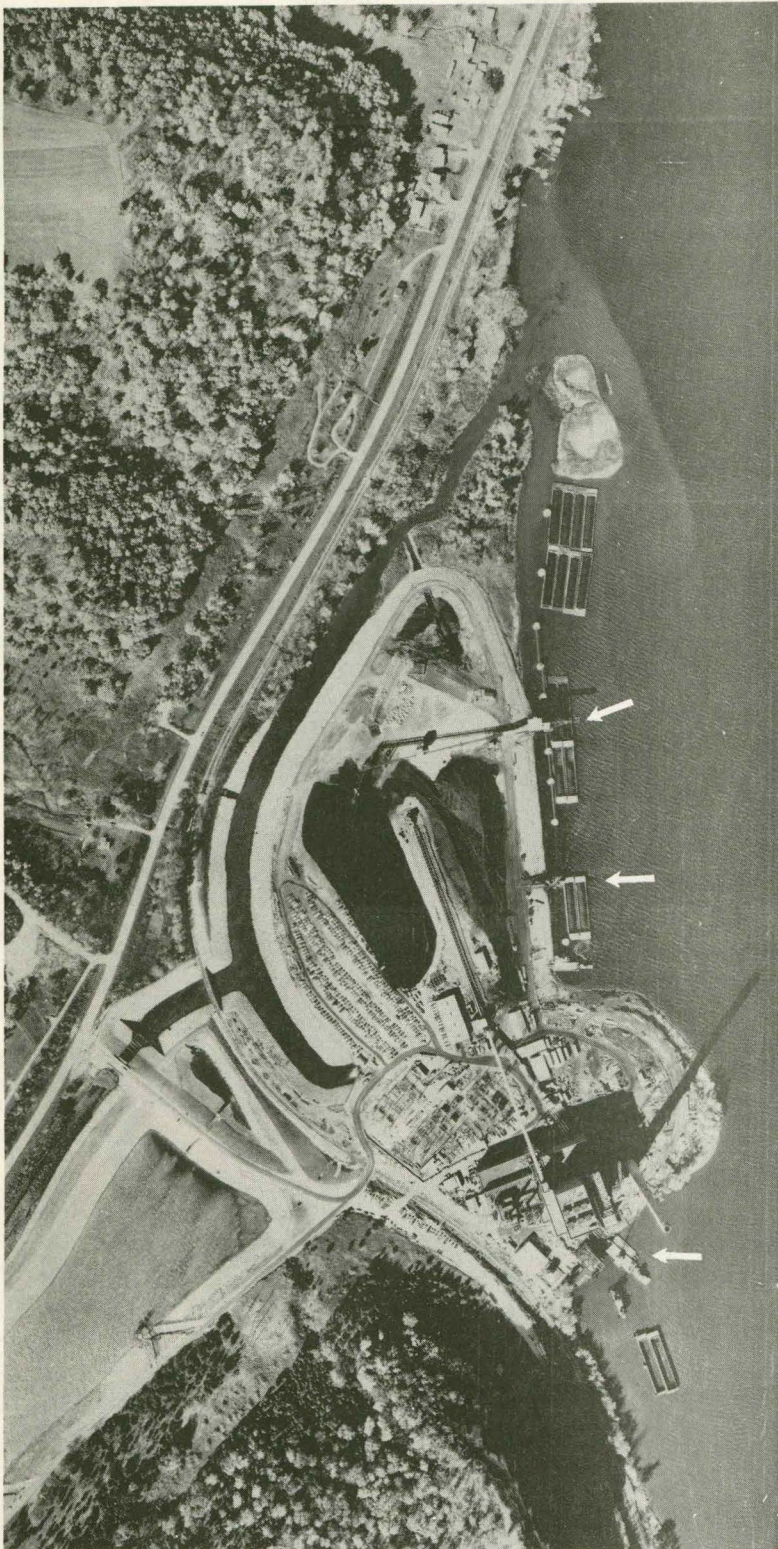
ADDRESS:  
McGregor, IA 52157

PHONE: (319)873-3436  
COMMODITIES HANDLED:  
Corn & soybeans.

ACCESS: Truck & Rail  
East of US 18 via 2 blocks  
of good, paved streets.

NOTES: Ships grain.

MISSISSIPPI RIVER TERMINALS



MAP REFERENCE NO.: 67  
MILES ABOVE OHIO RIVER: 660.0  
NAME: Interstate Power Co.

ADDRESS:

Lansing Power Plant  
Lansing, IA 52151  
PHONE: (319)533-4717  
COMMODITIES HANDLED:

Coal

ACCESS:

East of paved county road  
(X-52) via a good, gravel  
road for 0.7 mile.

NOTES: Receives coal.

All coal used in producing  
electricity.



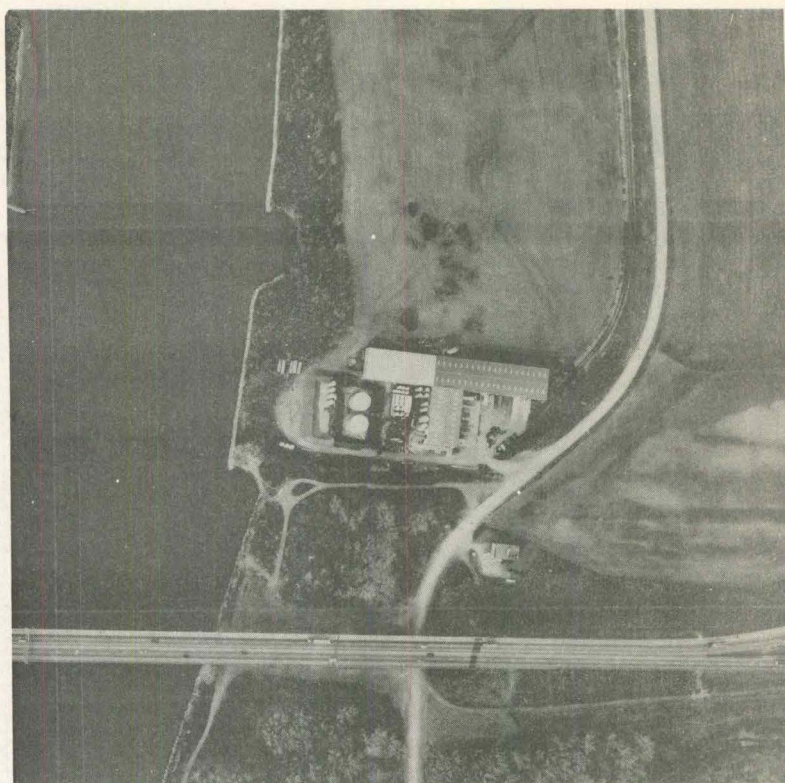
MISSOURI RIVER TERMINALS

MAP REFERENCE NO.: 70  
MILES ABOVE MO. RIVER MOUTH: 614.1  
NAME: Terminal Packaging Corp.

ADDRESS:  
2850 River Road  
Council Bluffs, IA 51501  
PHONE: (712)323-9802  
COMMODITIES HANDLED:  
Antifreeze

ACCESS: Truck  
West of I-29 via 1 mile of good  
roads - paved & gravel.

NOTES: Receives antifreeze.  
Rarely uses barges.

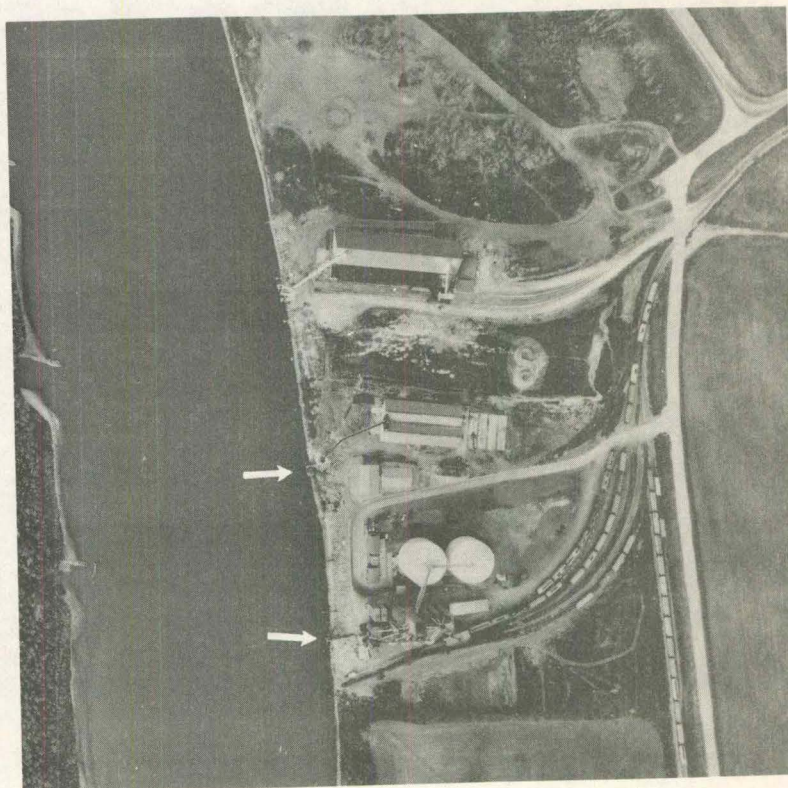


MAP REFERENCE NO.: 71  
MILES ABOVE MO. RIVER MOUTH: 614.4  
NAME: Cargill, Inc.

ADDRESS:  
2401 S. 37th St.  
Council Bluffs, IA 51501  
PHONE: (712)323-9481  
COMMODITIES HANDLED:  
Corn, wheat, & fertilizer.

ACCESS: Truck & Rail  
West of I-29 via ½ mile of  
good roads - paved & gravel.

NOTES: Ships grain & receives  
fertilizer.



MISSOURI RIVER TERMINALS

MAP REFERENCE NO.: 72  
MILES ABOVE MO. RIVER MOUTH:614.45  
NAME: Farmland Industries

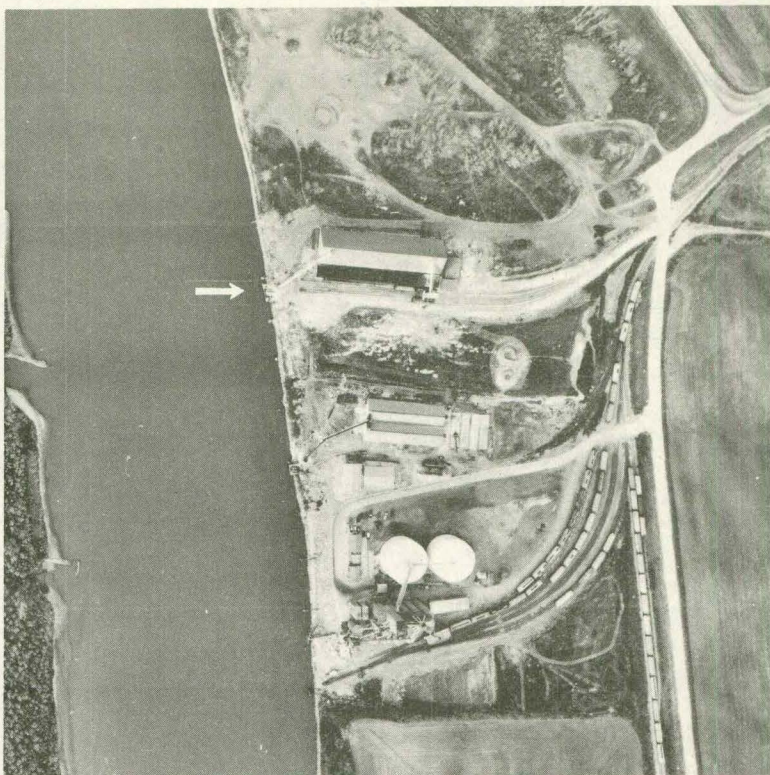
ADDRESS:

2301 S. 37th St.  
Council Bluffs, IA 51501  
PHONE: (712)322-8287  
COMMODITIES HANDLED:  
Dry fertilizer.

ACCESS: Truck & Rail

West of I-29 via ½ mile of  
good roads - paved & gravel.

NOTES: Receives bulk fertilizer.



MAP REFERENCE NO.: 73  
MILES ABOVE MO. RIVER MOUTH:680.6  
NAME: Pilus Transfer Point

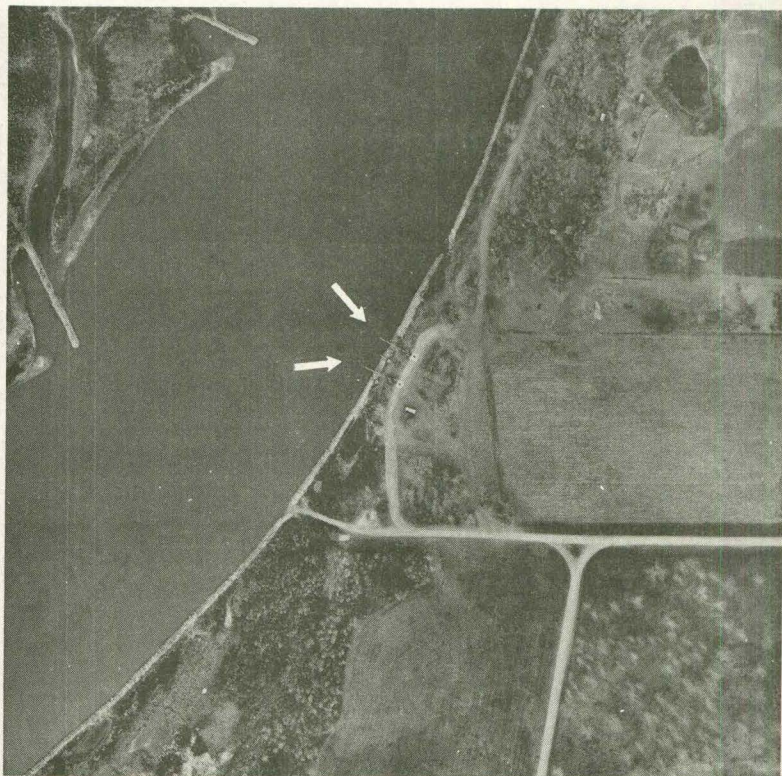
ADDRESS:

Rural Delivery  
Blencoe, IA 51523  
PHONE: (712)452-2749  
COMMODITIES HANDLED:  
Corn & soybeans.

ACCESS: Truck

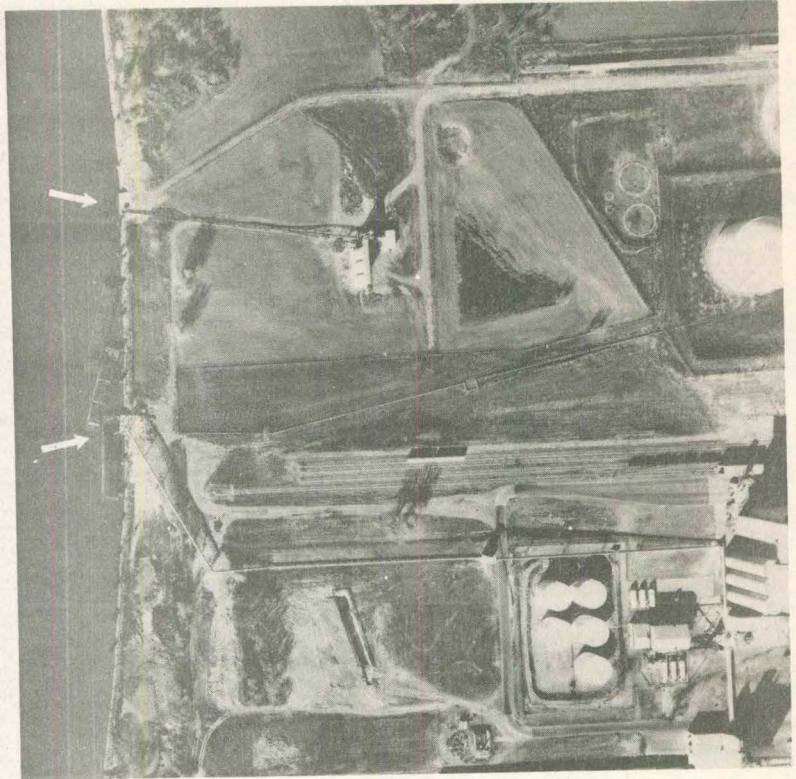
West of I-29 via about 3 miles  
of good county roads - paved &  
gravel.

NOTES: Ships grain.



MISSOURI RIVER TERMINALS

MAP REFERENCE NO.: 74  
MILES ABOVE MO. RIVER MOUTH: 716.6  
NAME: Farmland Soy Processing Co.  
(Farmland Industries, Inc.)  
ADDRESS: Port Neal Ind. Area  
P.O. Box 200  
Sergeant Bluff, IA 51054  
PHONE: (712)943-4282  
COMMODITIES HANDLED:  
Soybean meal & soybean oil.

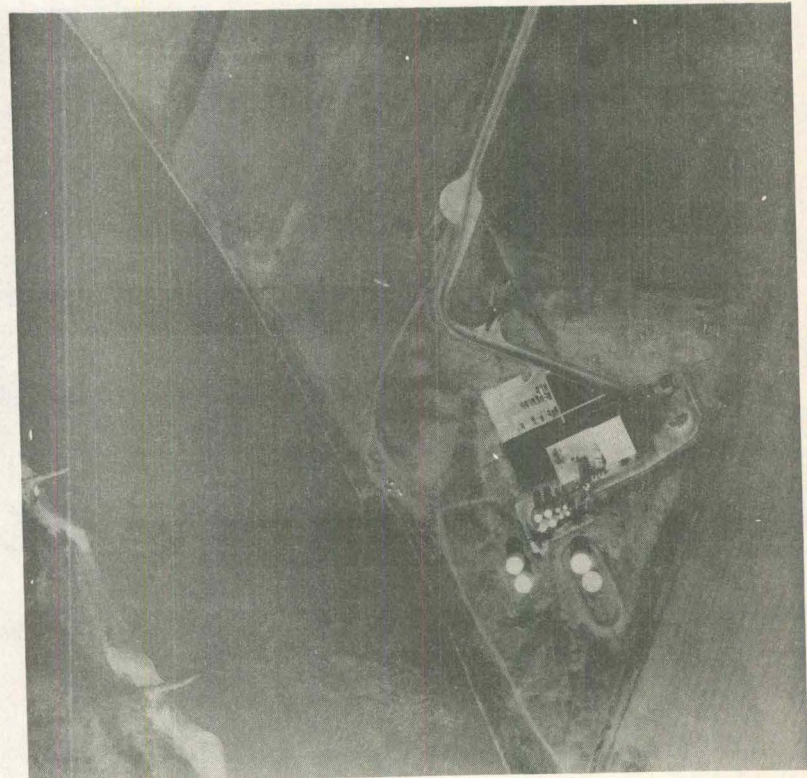


ACCESS: Truck & Rail  
West of I-29 via 3 miles of good paved roads.

NOTES: Ships soybean products produced at the terminal.

MAP REFERENCE NO.: 76A  
MILES ABOVE MO. RIVER MOUTH: 727.0  
NAME: Flavorland By-Products

ADDRESS:  
1900 Murray  
Sioux City, IA  
PHONE: (712)258-7524  
COMMODITIES HANDLED:  
Tallow



ACCESS:  
West of I-29 via 1.6 miles of good paved roads.

NOTES: Tallow shipments to start upon completion of new barge facility in 1977.

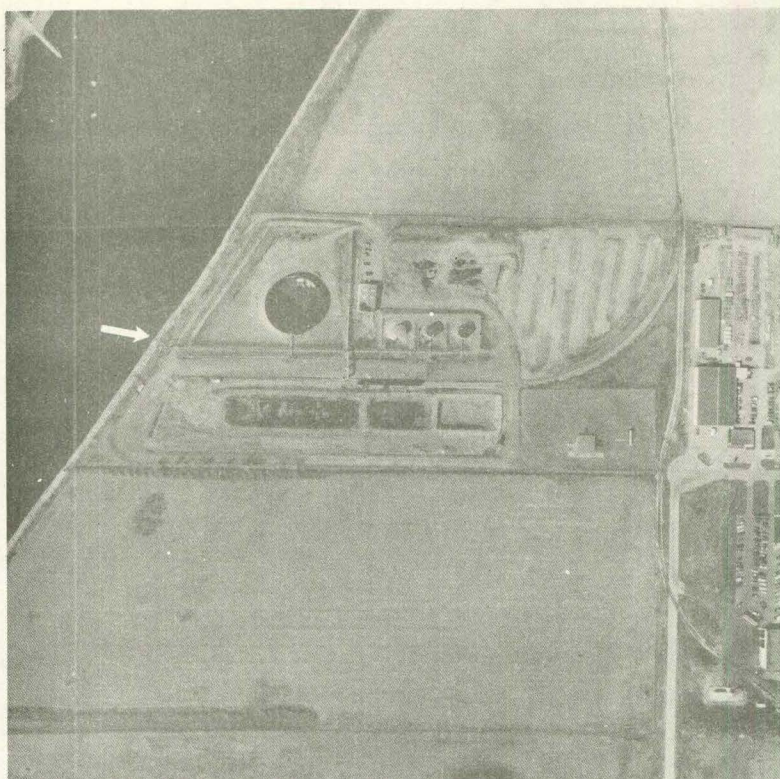
MISSOURI RIVER TERMINALS

MAP REFERENCE NO.: 77  
MILES ABOVE MO. RIVER MOUTH: 727.5  
NAME: Jebro, Inc.

ADDRESS: (2303 Bridgeport)  
P.O. Box 2813  
Sioux City, IA 51111  
PHONE: (712)277-8855  
COMMODITIES HANDLED:  
Asphalt

ACCESS: Truck & Rail  
West of I-29 via 0.8 mile of  
good, paved roads.

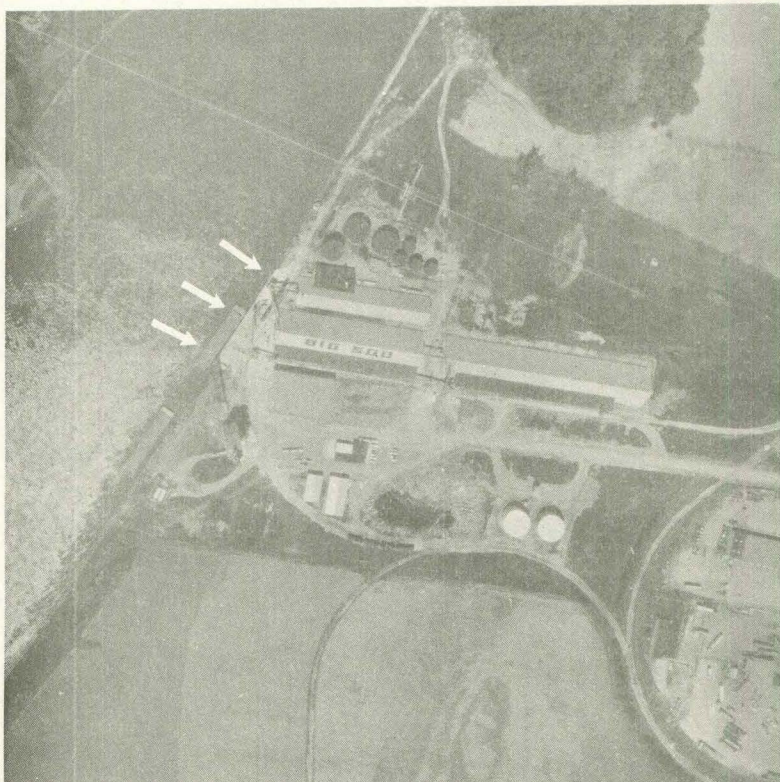
NOTES: Received asphalt before  
1975, but none since then.



MAP REFERENCE NO.: 78  
MILES ABOVE MO. RIVER MOUTH: 727.8  
NAME: Big Soo Terminal

ADDRESS:  
4101 Harbor Drive  
Sioux City, IA 51111  
PHONE: (712)258-0537  
COMMODITIES HANDLED:  
Grain, soybean meal, alfalfa pellets, tallow, salt, molasses, paper, steel, fertilizer & pitch.  
ACCESS: Truck & Rail  
West of I-29 via 0.4 mile of  
good gravel road.

NOTES: Ships & receives general  
commodities. Owned by: Terminal  
Grain Corp., 615 Benson Bldg.,  
Sioux City, IA 51101.



MISSOURI RIVER TERMINALS

MAP REFERENCE NO.: 79

MILES ABOVE MO. RIVER MOUTH: 731.2

NAME: Nutra Flo Chemical Co. &  
Industrial Molasses

ADDRESS:

514 S. Floyd Blvd.  
Sioux City, IA 51101

PHONE: (712)277-2011

COMMODITIES HANDLED:

Tallow & industrial molasses.

ACCESS: Truck & Rail

SW of I-29 via good paved  
streets.

NOTES: Ships & receives  
commodities. Owned by Nutra Flo  
Chemical Co. & dock usage shared  
with Industrial Molasses.



INDEX OF TERMINALS BY COMMODITIES HANDLED

<u>Commodity Handled</u>	<u>Map Reference # of Terminal</u>
Acrylonitrile	15A
Alcohol	21
Aluminum	44
Anhydrous ammonia	6, 8, 54
Antifreeze	70
Asphalt	28, 55, 77
Barge handling services	60
Cement	35
Coal	3, 19, 25, 27, 47, 60, 63, 67
Condensed fish solubles	18
Construction equipment	1
Corn	2, 4, 7, 9, 13, 15, 20, 22, 24, 26, 29, 30, 33, 48, 59, 63, 65, 66, 71, 73
Corn products	30
Corn screenings	29
Diammonium phosphate	6
Fertilizer - dry	14, 16, 44, 51, 59, 62, 63, 71, 72, 78
Fertilizer - liquid	14, 18, 57, 78
Grain	78
Gravel (sand, rock, stone)	17, 31, 32, 34, 40, 43, 45, 58
Grease	57
Lard	57
Lumber - oak logs	29
Machinery	44
Manganese ore	1
Molasses	18, 26, 57, 78, 79
Newsprint - paper	3, 78
Nitrogen	52
Pellets - alfalfa	78
Pellets - beet pulp	51
Pellets - corn gluten	2, 9, 51
Petroleum (fuel oil, road oil, gasoline, furnace oil, by-products, etc.)	6, 12, 27A, 28, 36, 37, 38, 39, 41, 42, 49, 51, 55, 61
Phosphate rock	6
Pig iron	1, 63
Pitch	78
Salt (industrial, road)	3, 26, 29, 51, 57, 62, 63, 78
Scrap (iron, car bodies, misc. steel, ingots)	33

Commodity HandledMap Reference # of Terminal

Soda - caustic	46
Soybean meal	9, 26, 51, 74, 78
Soybean oil	18, 74
Soybeans	4, 7, 9, 13, 15, 20, 22, 24, 26, 29, 30, 33, 48, 59, 63, 65, 66, 73
Steel products	3, 14, 44, 63, 78
Styrene	15A
Tallow	57, 76A, 78, 79
Twine - baler	56
Urea	44
Wheat	4, 7, 15, 29, 71