INDUSTRIAL DEVELOPMENT FOR SOUTHEASTERN NEW MEXICO-- A CASE STUDY

Master's Thesis

by

Richard D. Clark
July, 1969

New Mexico Institute of Mining and Technology
Socorro, New Mexico

ABSTRACT

The historic evolution and present day development of economic elements in southeastern New Mexico were tabulated and discussed. Emphasis was placed on the mineral industry in Chaves, Eddy, and Lea Counties.

The decade of the 1960's began an economic decline in the study area. Carlsbad potash production decreased significantly in value, Walker Air Force Base in Roswell was closed, and the region's agricultural production appeared to be on the decline.

Industrial development is one solution to the serious economic problems of southeastern New Mexico. Computer techniques were used to evaluate possible plant site locations using tabulated data from the study area. A hypothetical industrial complex was synthesized, and the feasibility of a 2,000 ton per day chemical fertilizer plant site in Roswell, Artesia, Carlsbad or Hobbs was determined. All four sites were excellent locations on the basis of the parameters utilized.

With the mineral resources available in the area, the results of this study indicate that further mineral industry development along with industrial development will be necessary to continue or restore a healthy economic climate in Chaves and Eddy Counties.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ACKNOWLEDGEMENTS

Money was made available for this research project through a research assistantship with the New Mexico Bureau of Mines and Mineral Resources.

I would like to thank W. E. Bertholf, A. J. Thompson, Frank E. Kottlowski, Robert Bieberman, Kelly Summers, Robert Weber, Lucien File and Roshan Bhappu of the New Mexico Bureau of Mines and Mineral Resources; Walter Burleson, Herman Sheffer and Robert Stotelmeyer of the U. S. Bureau of Mines; Paige Christiansen, David Schwab, Lawrence A. Hathaway and Clay T. Smith of the New Mexico Institute of Mining and Technology; Houston Clark of Potash Company of America; John Wright of U. S. Borax and Chemical Company; Thomas Corr and James Wyman of Southern Union Gas Company; Roger Owen, Larry Millner and other personnel at Southwestern Public Service Company; Lloyd A. Calhoun of New Mexico Electric Service Company; Donald L. Garey of Industrial Development Corporation of Lea County; Ralph Rettig and others at El Paso Natural Gas Company; Margaret Meaders and staff at the Bureau of Business Research, Albuquerque, New Mexico; Francis Tracy of Carlsbad Irrigation District; M. W. Degeer and Gordon Walhood of the U. S. Army Corps of Engineers; Roswell Industrial Development Corporation;

Roswell and Carlsbad Chambers of Commerce; the various State Engineer's Offices; Socorro Electric Co-operative; and my wife Nancy without whom this research could not have been completed.

INTRODUCTION

This paper is concerned with a study of a portion of southeastern New Mexico, including Chaves, Eddy, and Lea Counties as shown on Figure 1. The limitation to these counties was made because of the advance made by the mineral industry in Eddy and Lea Counties without dependence on the federal government. Chaves County, on the other hand, had heavy dependence on the federal government and has chiefly an agrarian economy. These three counties have the largest population centers in southeastern New Mexico, and severe problems of accelerated obsolescence rates affecting capital in the mineral industry.

New Mexico has vast mineral resources which, if fully developed, could raise the state to the position of one of the leading economic forces in the nation. Yet, significant subsurface areas in New Mexico have not been extensively mapped or studied by earth scientists, and a large portion of the state is thus relatively unknown in regard to its mineral values. Despite the lack of detailed knowledge, New Mexico is one of the leading raw mineral producers in the United States. To date the majority of the raw materials produced in New Mexico have been shipped out of the state to be refined or manufactured into high unit value products and have thus contributed to other areas' development. To realize its full economic

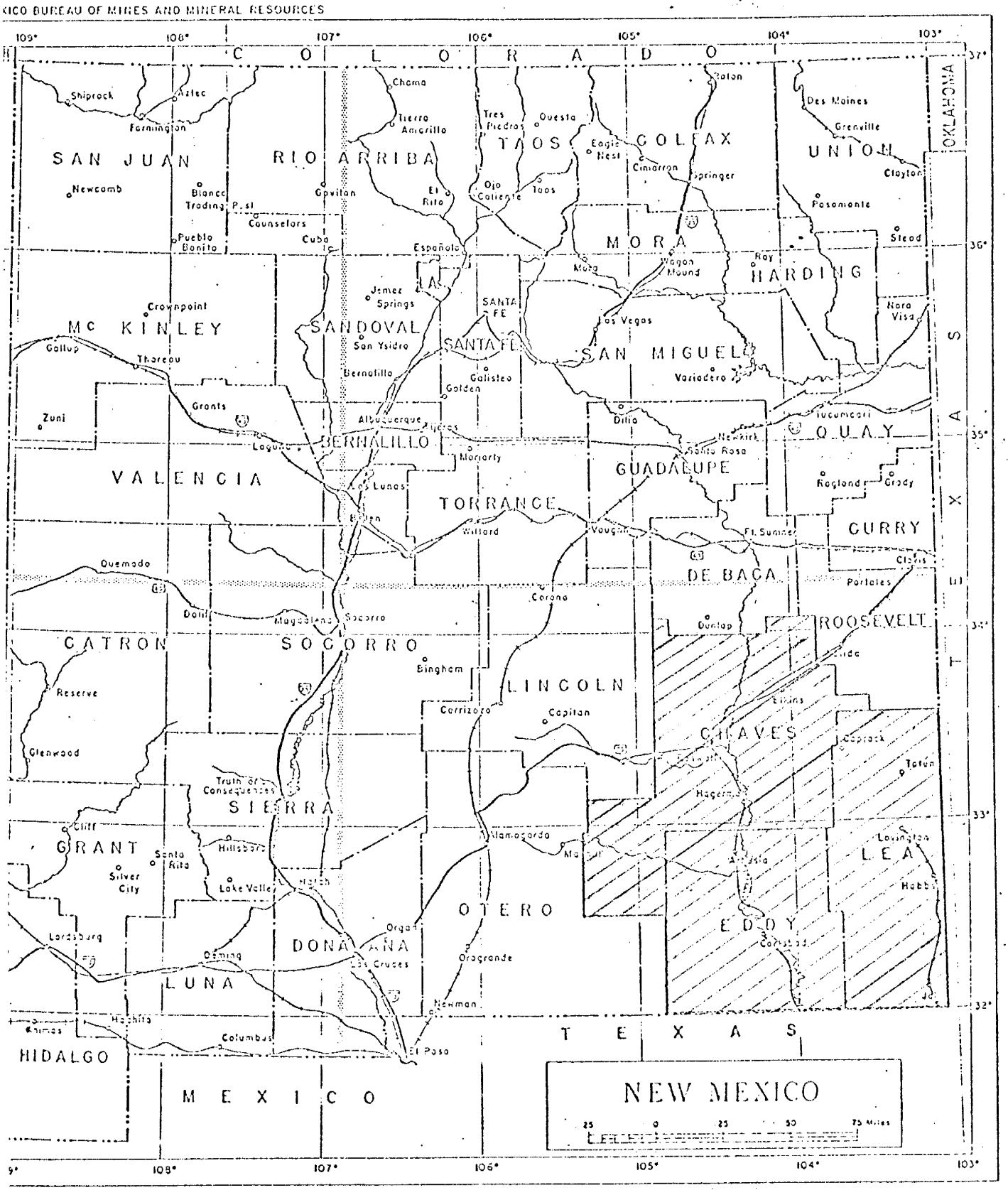


Figure 1
Economic Study Area

potential, New Mexico needs to attract industries which manufacture items at the source using raw mineral resources such as petroleum and potash products.

Southeastern New Mexico was chosen as a study area because of diverse and well developed mineral resources. Particular interest centers in Eddy County where the potash industry is meeting increasing competition around the periphery of one of its large agricultural markets--the Mississippi River Valley--and is facing competitive erosion in all major markets except the local captive one. These factors tend to accelerate capital obsolescence in the Eddy County potash operations. Also, the study of Eddy County affords an opportunity to see the marked contrast between it and agrarian Chaves County and heavily petroleum-industry oriented Lea County. Eddy County is more an economic intermediate in that both minerals and agriculture play important roles in the community.

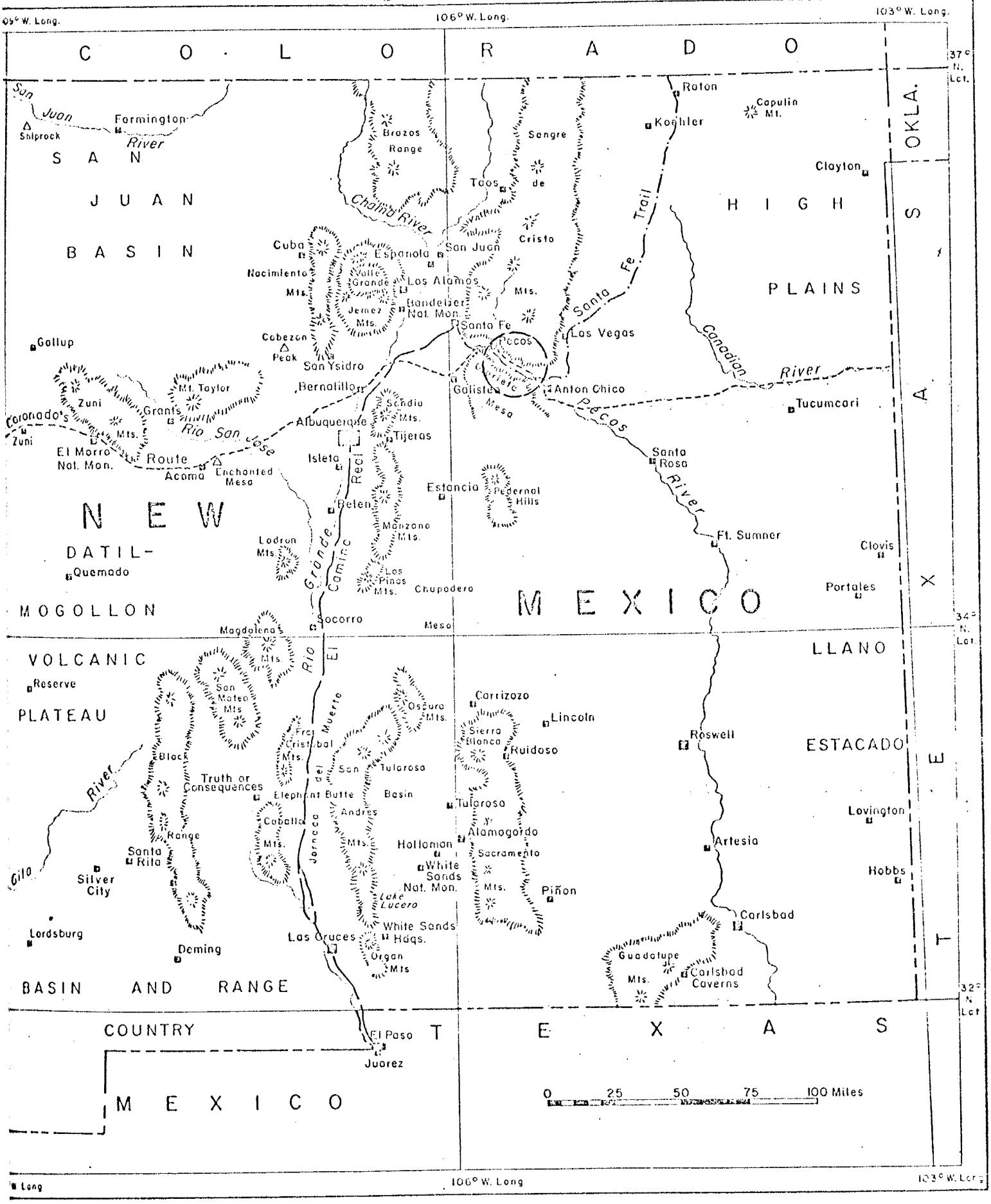
ECONOMIC HISTORY PRE-1900

Early Indian, Spanish and American Activity

Most of the early history of southeastern New Mexico was characterized by agrarian societies and the gradual extension of man along the water courses. In 1540, Coronado observed Pueblo Indians irrigating crops near the present village of Pecos. During the late 1700's Spanish settlers moved into this same area and settled as far south as Anton Chico (see Figure 2). Until well into the 19th century the agrarian Indians and Spanish irrigated as neighbors. However, due to harassment by nomadic Plains Indians and severe epidemics of small pox and typhoid fever, the Indians gradually moved out of the basin and the Mexican settlers acquired the Indian lands and ditches.

Settlement south of Anton Chico was not aggressively pushed under either Spanish or Mexican colonial governments. Small villages to the north were reinforced and Las Vegas had been settled by 1835. Part of the hesitancy to push settlement to the south was undoubtedly due to continued hostile Indian activities (Sorensen, 1965, p. 69; Sorensen and Borton, 1967).

Figure 2



Early Settlement of Upper Pecos Valley

The early development of the Territory of New Mexico was hindered by factors other than Indians, such as adverse climate and geographic remoteness. As a result settlement of the middle Pecos Valley did not take place until the period of the American Civil War.

After the Civil War the rudiments of future economic growth of southeastern New Mexico were laid down. During this period, Congress passed land acts which made public domain easily available to ranchers and farmers. In addition, the federal government sponsored the extension of railroads into the American West. The large cattle ranches, the railroads, and the rural farmer became the important ingredients for the economic growth of southeastern New Mexico.

Cattle

The Pecos Valley was one of the first areas in New Mexico where American settlers established ranches. A few hardy individuals disregarded the Indians and other factors, such as remoteness and arid climate, and came to New Mexico Territory to settle in the Pecos Valley. Between 1860 and 1875, such men as John Chisum created great cattle empires in the Pecos Valley. Their cattle were driven over the famous trails to the railheads in Kansas where they were shipped to eastern markets.

During the decade of the 1880's cattle raising became the largest industry in New Mexico. In four years an investment of a few thousand dollars could net a profit of forty or fifty thousand dollars. Acquiring a

range to graze cattle was a simple matter when the cattle empires were being established in New Mexico. "It was only necessary to possess title (by any means) to the available water supply in order to control the land for miles in every direction as though that land were actually owned." (Annual Reports of the Governor of New Mexico Territory, 1883).

Three major influences changed the picture of cattle in New Mexico during the 1880's. First was the end of the long drive. The same railroads that made the sale of cattle feasible in distant markets also brought thousands of farmers to the midwest and southwest sections of the nation. "These farmers, quite naturally, objected to the passage of cattle that broke their fences and trampled their grain..." (Riegel and Atheran, 1966, p. 540). The farmers quickly gained stature and political power and effectively barred the passage of cattle by forcing states to enact laws which restricted cattle movement. Such restrictions, plus the extension of the railroads into the cattle region, brought the long drive to an end. From then on cattle were shipped to distant markets directly from the ranches and farms of the Pecos (Riegel and Atheran, 1966, p. 541).

Secondly, the 1870's and 1880's brought about a cattle boom which attracted capital from various speculators. These investments came not only from the United States, but from abroad, primarily England and Scotland. The individually owned cattle ranch was being replaced by the large corporation which used speculative capital emanating from hundreds of investors. The Prairie Land & Cattle Company, for example, had

ranches in Texas, New Mexico, and Oklahoma and owned 7,900 square miles of grazing and stock land with some 140,000 head of beef (Riegel and Atheran, 1966, p. 541).

Lastly the most important change began in 1883, when American beef exports dropped by 50 per cent. In 1884 the domestic prices of beef began dropping and by 1887 dropped to a low of $2.50 a hundred weight. To make matters worse there was a drought in 1886-1887 followed by a very cold winter in which cattle died by the thousands. Some herds were reduced by as much as 90 per cent (Riegel and Atheran, 1966, p. 542). The cattle boom was over and the cattle industry faded from the economic picture as the main contributor to southeastern New Mexico's economy.

Railroads

The economy of New Mexico took a sharp upward turn when the Santa Fe railroad entered the Territory.

> The greatest impetus to economic development in the Territory was the advent of railroad transportation. By December 7, 1878, the Atchison, Topeka, and Santa Fe Railroad reached the northern boundary of New Mexico, and a subsidiary, the New Mexico and Southern Pacific, started to build south from there... It was not until April 5, 1880... that the line reached Albuquerque. (Westphall, 1965, p. 92).

In 1880 the population of New Mexico was about 120,000 people. Most western states had little population development, and this prompted the federal government to induce railroads to expand to the west to accelerate development of the United States. Part of railroads' entice-

ment consisted of large sections of land that were granted to the railroads for completion of trackage by a certain deadline.

> Railroads received a large amount of the public domain in grants and right-of-ways. The one grant in New Mexico which was ever legally earned was that to the Atlantic and Pacific Railroad Company (Santa Fe), and only to the A & P was title to land conveyed by the United States. Of this grant, 3,565,730.91 acres, exclusive of railroad right-of-way, was acquired by the A & P in New Mexico (Westphall, 1965, p. 115).

Railroads gave New Mexico greatly increased potential for ranching and farming. "What gave farms their value was the accessibility to distant markets where produce could be sold for more than the cost of production." (Waters, 1950, p. 477). The following table illustrates the increase in production the railroad created for ranching, farming and the mineral industry in New Mexico from 1870 to 1900.

TABLE 1. PRODUCT PRODUCTION FOR NEW MEXICO FROM 1870 TO 1900*

Year	1870	1880	1890	1900
Number of Cattle	57,534	347,936	1,631,533	803,047
Number of Sheep	619,438	3,938,831	2,474,494	3,333,743
Pounds of Wool	684,930	4,019,188	7,980,998	15,209,199
Value of Livestock	$2,389,930	$10,914,800	$25,111,201	$31,727,400
Value of Mining Products	$ 343,250	$ 441,691	$ 4,611,764	$ 2,686,473

* L. L. Waters, Steel Trails to Santa Fe (Lawrence, Kansas: University of Kansas Press, 1950), p. 477.

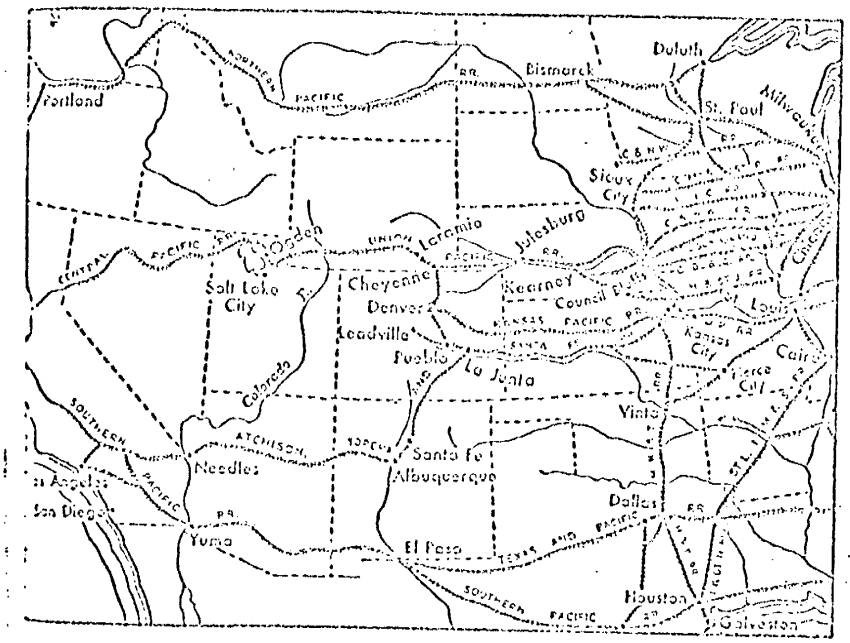
Before penetration by the Southern Pacific and Santa Fe railroads, the southwest was often called the great American desert. As more people traveled west, the desert falacy began to dissolve. More and more people came to the plains states and the southwest to settle and farm after the railroads provided easy transportation west of the Mississippi River.

The railroad provided rapid and dependable transportation cross country (see Figure 3). A journey that would have taken months by wagon train from coast to coast could be made in four or five days by train. A family on the east coast could leave by train and be in New Mexico in a few days. Before the railroads opened the west to rapid travel, it was an arduous and dangerous journey from the east coast by train to St. Louis, Missouri and then to New Mexico Territory by wagon train.

Of the people that stayed in New Mexico Territory most were farmers or ranchers. These early farmers encountered many difficulties living off the land. As if the natural environment were not hostile enough, the early farmers met with trouble from the cattle ranchers. Most of the early cattle ranchers would not let the farmers have the water that was necessary for the survival of the farmers' crops.

After the cattle boom of the 1870's and early 1880's declined, farmers from the east brought by the railroads, took over much of the land and water that had been controlled by the cattle empires. The farmers found that the same railroad that brought them to New Mexico also provided

Figure 3



Principal Pacific Railroads in 1883

transportation for their crop production to distant markets. Large scale crop production in present Chaves, Eddy and Lea Counties started before the turn of the century on lands irrigated from the Pecos River.

Farming

During the period following the Civil War, Congress passed several land acts designed to speed the settlement of the west. After railroads made transportation to the west easy, the land acts gave added incentive to many people in the east to move west in search of new opportunities. Under the Homestead Act of 1862 and the Desert Land Act of 1877, people could obtain title to land by developing and improving the land by farming. Under the Homestead Act it was possible to obtain title to a quarter section (160 acres) and after the Desert Land Act, it was possible to obtain title to a full section (640 acres). In either case the land was free if the development requirements were met.

After 1890, when the cattle market had deteriorated, the farmers found the Pecos Valley much less hostile. Soon the major extent of the Pecos River was being farmed. The only source of water, other than scanty natural rainful, was the Pecos River and its major tributaries, hence farming became dependent on irrigation. At first surface waters were used but these were found inadequate. In the 1890's, the first wells were drilled in Roswell area, and after 1900 well irrigation began to predominate.

During the period before 1900 the majority of the crops consisted of wheat, oats, barley and alfalfa with a few fruits and vegetables being grown. The following table was constructed by estimates using the United States Bureau of Census figures of New Mexico as a territory.

TABLE 2. VALUE OF CROP PRODUCTION FOR NEW MEXICO TERRITORY 1880-1900

Year	Value of Crop Production
1880	$450,000
1890	$410,000
1900	$770,000

Mining and Heavy Mineral Production

There was no evidence of mining in what is now Chaves, Eddy, and Lea Counties prior to the twentieth century.

ECONOMIC HISTORY 1900-1950

Railroads

Most of the major expansion and relative economic impact of railroads in New Mexico occurred before 1920. The railroads had a continuing influence throughout the first half of the twentieth century in southeastern New Mexico, but with the development of reliable motor truck transport, the railroad played a role of less and less significance as the driving economic force in the Pecos Valley.

At no time should it be forgotten that the Santa Fe Railroad provided the transportation means by which New Mexico began to advance economically. Even after the railroad began to diminish in economic significance in the area of study it still provided transportation for oil and gas products after 1924, for the potash industry after 1931 in the Carlsbad area, as well as continuing transportation for the farm products.

After 1920 the railroad no longer held the position of being the only means of transportation for individuals, farm production and industrial products. The railroad still had a competitive rate advantage for long distances to most cities over truck-haul, but the railroad was limited by the fact that it could directly serve only towns and cities which were on the rail line. As a consequence on the short-haul freight bases to many cities and towns it was cheaper to freight by motor transport. Thus, the

railroad companies, such as Santa Fe, developed their own truck transportation system to compete with trucking companies. With the advent of the truck came a keen competition between these two forms of transportation.

> In 1920 total volume of United States intercity freight traffic was 500 billion ton-miles. The railroad hauled 84% of this, or about 420 billion ton-miles... motor vehicles carried less than 1%... In 1964 railroad transportation hauled only about 43.5% or 666 billion ton-miles, while other forms of transport (mainly motor transport) accounted for over 50% of freight ton-miles(Pegrum, 1968, p. 29).

The railroad also played a lesser and lesser role in passenger transport. Of all the forms of motor transport, the automobile has had the most significant influence on how people travel from one place to another. "The rapid rise of the newer means of transport, especially the motor vehicle, after 1920 ushered in the decline of mass rapid transit by rail..." (Pegrum, 1968, p. 29).

Agriculture

The surface drainage systems of the Pecos Valley could only supply a small portion of the water needed so wells were drilled in search of water for irrigation. The first important artesian wells were developed in the period 1902-1904. The large yields of some of the early artesian wells, which in some cases reached 1500 gpm, created much interest in the region for future farm spectulation. No decline in the artesian head or pressure or discharge was at first noticed and the supply was considered inexhaustible (Fiedler, 1926, p. 28). By 1925 there were some 60,000

acres which were being directly or indirectly irrigated with water from the artesian acquifer (Fiedler, 1926, p. 28).

At first the artesian water was applied to apple orchards and alfalfa. By 1920 cotton was introduced and became the largest crop as individual farmers found cotton to be the most profitable. "The chief crops grown in the basin in 1925 were cotton, alfalfa, apples, corn, oats, sorghum, and truck." (Fiedler, 1926, p. 28). The distribution of acreage by major crops in 1925 is given by the following table:

TABLE 3. MAJOR CROP ACREAGE DISTRIBUTION FOR EDDY AND CHAVES COUNTIES IN 1925*

County	Total Acres	Cotton	Alfalfa	Orchard	Misc. Crops
Chaves	29,600	13,950	10,300	1,810	3,540
Eddy	15,400	7,610	5,490	530	1,770
Total	45,000	21,560	15,790	2,340	5,310

* Albert G. Fiedler (1926) Report on Investigations of the First Roswell Artesia Basin Chaves and Eddy Counties, New Mexico, State Engineer's Report, p. 28.

Dollar values of various crops give an accurate account of the relative proportions of crops grown in the Pecos Valley in 1925. Tables 4 and 5 show these figures.

With crops valued at a little under $4,000,000 in Chaves and Eddy Counties, it is easy to see that in 1925 farm crops constituted large economic importance in southeastern New Mexico. Table 6 illustrates the growing value of agricultural products in Chaves, Eddy and Lea Counties from 1910 to 1950.

TABLE 4. VALUE OF ALL CROPS GROWN IN CHAVES COUNTY IN 1925*

Crop	Dollar Value
Cotton	1,487,430
Alfalfa	778,550
Apples	260,000
Misc.	192,309
Total	2,718,289

*Albert G. Fiedler (1926) Report on Investigations of the First Roswell Artesia Basin Chaves and Eddy Counties, New Mexico, State Engineer's Report, p. 28.

TABLE 5. VALUE OF ALL CROPS GROWN IN EDDY COUNTY IN 1925*

Crop	Dollar Value
Cotton	575,000
Alfalfa	330,000
Apples	62,000
Misc.	58,000
Total	1,025,000

*Albert G. Fiedler (1926) Report on Investigations of the First Roswell Artesia Basin Chaves and Eddy Counties, New Mexico, State Engineer's Report, p. 28.

TABLE 6. AGRICULTURAL CONTRIBUTIONS TO ECONOMY OF REGION 1910-1949[a]

Year	Total Value of Crops Sold	Total Value of Livestock Sold
1910	$ 1,320,000***	$ 1,750,000***
1915	$ 1,850,000***	$ 3,500,000***
1920	$ 3,280,000***	$ 4,200,000***
1925	$ 3,743,289*	$ 5,560,000***
1934	$ 4,950,000**	$ 6,150,000**
1940	$ 3,236,106	$ 5,032,049
1945	$ 7,194,109	$ 8,163,872
1949	$18,880,096	$13,484,210

[a]Figures obtained from United States Census of Agriculture, Vol. 1, 1945, pp. 9-18 and the United States Census of Agriculture of 1950.

*Value of crops grown

**Values estimated from state figures. Pecos crops = .35 x state crops and Pecos livestock = .30 x state figure.

***Author's estimates derived from state values obtained from New Mexico Agricultural Statistics Vol. I, N. M. D. A. in cooperation with U. S. D. A., Sept., 1962, pp. 43-63.

The above table illustrates the increased value of agricultural production after the Second World War. From the years of 1945 to 1949 there was an increase of over 100 per cent in dollar value of crops sold and an increase of about 75 per cent in dollar value of the livestock and dairy products sold from the region. During the Second World War, prices were fixed by the federal government and with growing season uncertainties the rancher and farmer never knew what profit to expect. Starting in 1945 with the removal of federal price restrictions there was a tremendous increase in the value of the agricultural output of the state.

Mineral Industry

The economy of Eddy and Lea Counties changed rapidly after 1924 with the discovery of oil in large quantities in the Hobbs area. Further increasing the significance of the mineral and mining industry, potash resources were discovered in Eddy county near Carlsbad and mining operations began in 1931.

Petroleum Products

The first discovery of oil in New Mexico occurred in 1909 near Daton, about 8 miles south of Artesia in Eddy County. This discovery was made below the artesian water zone in the San Andres formation. The early discoveries were considered accidental as the wells through which the oil was discovered were being drilled in search of water. Due to the poor quality of cement used at the time of the early discoveries, it was not possible to stop the water infiltration and pollution of the oil. Consequentially the first attempt to recover liquid fossil fuel could not be considered commercially successful. Several other wells were drilled around the Artesia area, but none of these early wells were very successful (Helmig, 1956, p. 21).

Starting in 1924 in Eddy County oil production began and in 1926 natural gas production began on an appreciable scale. By 1928 large discoveries were made in Lea County in the Hobbs area, and full scale

production was underway by 1932. It is interesting to note that after production began in southeastern New Mexico in 1924, these fields continued to produce practically all petroleum products in New Mexico through 1950.

The following four tables illustrate the quantity and value of the petroleum products produced in southeastern New Mexico from 1924 to 1950 at five year intervals.

TABLE 7. CRUDE OIL PRODUCTION FOR SOUTHEASTERN NEW MEXICO IN FIVE YEAR INTERVALS 1925-1950*

Year	Production in bbls	Value in $1000	Price/bbl in SENM
1925	1,060,000	1,815	1.17**
1930	10,189,000	9,180	.82**
1935	20,483,000	16,060	.78
1940	39,129,000	32,500	.83
1945	37,351,000	37,610	1.01
1950	47,367,000	115,100	2.45

*Data collected from U. S. Bur. Mines Mineral Yearbooks.
**Data estimated from average U. S. prices.

TABLE 8. NATURAL GAS PRODUCED AND DELIVERED TO CONSUMERS IN SOUTHEASTERN NEW MEXICO 1926-1950*

Year	Millions of cu. ft.	Value in $1000 at wellhead	Price/MCF
1926	921,000	72	7.8¢
1930	9,497,000	313	3.3¢
1935	27,931,000	508	1.8¢
1940	63,990,000	985	1.5¢
1945	105,023,000	1,460	1.4¢
1950	212,909,000	6,387	3.0¢

*Data collected from U. S. Bur. Mines Mineral Yearbooks.

TABLE 9. NATURAL GASOLINE AND ALLIED PRODUCTS PRODUCTION FOR SOUTHEASTERN NEW MEXICO 1926-1950*

Year	1000 gal.	Value in $1000	Price gal.
1926	1,488	146	9.8¢
1930	3,663	169	4.6¢
1935	19,563	699	3.6¢
1940	55,713	879	2.9¢
1945	97,798	4,260	4.0¢
1950	210,798	10,959	6.3¢

*Data compiled from U. S. Bur. Mines Mineral Yearbooks.

TABLE 10. TOTAL VALUE OF PETROLEUM PRODUCTS PRODUCED IN SOUTHEASTERN NEW MEXICO 1925-1950 BY FIVE YEAR INTERVALS

Year	Value in $1000	Accumulative Value in $1000
1925	1,815	1,942
1930	9,662	20,719
1935	17,267	75,235
1940	34,364	241,815
1945	43,330	449,097
1950	132,446	978,247

After 1935 the oil and gas industry in southeastern New Mexico had a tremendous economic impact. Most of the operations through 1950 were centered in Lea County, but Eddy County was also an appreciable contributor to the petroleum industry economy of the area. The oil and gas industry continued to expand until it was the largest contributor to the gross state product of New Mexico. By 1950 the oil and gas industry accounted for about one fourth of the value of all products produced in New Mexico which would make it the most important industrial asset the state possessed after the war years.

Potash Industry

Eddy County, beginning in 1931, had another source of economic influence which promoted growth in the county through the years; this source was the potash industry. Prior to 1931, the United States imported most of its potash. France and Germany created a near-monopoly of potash through a 1924 agreement that reestablished their control of world markets after World War II. This Franco-German agreement accelerated the search within the United States for adequate domestic sources of cheap potash.

This program uncovered extensive deposits of sylvite and carnallite near Carlsbad, New Mexico, in 1925.

> Exploratory results were so encouraging that the American Potash Company was formed to explore intensively an area surrounding the discovery well. After 16 test holes were drilled, a compartment shaft was started in December 1929, and completed within a year to a depth of 1,062 feet. Workings were opened in a commericial bed of sylvite at 980 feet, and shipment in March 1931 averaged as mined, 26.8 per cent K_2O. The company was incorporated in 1930 as the United States Potash Company (Hedges, 1935, p.1146).

Another company, Potash Company of America, was formed in 1931 and completed a shaft in 1933. By 1934 the second potash company in the Carlsbad area was shipping potash products.

The following table lists potash sales from the potash industry in the Carlsbad area from 1931 to 1950.

TABLE 11. POTASH SALT SALES FOR THE POTASH INDUSTRY NEAR CARLSBAD 1931-1950*

Year	K_2O Equivalents in short tons	Values in $1000	Average Price/ton
1931	63,770	3,087	$48.4
1935	224,721	4,993	$22.2
1940	393,058	12,562	$32.0
1945	733,176	25,456	$34.7
1950	1,072,772	31,944	$29.8

*Data compiled from U. S. Bur. Mines Mineral Yearbooks.

TABLE 12. ACCUMULATIVE VALUE FOR POTASH 1931-1950

Year	Value in $1000	Accumulative Value in $1000
1931	3,087	3,087
1935	4,993	18,293
1940	12,562	68,620
1945	25,456	174,452
1950	31,944	318,746

Through the years 1931-1950, since the beginning of operations, the potash industry has been the major economic element in the Carlsbad area. The mines employed as many as 4,000 people with a yearly payroll in the millions of dollars contributing to Carlsbad's and Eddy County's economic development. The potash industry by 1950 was definitely a major contributor to the economy of the state as the total accumulative gross value of the potash production sales amounted to approximately 320 million dollars.

ECONOMIC HISTORY 1950-1965

Mineral Industry and Production

Before 1950 it was apparent that the mineral industry in Lea and Eddy Counties outdistanced the agricultural sector. It is especially noticeable in Lea County as the economic gap continued to widen during this period of time until the output of the petroleum industry was more than an order of magnitude larger in value than the agricultural output of the county. Eddy County remained economically dependent on both the mineral industry and agriculture; however, the mineral industry took an ever increasing lead through 1965. Chaves County remained primarily an agricultural producer with some minor increases in petroleum operations.

Petroleum

The oil and gas operations in New Mexico are by far the greatest contributor to the gross state product (G. S. P.) as receipts totaled about half of the entire value of the state product from 1955 through 1965. After 1940 no one industry in the region approached the petroleum industry in magnitude of operations or gross value of production or sales. In

1965 oil and gas production in the state grossed about $500,000,000 with 80% ($400,000,000) derived from the study area. Since 1924 the oil and gas operations within the state have grossed over $6,500,000,000 and the operations in the southeastern corner of New Mexico accounted for about $5,700,000,000 of the total.

Table 13 compares the total value of all petroleum products of the study area with the total value of petroleum products of the state.

TABLE 13. TOTAL VALUE OF ALL PETROLEUM PRODUCTS STATE VS. STUDY AREA *

Year	Value in $1000			
	State		Study Area	
	Each Year	Accumulative Total	Each Year	Accumulative Total
1950	131,918	978,247	127,085	973,414
1955	297,621	2,089,296	272,428	2,011,024
1960	440,580	4,058,567	350,049	3,675,010
1965	492,208	6,370,143	398,768	5,547,226

*Figures obtained from the U. S. Bur. Mines Mineral Yearbooks 1950-1967. (Additional data on petroleum products in the study area are listed in Appendix A)

New Mexico as a state ranked sixth in the nation as an oil producer and ranked fourth as a gas producer in 1961. Lea County led the nation in production by a single county during this period of time. Lea County produced 62% of oil and gas sales in New Mexico in 1961 and Eddy County produced 11% of oil and gas sales in New Mexico. Chaves County accounted for 3% of oil and gas sales in New Mexico in 1961 which would make a total of 76% for the study area of all oil and gas sales in 1961.**

**Figure obtained from The Oil Conservation Commission in Santa Fe, New Mexico.

Potash

In the early 1960's the potash industry annually grossed about one-quarter the value of the petroleum industry production in the study region. The potash industry tripled its annual value of production between 1950 and 1965. In 1963 potash production was valued in excess of $100,000,000. During this period employment at the mines reached a high of 4,000.

There has been a steady depletion of high-grade ore reserves making it necessary to build new processing and concentration plants to treat the lower-grade ores. U. S. Borax and Chemical Company, the pioneer of potash production in the Carlsbad area, had announced that they would close operations in Eddy County by 1963, and would be continuing operations on the Canadian potash deposits in Saskatchewan. Their move was prompted by the high cost of recapitalization in a new processing plant and the lack of substantial high-grade reserves in their Carlsbad operations. The lack of substantial high-grade reserves seems to be common to all of the companies in the area.

The following tables show the value and scale of production for the potash industry in the Carlsbad area at five year intervals between the years of 1950 and 1965.

TABLE 14. PRODUCTION AND VALUE OF POTASH IN EDDY COUNTY, NEW MEXICO 1950-1965*

Year	Production in Short-Ton K_2O	Value in $1000	Value/St-t
1950	1,072,722	37,108	$34.70
1955	1,826,118	69,058	37.82
1960	2,440,000	82,645	33.90
1965	2,848,000	117,771	41.30

*Figures used are from U.S. Bur.Mines.Mineral Yearbooks.

TABLE 15. ACCUMULATIVE VALUE OF POTASH IN EDDY COUNTY, NEW MEXICO 1950-1965

Year	Value of Production in $1000	Accumulative Value of Production in $1000
1950	37,108	318,746
1955	69,058	608,158
1960	82,645	982,025
1965	117,771	1,487,619

Potash overproduction that has developed in the world market during the 1960's may diminish the importance of the potash industry in Eddy County for some time in the future, but the industry has been a strong economic force in southeastern New Mexico for about thirty years.

Agriculture

Agriculture continued to have a significant influence in southeastern New Mexico from 1950 to 1965. While Chaves County relied more heavily on agriculture and the federal government for its economic stability, it is noted that Eddy and Lea Counties also produced large quantities of agricultural products. Production in the study area amounted to approximately 45 to 65 million dollars annually from 1950 through 1965 or about 24 per cent of the state's agricultural output.

The major crops produced in the study area remained essentially the same as pre-1950 crops and consisted of cotton, hay, alfalfa seed, sorghums, barley and oats. Cattle, dairy products, sheep, hogs, eggs, wool and mohair production added to the agricultural output of the three counties. The following table illustrates the value of agricultural production for the state versus the value of the agricultural production for the study area.

TABLE 16. VALUE OF AGRICULTURAL PRODUCTION--STATE VS. STUDY AREA*

Year	Value of Production in $1000		
	State	Study Area	Study Area's Percentage of State Production
1950	220,854	51,649	23%
1955	178,834	46,359	26%
1960	244,177	56,256	23%
1965	271,480	58,812	22%

*Data estimated from state figures found in New Mexico Department of Agriculture's New Mexico Agricultural Statistics, Vol. 1, 2, 3, 4, 5, and 6, 1962-1967.

Lea County, while its agricultural output in value was far overshadowed by the oil and gas operations, did account for 18 per cent of the region's output. Eddy County accounted for another 35 per cent and Chaves County accounted for the remaining 45 per cent of the agricultural output. The region as a whole did not depend as heavily on the agricultural industry as it had before 1945.

Population Statistics

In 1912 New Mexico became the forty-seventh state of the Union. Since 1912 the state population steadily increased until 1945 when the population growth accelerated rapidly until the late 1950's. During the 1960's there has been a decreasing rate of population growth in certain areas. The population growth of Bernalillo County has far out stripped the state average and each of the counties in the study area due to intensive federal government activities from 1945 to 1965 in Albuquerque. Within the study area relative increases in population reflect the presence of the potash industry in Eddy County and the oil and gas operations in Lea County. Chaves County showed a steady increase in population from 1910 to 1940 due mainly to the heavy reliance of that county on agriculture. The population of Chaves County experienced increased growth in the 1940's and 1950's due to federal government activities near Roswell.

Table 17 (Blumenfeld, 1960, p. 3 and Edgel, 1968) illustrates the relative population figures of Chaves, Eddy and Lea Counties relative to Bernalillo County and the state as a whole.

TABLE 17. NEW MEXICO POPULATION STATISTICS

County	1910	1920	1930	1940	1950	1960	1965
Bernalillo	23,606	29,855	45,430	69,391	145,673	262,199	316,600
Chaves*	16,850	12,075	19,549	23,980	40,605	57,649	62,000
Eddy*	12,400	9,116	15,842	24,311	40,640	50,783	53,500
Lea*	-------	3,545	6,144	21,154	30,717	53,429	51,500
State	327,301	360,350	423,317	531,818	681,187	951,023	1,032,900

*In 1917 DeBaca County was organized from parts of Chaves, Guadalupe and Roosevelt Counties. Roosevelt County annexed a strip of land from Chaves. Lea County was organized from parts of Chaves and Eddy Counties.

Labor

Labor figures indicate a large decrease in agricultural oriented employment in Chaves, Eddy and Lea Counties. This is an indication of a decreasing reliance on agriculture in the study region.

In 1964 New Mexico depended upon all levels of government for 27 per cent of all employment and for 24.4 per cent of all personal income. Chaves County depended on all levels of government for 27.8 per cent of employment and for 36.0 per cent of all personal income. Both Eddy and Lea Counties depended far less on government agencies for employment and personal income than either the state in general or Chaves County. Eddy County's dependency on the various agencies accounted for 10.7 per cent of employment and 7.9 per cent of personal income. Lea County depended on governmental units the least of any county in New Mexico with employment at 9.0 per cent and personal income at 7.2 per cent (Meaders, 1967, p. 2).

The per capita income in Chaves County was below the state's average. The population experienced a high rate of growth mainly attributed to natural increases. In the previous decade Chaves County's population, employment, personal income and per capita income expanded at a much higher rate than during the 1960's (Edgel and LaLonde, 1964).

In Eddy County personal income and per capita income were below average growth mainly due to very low mining payroll advances. Population growth was low because of out migration. During the early 1960's the chief sources of wages were potash mining and some petroleum operations.

In Lea County the rate of increase in personal income was below state average, while per capita income showed an average gain. The main reason for this was that the oil and gas industry reduced employment, but enlarged the payroll. The population of Lea County experienced low rate of growth.

The following tables (Edgel and LaLonde, 1964) indicate the distribution of employment in Chaves, Eddy and Lea Counties over the years 1960-1964.

TABLE 18. DISTRIBUTION OF EMPLOYMENT IN CHAVES COUNTY
1960-1964

	1960	1961	1962*	1963	1964
Population	58,000	62,900	69,200	66,800	65,300
Employment					
Total[1,2]	22,560	23,360	27,250	23,720	22,220
Agricultural	2,310	2,100	2,030	1,890	1,750
Nonagricultural	20,250	21,260	25,220	21,830	20,470
Self-employed[3]	1,960	2,010	2,050	2,080	2,050
Wages & Salary	18,290	19,250	23,170	19,750	18,420
Mining	550	540	590	620	580
Construction	1,620	2,170	1,570	1,090	950
Manufacturing	750	1,070	1,890	980	1,060
Transport and Utilities	770	890	880	930	900
Trade	3,360	3,480	3,660	3,490	3,300
Fin., Ins, & R.E.	630	680	760	790	770
Services & Misc.	2,350	2,660	5,000	2,740	2,880
Government[1]	8,260	7,760	8,820	9,110	7,980
Federal[4]	6,590	6,030	6,960	7,130	5,900
State and Local	1,670	1,730	1,860	1,980	2,080

*The apparent anomaly in 1962 nonagricultural employment in Chaves County was due to federal government aero-space activities of a short run nature at Walker AFB.

[1]Includes military personnel stationed in New Mexico.
[2]Includes farm proprietors and self-employed, regularly employed (nonseasonal) unpaid family workers, and wage workers, except seasonally employed Mexican nationals.
[3]Includes regularly employed (nonseasonal) unpaid family workers.
[4]Includes employees of the Los Alamos Scientific Laboratory.

TABLE 19. DISTRIBUTION OF EMPLOYMENT IN EDDY COUNTY
1960-1964

	1960	1961	1962	1963	1964
Population	50,900	52,000	52,700	52,500	53,000
Employment Total[1,2]	17,640	17,740	17,340	17,110	17,150
Agricultural	1,980	1,800	1,740	1,620	1,500
Nonagricultural	15,660	15,940	15,600	15,490	15,650
Self-employed[3]	1,750	1,760	1,770	1,770	1,770
Wage and Salary	13,910	14,180	13,830	13,720	13,880
Mining	4,410	4,500	4,030	4,190	4,090
Construction	900	990	980	830	1,030
Manufacturing	650	750	660	650	620
Transport & Utilities	870	830	780	750	740
Trade	2,530	2,570	2,570	2,630	2,590
Fin., Ins. & R. E.	430	420	470	520	490
Services & Misc.	2,460	2,410	2,500	2,360	2,480
Government[1]	1,660	1,710	1,840	1,790	1,840
Federal[4]	190	190	210	240	240
State & Local	1,470	1,520	1,630	1,550	1,600

TABLE 20. DISTRIBUTION OF EMPLOYMENT IN LEA COUNTY
1960-1964

	1960	1961	1962	1963	1964
Population	53,600	53,700	53,800	54,300	54,500
Employment Total[1,2]	20,730	20,510	20,100	20,310	20,650
Agricultural	1,650	1,500	1,450	1,350	1,250
Nonagricultural	19,080	19,010	18,650	18,960	19,400
Self-employed[3]	2,010	2,000	1,990	1,990	1,990
Wage and Salary	17,070	17,010	16,660	16,970	17,410
Mining	5,990	5,920	5,510	5,870	5,830
Construction	920	890	830	860	1,000
Manufacturing	610	590	550	460	460
Transport and Utilities	2,100	2,100	1,990	2,060	2,100
Trade	3,300	3,260	3,380	3,370	3,450
Fin., Ins. & R. E.	420	430	460	490	480
Services & Misc.	1,900	1,930	1,920	2,020	2,240
Government[1]	1,830	1,890	2,020	1,840	1,850
Federal[4]	90	100	120	120	90
State & Local	1,740	1,790	1,900	1,720	1,760

Table 21 (Edgel and LaLonde, 1964, pp. 17-27) shows the relative importance of most of the major economic elements in Chaves, Eddy, Lea and Bernalillo Counties.

TABLE 21. SOME MAJOR ECONOMIC ELEMENTS FOR SPECIFIC COUNTIES 1964

	Chaves	Eddy	Lea	Bernalillo	State
Population	65,000	53,000	54,000	310,000	1,023,300
	Employment by number of people				
Agricultural	1,750	1,500	1,250	1,000	25,000
Nonagricultural					
Private	12,430	13,810	17,550	83,290	154,000
Government	7,980	1,840	1,850	26,550	71,800
	Personal Income in $1000				
Total	128,122	100,674	119,171	750,050	2,063,481
Per Capita	1,959	1,900	2,201	2,334	2,006
Agricultural	10,359	8,828	5,899	1,855	101,700
Nonagricultural					
Government	39,830	7,847	8,616	146,290	506,067
Manufacturing	6,378	3,292	2,744	51,526	116,715
Mining	4,398	29,451	35,493	1,120	115,529
Transfer Payments	7,754	7,761	6,703	42,067	146,600

CURRENT ECONOMIC POSITION

Present and Projected Population

Slightly over one million people live in present New Mexico. Chaves County reached its peak population during 1962 and declined rapidly after the closing of Walker Air Force Base in Roswell in early 1966. Eddy County experienced a decline in population starting in 1965 and continuing through 1967 due to production cuts at the potash mines. Lea County experienced a similar decrease resulting from a reduction of employees in the oil and gas operations and a high rate of out-migration. All of southeastern New Mexico, then, has a declining population pattern.

The following table gives population estimates for the state and listed counties from 1960 through 1967.

TABLE 22 (Edgel, 1969, p. 2). POPULATION FIGURES IN NEW MEXICO IN 1000's

County	1960	1961	1962	1963	1964	1965	1966	1967
Chaves	58.8	62.9	69.2	66.8	65.3	62.0	59.0	51.4
Eddy	50.9	52.0	52.7	52.5	53.0	53.5	53.0	49.9
Lea	53.6	53.7	52.2	53.4	51.1	51.5	51.8	49.5
Bernalillo*	263.8	271.3	281.6	295.2	310.7	317.6	317.3	318.2
State	9547.0	9708.0	9845.0	10054.0	10233.0	10329.0	10333.0	10274.0

*Bernalillo County was added for comparison purposes.

Table 23 (Edgel, 1965, p. 17) published in 1965 contains estimates to the year 2000 of population in the study area and the state.

TABLE 23. LOW, MEDIUM AND HIGH PROJECTIONS OF POPULATION (IN 1000's) FOR NEW MEXICO

	1970			1980		
County	Low	Med.	High	Low	Med.	High
Chaves	67.9	73.3	79.7	85.4	92.4	100.5
Eddy	51.0	55.1	60.0	61.4	66.5	72.2
Lea	61.7	65.7	72.6	78.3	84.6	92.1
State	1114.1	1208.0	1326.5	1497.7	1630.0	1780.1
		1990			2000	
Chaves	104.8	114.8	127.0	136.7	151.4	169.8
Eddy	73.6	80.6	89.2	94.1	104.2	116.9
Lea	95.9	105.0	116.2	126.7	140.3	157.4
State	1919.3	2111.0	2344.8	2506.7	2778.0	3127.9

In addition to the problems which have reduced the population in Chaves and Eddy Counties, there has been an overall slowdown of the state in migration which has brought the state population figures to a virtual standstill from 1966 to the present.

The state experienced an accelerated growth rate after 1945 created by national-defense-oriented activities. There were many counties that acquired a heavy reliance on the federal government and its activities. As a result, capitalization for the short-run, which results in early capital obsolescence, was being built into these communities. To correct this obsolescence is painful and costly.

A case in point was Roswell where Walker Air Force Base was located. After the federal government closed Walker Air Force Base, Chaves County experienced a decline of over 10,000 inhabitants. Approximately one-quarter of all housing in Roswell was vacant. Property and housing were being sold at large discounts on what would have normally been considered fair market value.*

Unpredicted events often require revised calculations in short-run population figures, but lose most of their significance in the long-run. The long-run projected population figures on Table 23 indicate that there will be a two-fold increase in population in the study region by the year 2000, and about three times the present state population by year 2000. These figures may prove to be correct despite the declines of recent years.

The future steady growth of New Mexico's population will be an indication of an economically healthy region which is curing its own obsolescence. Present trends seem to indicate that such is the case in both the study region and the state in general. If this is true in New Mexico it will be a plus factor favoring industrial development.

---

*According to the Roswell Industrial Development Corporation the $7,000 to $13,000 price range was the only housing effected.

Transportation

Walker Air Force Base in Roswell is the only airfield in the study area that has runways of sufficient length to accommodate large commercial jet aircraft. Commercial air service is provided by Trans Texas International Airways and connections as well as service shown in Figure 4 (General Telephone Company of the Southwest, 1967).

The Santa Fe Railroad system passes through Roswell, Dexter, Hagerman, Lake Arthur, Artesia, Carlsbad, and Loving. Major connections are made in Clovis, New Mexico. There is one passenger and several freight trains running daily through the study area. Details of the railway system are shown in Figure 5. From Eddy County delivery times are as follows:

Kansas City	2nd day
Chicago	3rd day
Los Angeles	4th day
Dallas	3rd day
Houston	3rd day

The same figures can be used for Chaves and Lea Counties.

The highway system is illustrated in Figure 6. The major north-south highway through the study area is U. S. 285. The major east-west highways through study area are U. S. 62 and 180 through Carlsbad and U. S. 70 and 380 through Roswell.

AIR TRANSPORTATION

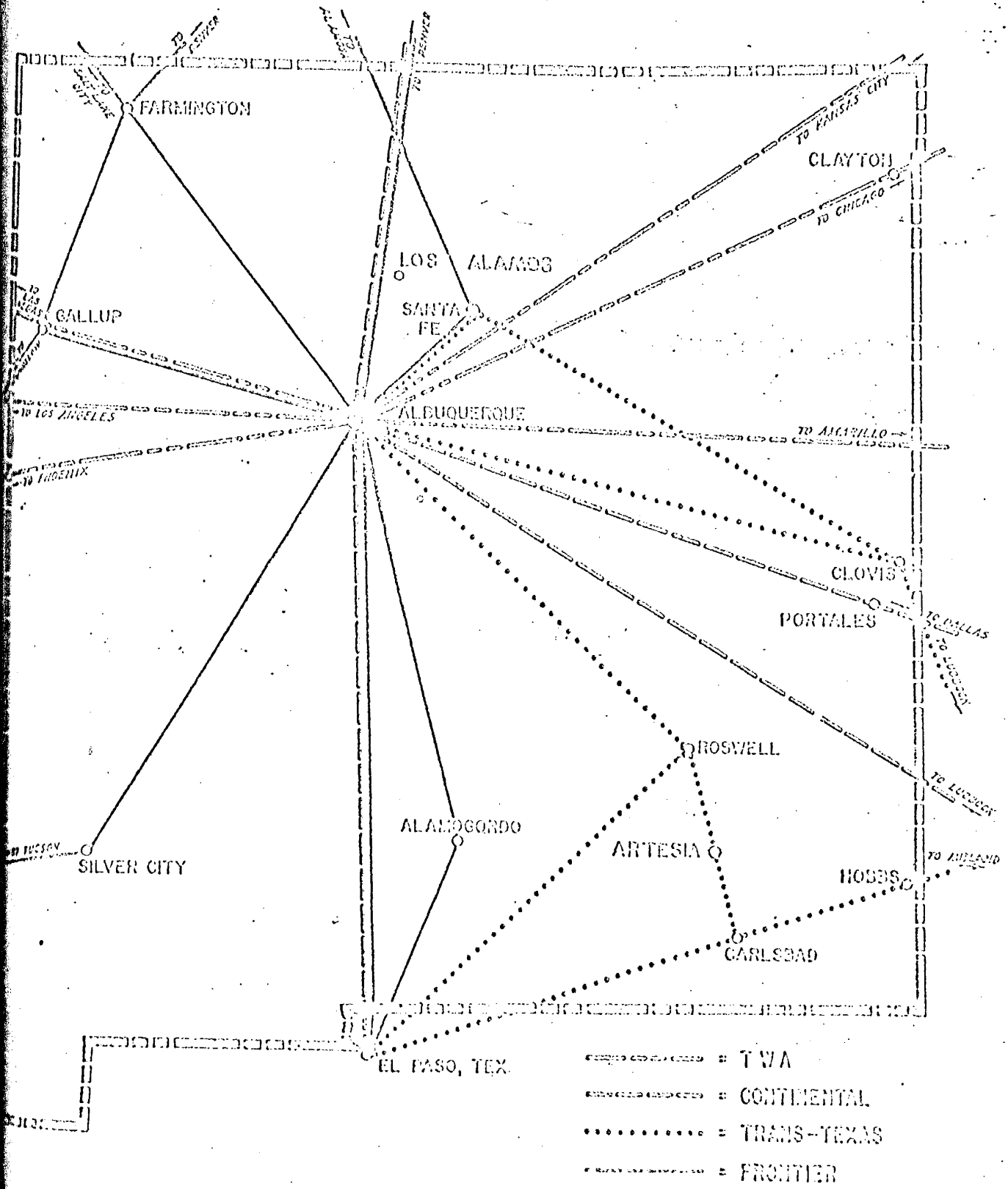


Figure 4

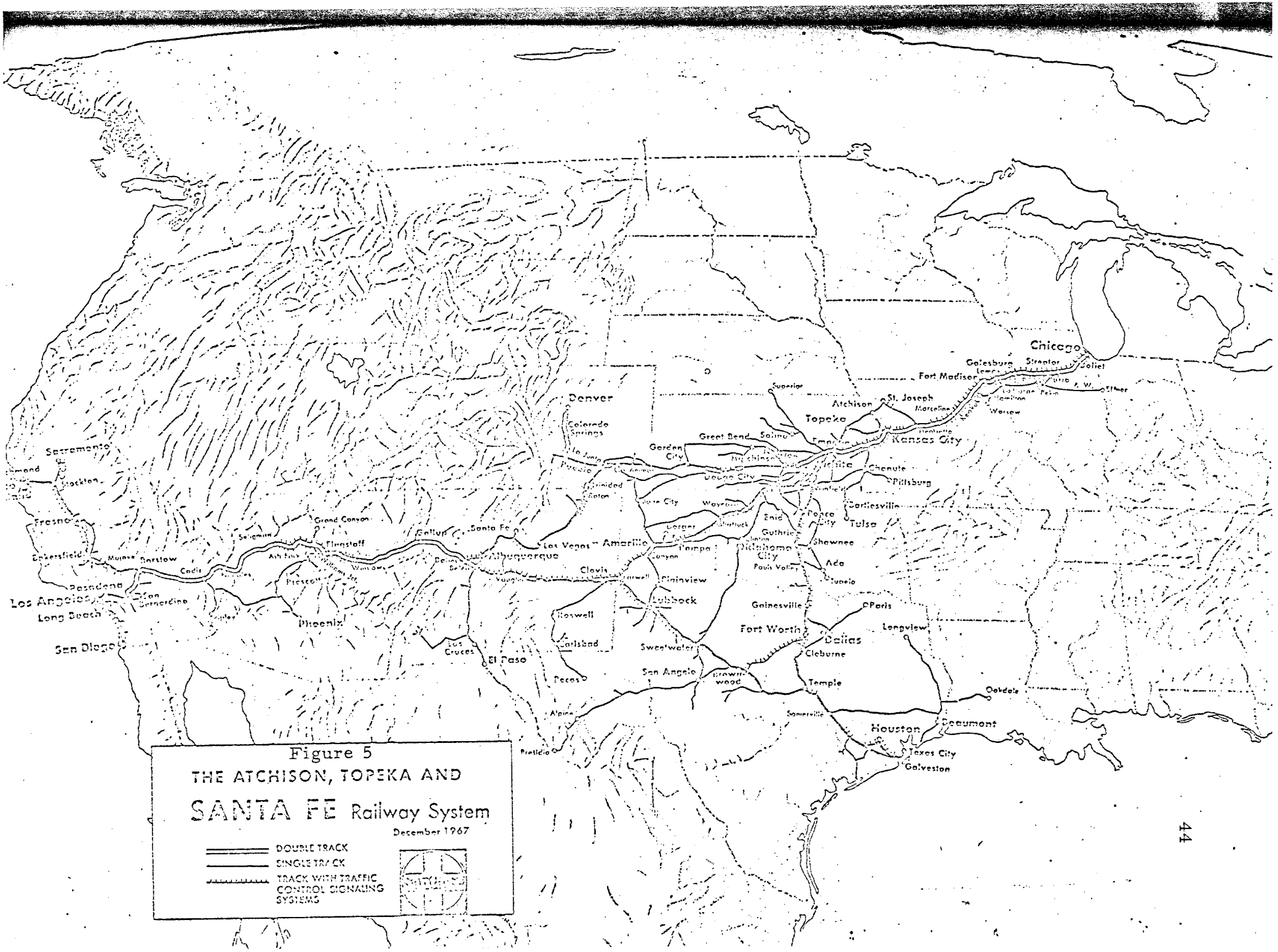


Figure 5

THE ATCHISON, TOPEKA AND

SANTA FE Railway System

December 1967

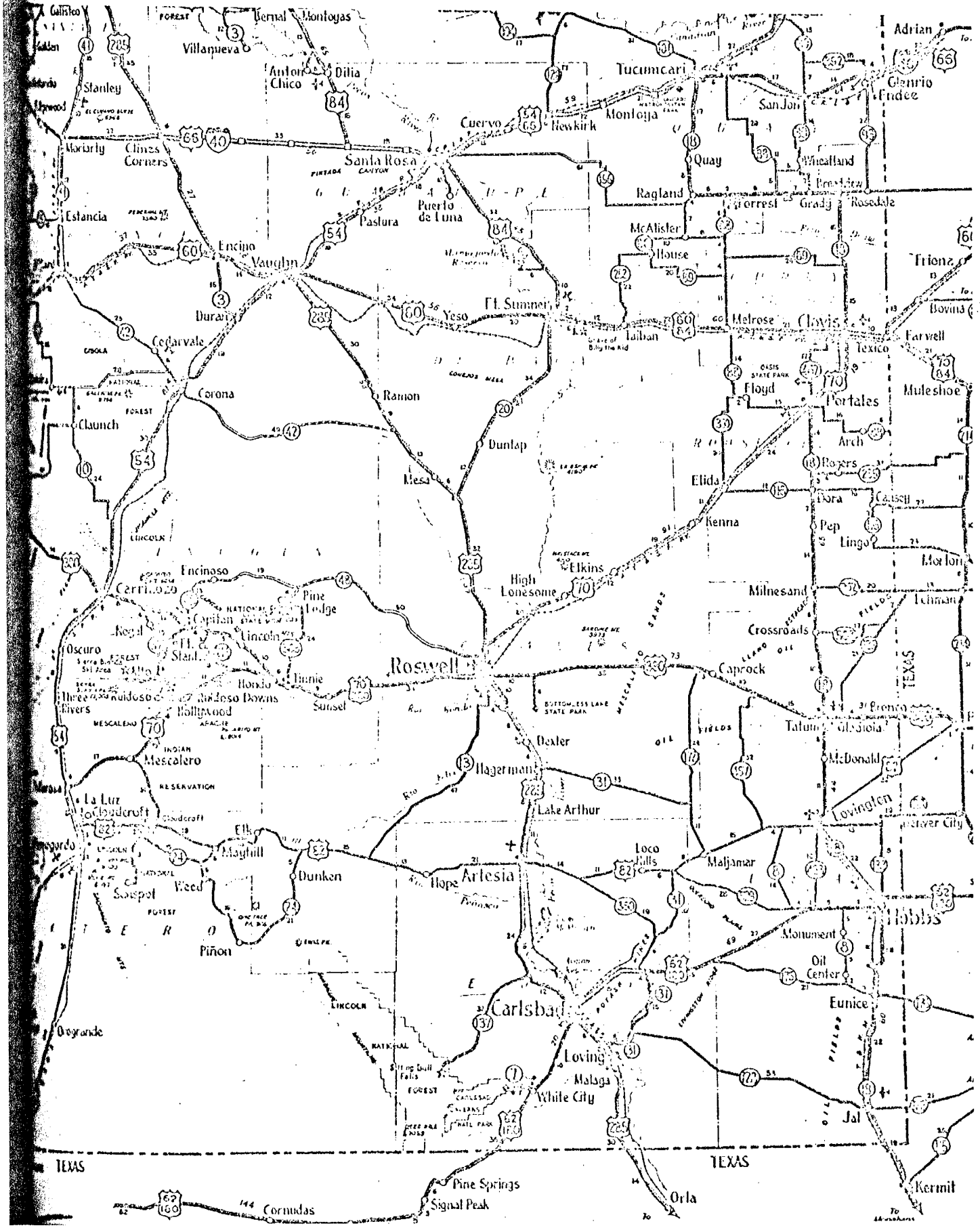
DOUBLE TRACK

SINGLE TRACK

TRACK WITH TRAFFIC CONTROL SIGNALING SYSTEMS

Figure 6

Highway System of the Study Area



Motor freight service for the area is obtained through ICX Trucking lines and Whitfield Freight Lines. Service by trucking lines is as follows:

Overnight to:	El Paso, Texas Amarillo, Texas Lubbock, Texas Clovis, New Mexico
2nd morning to:	Dallas, Texas Denver, Colorado
3rd morning to:	Los Angeles, Calif. Phoenix, Arizona Houston, Texas Kansas City, Missouri St. Louis, Missouri
4th morning to:	Salt Lake City, Utah Chicago, Illinois

Taxes (N. Mex. Mining Assoc., 1968)

The mineral industry in New Mexico is subject to ad valorem, severance, gross receipts, corporate income, unemployment compensation, resources, processors, and service, compensating or use, and the Oil Conservation Commission taxes. In addition to these taxes are New Mexico rents, royalties, bonuses and federal mining lease costs.

The ad valorem taxation is based on local assessment of the value of mineral production and operations and since there is no uniform appraisal manual in use in New Mexico appraised value varies for each individual location.

The severance tax is levied against any mineral industry that mines a natural resource and "severs" it from the ground. The severance is based on the value of the mineral at the place and time it was taken out of the ground or at its first sale point. Tax rates on copper equal .5%, uranium 1%, potash 2.5%, and all others .125%.

New Mexico levies a 3% gross receipts tax on nearly all businesses in the state. Usually this tax is passed on to customers as a sales tax. The major exceptions to this tax rate are firms engaged in mining and related activities (except potash, coal, oil, gas, and liquid hydrocarbons) are taxed at .75%, lumber and lumber manufactures .375%, and alcoholic beverage wholesalers at .50%. The exemptions from the tax are all wholesalers, except those dealing in liquor, and all manufactures with the exception of lumber and mining.

The corporate income tax rate is a flat 3% on the entire taxable income of the corporation. Federal income tax is deductable from gross income.

The resources, processors and service taxes are levied on the mineral industries at the following rates:

Resources tax: Resources Excise Tax is based on the privilege of severing or removing from the ground and (or) processing mineral resources within the state.

Potash - 3%
All other natural resources - .75%
Tax is imposed on the gross value of the resource at the time it is severed.

Processors tax: Tax payed for refining or processing a mineral resource after it has been severed. This tax is generally imposed on the gross value of mineral after processing.

Timber - .375%
All other natural resources - .75%
If operations involve extracting or felling and processing, only the processing rate of service tax applies.

Service tax: The service tax is imposed on an industry that severs and (or) processes a mineral within New Mexico that is owned by someone other than the severer or processor. The tax is applied the same as the resources and processors taxes are.

The mineral industry has voiced dissatisfaction with the taxing system and structure of the state of New Mexico. A committee has been organized by the state to determine what steps can be taken to improve the taxing structure and improve the industrial atmosphere in New Mexico. The following was taken from a statement of opinion on taxes and tax structure from the New Mexico Mining Association submitted to the committee.

> It is our position that in so far as the mining industry is concerned, it is already paying a proportionate share of the taxes imposed on corporate taxpayers within the state, and that above and beyond the general taxes imposed on other corporate taxpayers, the natural resources industry is exclusively subject to the severance and Resources Excise Tax.

Within the statement of opinion there are recommendations for revision which indicate various tax inequities that the New Mexico Mining Association believes are being imposed on the mineral industry in New Mexico.

Utilities

Electricity

The major supplier of electric power in the study region is Southwestern Public Service Company (S. P. S. C.). In addition, New Mexico Electric Service Company, Central Valley Electric Cooperative, Inc., and Lea County Electric Cooperative, Inc. also distribute electric power to consumers. Rates and distribution of S. P. S. C. are used to illustrate cost and location of available power. Figure 7 is a detailed map of the territory served in New Mexico. The latest tariff in effect by the S. P. S. C. under large general service classification is illustrated in Figure 8 and Figure 9.

The future for electric generation in southeastern New Mexico is promising. All major generation plants use natural gas for electric generation and company officials seem to believe that natural gas will continue to be used even with increasing availability of nuclear generation.* The advantages of using natural gas are obvious in that S. P. S. C.'s generating stations are right in the midst of one of the largest natural

---

*In a discussion with S. P. S. C. officials the various forms of power generation were discussed and the only future promise other than natural gas that was considered is the possible advent of feasible geothermal application to electric generation. S. P. S. C. expressed the view that they would continue using natural gas for generation into the twenty-first century. Even if the major Permian Basin gas fields play out, the company anticipates there will always be enough natural gas for electric generation purposes for an indefinite period of time.

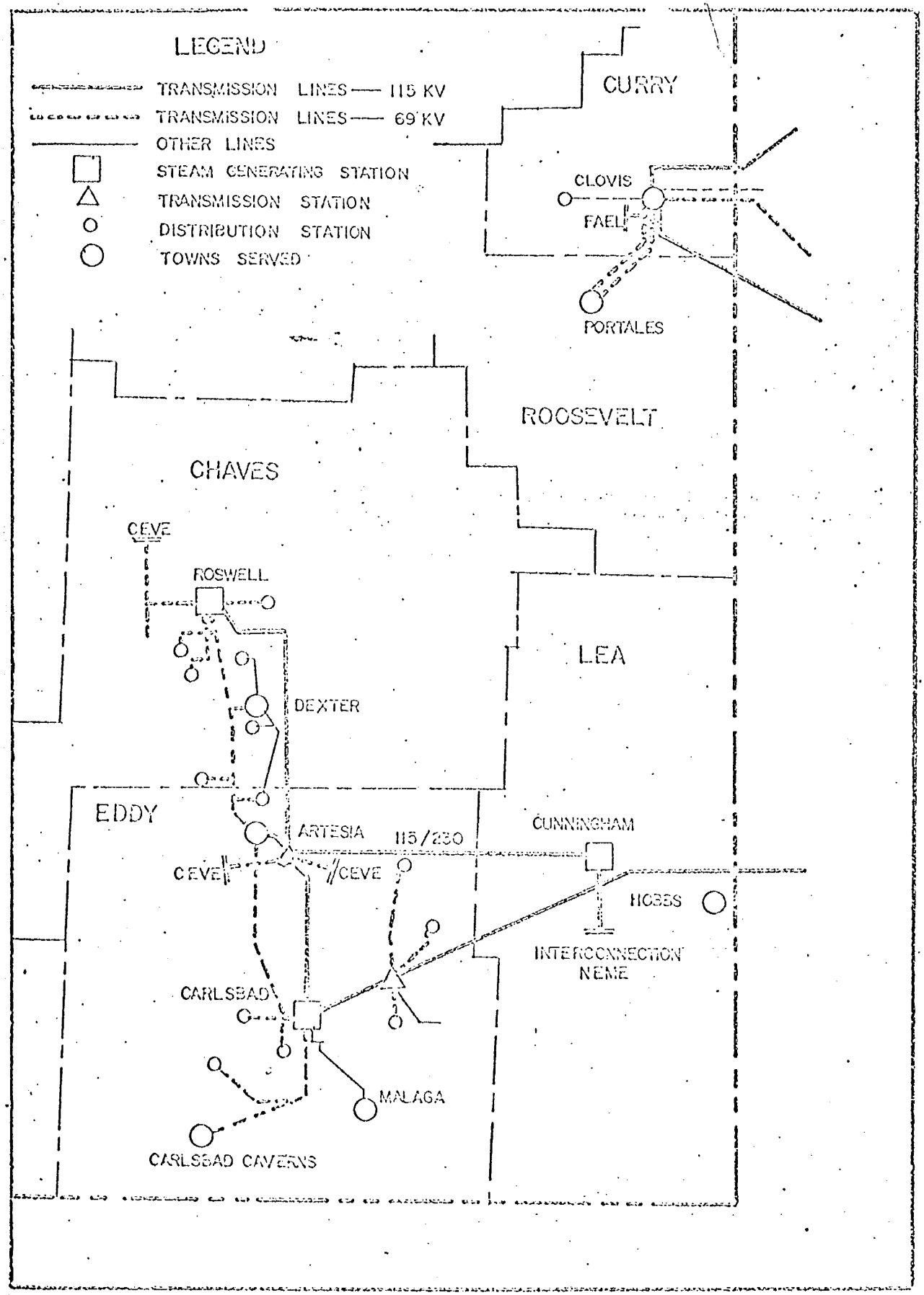

LEGEND
TRANSMISSION LINES — 115 KV
TRANSMISSION LINES — 69 KV
OTHER LINES
STEAM GENERATING STATION
TRANSMISSION STATION
DISTRIBUTION STATION
TOWNS SERVED
CURRY
CLOVIS
FAEL
PORTALES
ROOSEVELT
CHAVES
CEVE
ROSWELL
LEA
DEXTER
EDDY
ARTESIA
115/230
CUNNINGHAM
CEVE
CEVE
HOBBS
INTERCONNECTION
NEME
CARLSBAD
MALAGA
CARLSBAD CAVERNS

Figure 7

Figure 8
Southwestern *PUBLIC SERVICE* Company
Tariff Schedule

COMMISSION	SCHEDULE	SHEET	RATE SCHEDULE NUMBER
New Mexico	Tariff 4100.10	Revised 392	128

LARGE GENERAL SERVICE

TARIFF NUMBER	4100.15
CANCELLING	

APPLICABLE: To all commercial and industrial electric service supplied at one point of delivery; and measured through one kilowatt-hour meter, where facilities of adequate capacity and suitable voltage are adjacent to the premises to be served.

Not applicable to temporary, breakdown, standby, supplementary, resale or shared service, or to service for which a specific rate schedule is provided.

TERRITORY: All towns served by the Company in New Mexico and all towns in Texas except Crosbyton, Floydada and Lubbock.

RATE: Demand Charge: $370.00 for the first 200 kw, or less, of demand per month.
$ 1.25 per kw for all additional kw of demand per month.

Energy Charge: .80¢ per kwh for the first 230 kwh used per month per kw of demand, or the first 120,000 kwh used per month, whichever is greater.
.55¢ per kwh for the next 230 kwh used per month per kw of demand.
.45¢ per kwh for all additional kwh used per month.

DETERMINATION OF DEMAND: The kw determined from Company's demand meter for the 30-minute period of customer's greatest kw use during the month, but not less than 60% of the highest demand established in the preceding eleven months.

PRIMARY SERVICE DISCOUNT: A discount of 3% will be allowed when service is supplied at a line voltage of 13 kv, or greater, and no transformation is made by the Company at the customer's location.

POWER FACTOR ADJUSTMENT: Bills computed under the above rate will be increased $0.25 for each kvar by which the reactive demand exceeds, numerically, 0.53 times the measured kw demand, and will be reduced $0.25 for each kvar by which the reactive demand is less than, numerically, 0.40 times the measured kw demand.

FUEL COST ADJUSTMENT: The net charge per kilowatt hour of the above rate shall be increased or decreased 0.0065¢ per kwh for each 0.5¢ increase or decrease, or major fraction thereof, in the delivered cost of gas at all of the Company's steam-electric and gas turbine generating stations above or below 18.5¢ per thousand cubic feet during the second preceding month.

(Continued)

Effective Dates 10-1-67 to 12-6-67 Approved

TAX ADJUSTMENT: Billings under this schedule may be increased by an amount equal to the sum of the taxes payable under federal, state and local sales tax acts, and of all additional taxes, fees, or charges, (exclusive of ad valorem, state and federal income taxes) payable by the utility and levied or assessed by any governmental authority on the public utility services rendered, or on the right or privilege of rendering the service, or on any object or event incidental to the rendition of the service, as the result of any new or amended laws after June 1, 1965.

TYPE OF SERVICE: A-C; 60 cycles; at one available standard voltage.

CONTRACT PERIOD: A period of not less than one year.

MINIMUM CHARGE: The Demand Charge.

gas production areas in the United States and also this source is considered to have a long reserve capacity.* Hydroelectric generation is not very feasible due to the lack of available water and the lack of geographically suitable area for installation of such a generating plant. Solar generation has not advanced to the point where economic generation on any large scale can be obtained.

Nuclear generation is not practical at this time as large scale economies can only be gained by installation of a very large capacity station which for the next 30 years or more does not look practical when compared with generation costs using natural gas. There are other problems involving nuclear generation such as contamination of the surrounding environment which may not make nuclear generation very desirable with present technology.

Generation of electricity using other forms of fossil fuel would at present not be as profitable as natural gas.** There is one possibility which has not been discussed yet and that is the possibility of geothermal generation. This process is still in the research and development stage

---

*Figures produced by the Oil and Gas Journal indicate at the present rate of usage and with known reserves in New Mexico, the life expectancy of the natural gas in the state is about 16 years. New reserves are being found periodically so the reserves can continue to increase for some time.

**Research is underway to convert coal into other fuels such as oil, gas, and natural gas, but at present it is only in the research stage of production.

and as such can not be thoroughly evaluated at present. Geothermal applications to energy production do look promising for future thought. Within the next decade it should be known how feasible such applications will be.

In the future there should continue to be adequate reasonable-cost power for any need in southeastern New Mexico. Continued expansion may make the area under study one in which power costs are as inexpensive as anywhere within the United States.

Natural Gas*

Southern Union Gas Company supplies most of the natural gas for southeastern New Mexico, and therefore the industrial rates for this company are presented as being a standard.

There are two bases upon which industrial gas rates are established in southeastern New Mexico. The first is in the competitive situation which is uncommon. Under these circumstances different companies compete for the market with open price competition to secure business. In the second case, large volume industrial markets are ordinarily quoted on the basis of cost plus a certain profit margin. In Eddy and Lea Counties, rates established prior to 1965 were conducted on the basis of cost of gas at the well-head with transportation cost plus

---

*The majority of the information obtained for this section was gained by conversation with Mr. James Wyman, District Manager, Pecos Valley District, Southern Union Gas Company.

taxes and other considerations and necessary profit margins. In 1965 the industries generally requested firm rates for the period of the negotiated contract and these have taken the form of a base rate during the first year of the contract with annual three mill escalations.

Under the contracts in effect prior to 1965 the rate was essentially 20.5¢ per million btu in which case specific gravity and califeric content were integral considerations. Since that time, the rates have escalated from a low of 18.0¢ per million btu at 3 mills per annum so that the rate in 1968 is 18.9¢ and will continue to escalate at 3 mills annually until the first of January, 1972.

There are other independent suppliers in the area, but none of these serve more than one industrial customer for fear of being classed as a public utility and therefore being subject to public regulation.

The April 1968 Supreme Court decision on the Federal Power Commission's Permian Basin rate ruling upheld the authority of the F. P. C. to fix maximum rates for the sale of natural gas to pipelines on an area basis rather than company-by company basis. The decision affects specifically the Permian Basin fields of west Texas and southeast New Mexico. It will mean rate reductions plus refunds with interest going back to 1965. Justice John M. Harlan delivering the decision traced the field price situation in the Permian Basin and cited significant increases based partly on relatively inelastic supply and steeply rising demand (Albuquerque Journal, 1968, front page).

The state of New Mexico will have to make rate refunds as a result of the Permian Basin Natural Gas Case. The Oil and Gas Commission indicated that New Mexico will have to return $2,200,000 in tax refunds and return royalty payments amounting to about $2,400,000 (Albuquerque Journal, 1968, p. A-1).

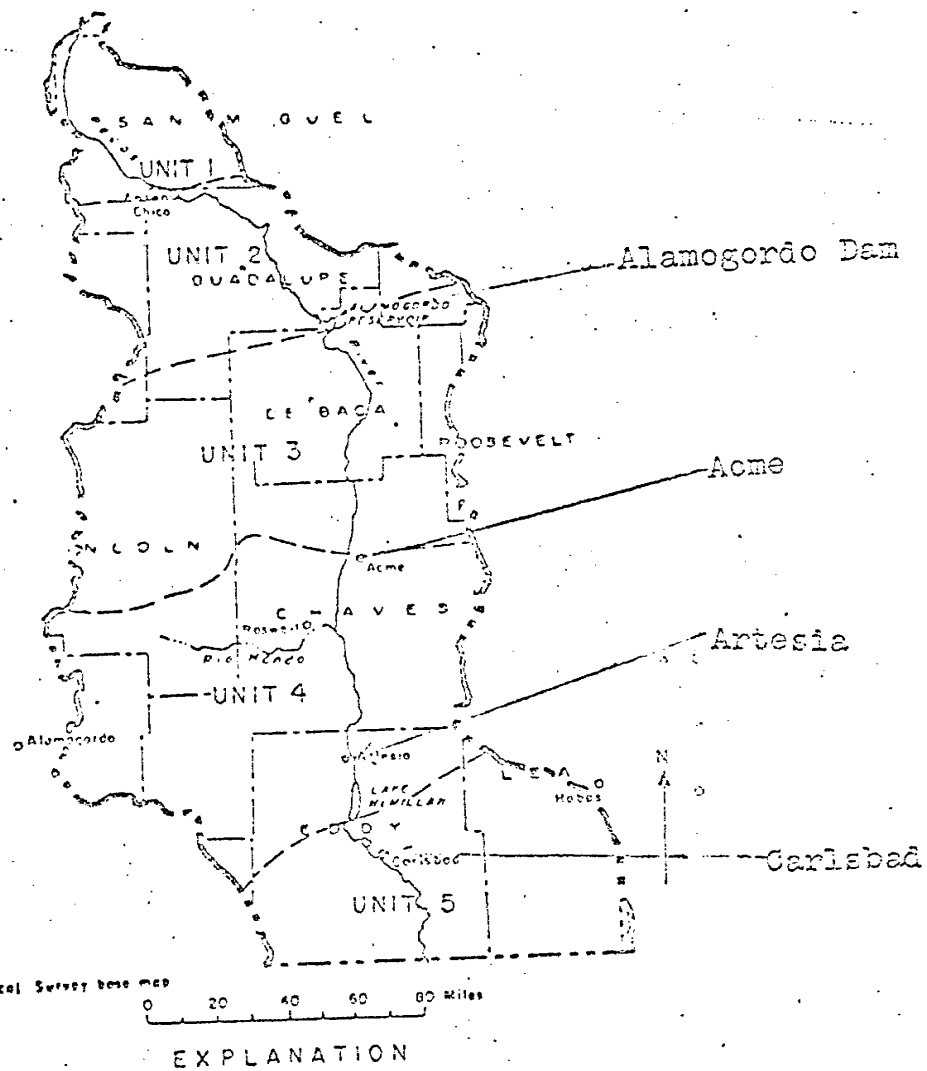
Water Availability, Rates and Quality

The question of obtaining a supply of water in the Pecos River Valley is a problem which faces any industry which enters southeastern New Mexico. There are large quantities of water in use for irrigation of farm land and crops, but some sources indicate there is a lack of unappropriated water for industrial use. In 1942, the National Resources Planning Board reported that the water from the Pecos River had been fully appropriated for use in New Mexico and Texas (Sorensen, 1965, p. 49). Due to the appropriation of the surface waters in the Pecos, there has been an ever increasing reliance on subsurface withdrawal of water supply.

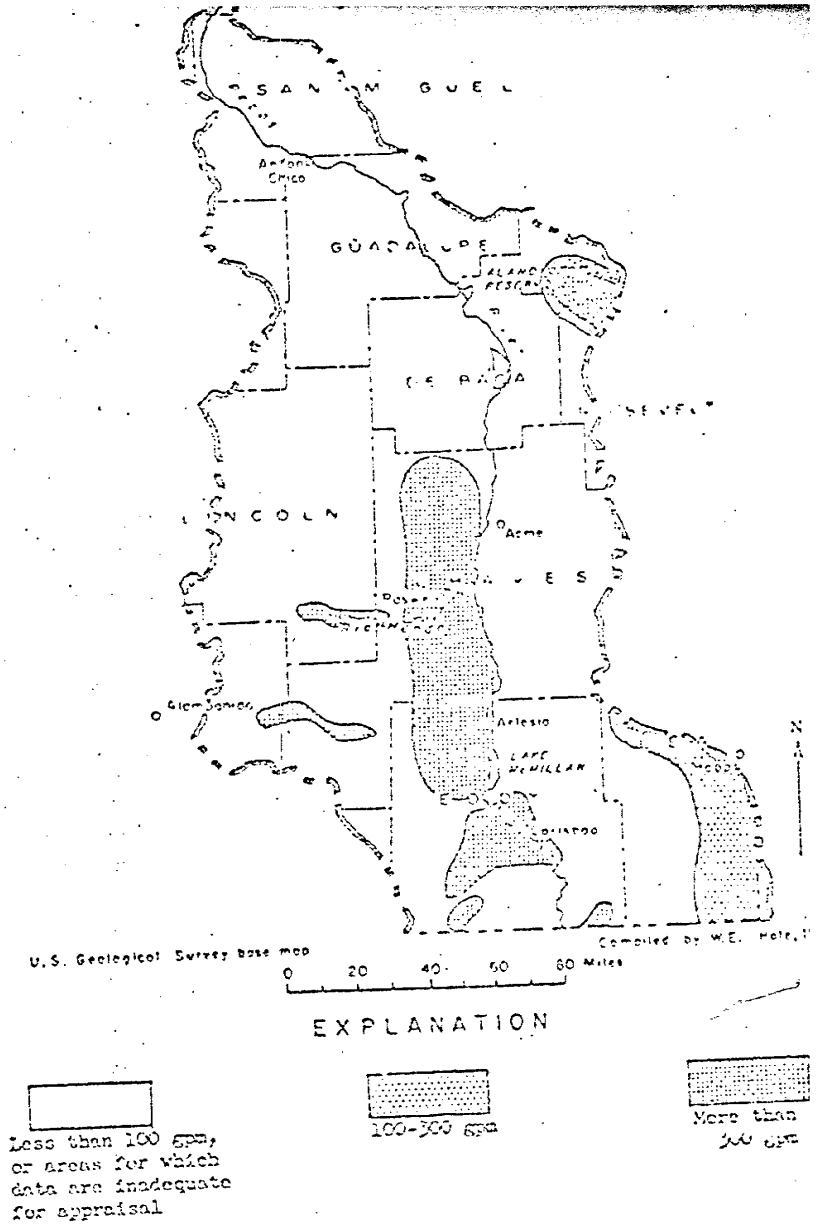
Water can be obtained by industries that have a need for large quantities of water. With proper arrangements with the state engineer an industry could develop its own water supply (General Telephone Company of the Southwest, 1967). The amount of water available would be determined by the amount of water obtainable from wells drilled in a given area, which would vary from location to location.

The main question facing industry moving into the study region is not one of appropriation, but one of the cost of developing individual water supplies. Cities like Carlsbad, New Mexico have developed municipal water sources that can be used by industries. Carlsbad owns seven wells with a peak hourly capacity of 900,000 gallons. Total daily capacity for processing and pumping is 22 million gallons. The peak usage of 15,750,000 gallons per day was recorded July 17, 1965 (General Telephone Company of the Southwest, 1967). Well depth in Carlsbad varies from 650 to 950 feet. Additional capacity from 3 wells drilled and ready to equip can develop up to 1,200,000 gph. The fees consist of the connection policy, tap fee plus $15 deposit for all customers residential, commercial or industrial. The water rates in Carlsbad are three dollars for the first 3,000 gallons and from March 15 to September 15, fifteen cents per thousand gallons over 3,000 gallons and in all other months twenty cents per 1,000 gallons over 3,000 gallons.

Even if the cost is not prohibitive, water quality may be a deterrent in certain areas of southeastern New Mexico. Also, water availability in certain areas within the Pecos Valley may be limited for certain types of industry. For a general idea of cost for a privately owned water source, Figures 10 and 11 indicate potential yields, salinity and depth to ground water below land surface. At present the only source available to an incoming industry that wished a private supply would be well water and this source is considerably more expensive than appropriation water from a river source(Maddox, 1965).

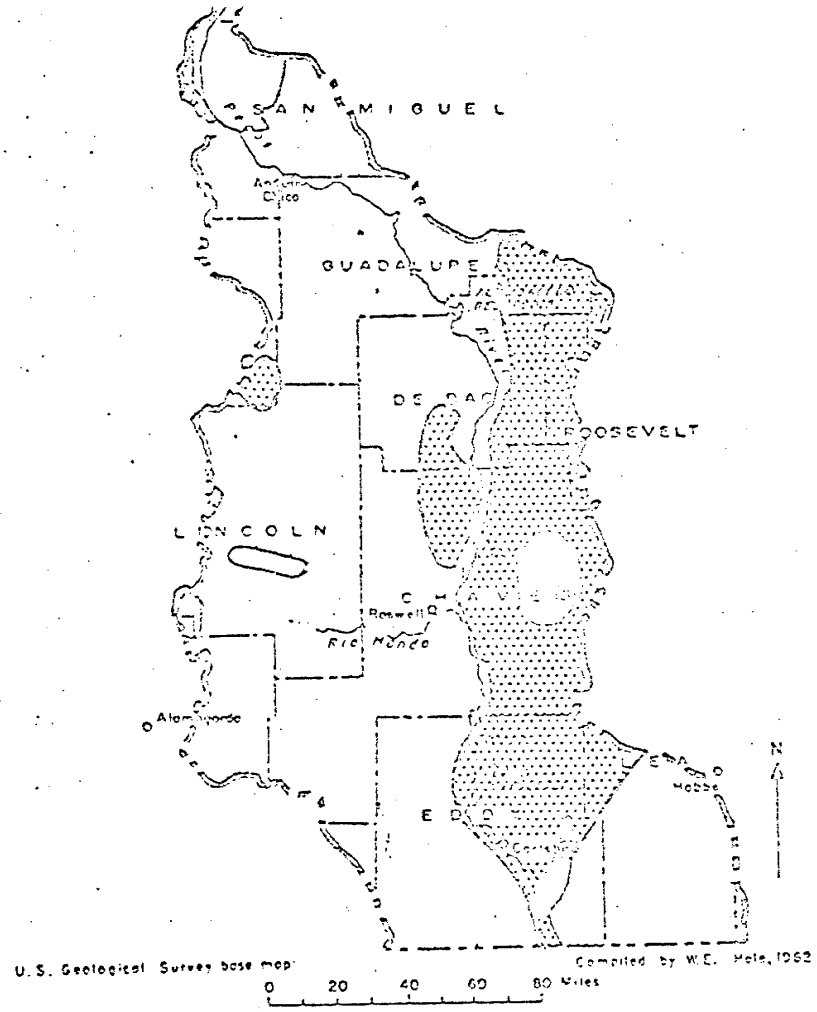


Principal Ground Water Units

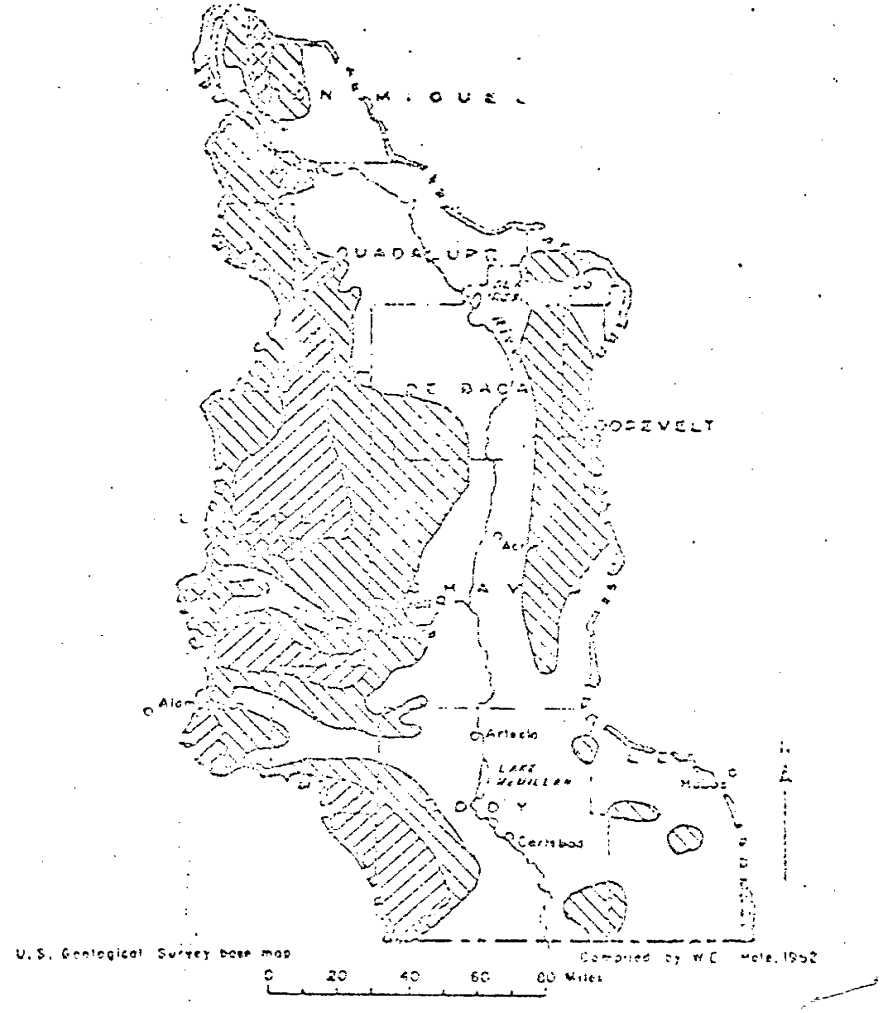


Potential Yield of Wells

Figure 10
Principal Ground-water Units and Potential Yield of Wells



Salinity of Ground Water



Depth to Ground Water Below Land Surface

Figure 11
Salinity of Ground Water and Depth to Ground Water Below Land Surface

Labor Market

The total civilian work force in New Mexico as of May, 1968 was approximately 359,400 with an unemployment at 4.9 per cent or 17,500. Of this total 277,600 were nonfarm wage and salary employees. Table 24 summarizes the employment situation for major cities in the study area (Employment Security Commission of New Mexico, 1968).

TABLE 24. EMPLOYMENT STATISTICS FOR MAJOR CITIES IN THE STUDY AREA

	Artesia	Carlsbad	Hobbs	Lovington	Roswell
Total	229	706	457	107	874
Tech. & Managerial	8	27	21	1	77
Clerical	30	57	64	10	77
Sales	16	34	38	2	57
Domestic Service*	13	31	21	6	54
Farming & Forestry	26	60	46	10	141
Processing	24	12	6	2	24
Machine Trades	4	56	4	3	9
Bench Work	7	50	8	0	10
Structural	1	2	5	1	16
Work	24	128	38	5	93
Misc.	32	178	31	11	83
Entry	44	76	175	56	233

*Except Domestic

The closing of U. S. Borax and Chemicals Corporation in Eddy County in 1967 and layoffs of workers at two other potash mines represented

a reduction of over 1,100 workers at the potash mines, which accounted for a payroll reduction of about two million dollars (New Mexico Business, 1968, p. 59).

The final closing of Walker Air Force Base in Chaves County occurred early in 1968. There was a reduction of some 5,000 employees both federal and civilian at the base between the years of 1966 and 1968.

In the study region there was an overall downward trend in employment from 1960 to 1966. Chaves, Eddy and Lea Counties experienced an overall decrease of 7.9%, 4.4%, and 3.6% respectively, in total employment. Table 25 (DeBerry and Edgel, 1968) illustrates the change in employment from 1960 to 1966 broken down into various working classes.

TABLE 25. PERCENTAGE BREAKDOWN OF CHANGING EMPLOYMENT IN THE STUDY REGION FROM 1960 TO 1966

	Chaves	Eddy	Lea
Total Employment	- 7.9	- 4.4	- 3.6
Agricultural	-39.8	-39.9	-39.4
Nonagricultural	- 4.3	0.1	- 0.5
Self-employment	1.5	- 2.3	- 3.5
Wages & Salary	- 4.9	0.4	- 0.1
Mining	-21.8	- 2.9	-16.9
Construction	-50.0	-32.2	9.8
Manufacturing	22.7	- 1.5	16.4
Trans & Utilities	13.0	-13.8	- 2.4
Trade	-11.0	2.8	1.8
Fin., Ins. & R.E.	6.3	4.7	11.9
Services & Misc.	12.3	1.2	22.1
Government	- 2.4	28.9	17.5
Federal	-14.3	26.3	44.4
State & Local	44.3	29.3	6.1

The following table gives a comprehensive breakdown of the number employed by class in 1965 and 1966 in the study region.

TABLE 26. NUMBER OF INDIVIDUALS EMPLOYED IN WORKING CLASSES 1965 and 1966*

	Chaves		Eddy		Lea	
	1965	1966	1965	1966	1965	1966
Population	62,000	59,000	53,500	53,000	51,500	51,800
Employment (total)[1, 2]	22,210	20,770	17,170	16,860	20,280	19,990
Agricultural	1,550	1,390	1,330	1,190	1.110	1,000
Nonagricultural	19,660	19,380	15,840	15,670	19,170	18,990
Self-employed[3]	2,030	1,990	1,740	1,710	1,980	1,940
Wage & Salary	17,630	17,390	14,100	13,960	17,190	17,050
Mining	550	430	4,560	4,280	5,380	4,980
Consturction	910	810	790	610	1,030	1,010
Manufacturing	760	920	610	640	500	710
Trans & Utilities	840	870	720	750	2,090	2,050
Trade	3,100	2,990	2,540	2,600	3,410	3,360
Fin., Ins. & R.E.	750	670	460	450	460	470
Services & Misc.	2,740	2,640	2,480	2,490	2,390	2,320
Government[1]	7,980	8,060	1,940	2,140	1,930	2,150
Federal[4]	5,870	5,650	230	240	110	130
State & Local	2,110	2,410	1,710	1,900	1,820	2,020

*Linda L. DeBerry and Ralph L. Edgel, 1968, Income and Employment in New Mexico, 1965-1966, Bur. of Business, Univ. N. Mex.

[1]Includes military personnel stationed in New Mexico.

[2]Includes farm proprietors and self-employed, regularly employed (nonseasonal) unpaid family workers, and wage workers, except seasonally employed Mexican nationals.

[3]Includes regularly employed (nonseasonal) unpaid family workers.

[4]Includes employees of the Los Alamos Scientific Laboratory.

The full impact of the closing of Walker Air Force Base in Chaves County and of the reduction of potash operations Eddy County are not reflected in the above figures.

Future Mineral Industry Prospects

The potash industry and the oil and gas producers have a natural supply momopoly, and thus competition from within the study region or from the state is limited. Until recently the potash operations had a national monopoly in that they produced and sold over 90% of the domestic potash. The oil and gas operations do not quite share the same position that the potash operations did, but do produce about 85% of crude petroleum within New Mexico and over half of the natural gas production.

The demand and supply of petroleum is such that southeastern New Mexico will not lose its market in the near future. If exploration continues finding oil and gas reserves as it has in the past, the supply will last well into the twenty-first century. If competition from within the neighborhood or nation were going to restrict the market for New Mexico petroleum products, it would have already done so. The study region is next door to two of the largest oil and gas producers in the nation. Texas and Oklahoma both produce large portions of the total national production.

Presently Texas has an advantage over New Mexico in that about 90% of New Mexico's crude products are refined in Texas. There are large refineries built in Texas for the prime purpose of refining New Mexico crude. The state of Texas is gaining benefits from the study region that should stay in New Mexico. It has been estimated by refiners in southeastern New

Mexico that another dollar could be added to the value of each barrel of crude oil produced in New Mexico if it were refined within the state. When the value of a barrel of crude oil is approximately $2.75, simple mathematics dictate that an additional one dollar would create an economically healthier climate.

No competition from within the state or general region should effect the potash industry unless a competitively-priced substitute for potash is discovered. Extensive drilling by oil companies through Oklahoma, Texas and southeastern New Mexico have afforded detailed sections of the subsurface which have failed to show other economically feasible supplies at the current price levels. The national potash situation is quite different from what it was in the past. Carlsbad no longer enjoys the monopoly position for domestic potash that it held from the late 1930's to 1960. With potash development in Canada and Utah in conjunction with industry wide overproduction, it will be some time before the potash industry in New Mexico will be able to operate near the full capacity rate which it enjoyed in the early 1960's.

The market for potash is suffering from oversupply. The market is depressed and gives indications of continuing that way for some time. When supply and demand reach a better balance (estimated by Houston Clark, Potash Company of America's Vice President, to be around 1975), the market situation should improve with an estimated domestic demand of 6,000,000 tons of muriate of potash by 1980 (present domestic demand is somewhere in excess of 4,000,000 tons of potash).

Potash is used mainly in fertilizers, but also is used in cement, explosives, glass, chemicals, drugs, soap and many other products. A more complete analysis of the present potash situation is covered later in Section V under Potash Industry.

The research and development information at present regarding future possible developments of other mineral deposits in the study region concerns a Kerr-McGee plant which is extracting elemental sulfur from gypsum. If this plant produces sulfur which is competitively priced with sulfur extracted form sour gas, it would prove very profitable. There is an almost unlimited supply of this rock in the study region, and it would be safe to estimate that there are many billion tons of gypsum rock in Eddy and Chaves Counties alone.

PROBLEM ANALYSIS IN SOUTHEASTERN NEW MEXICO

In the previous sections many problems were encountered which will have an effect on New Mexico's future. This section will be devoted to analyzing four of the problems thought to be of the most signigicance regarding industrial development in New Mexico--Transportation, Potash Industry, Resource Supply, and Water. No attempt is made to actually solve the problems, but they are identified, isolated, and analyzed. Some suggestions are presented for the reader whose interest lies in the future of New Mexico and its problems of industrial development.

Transportation

To make New Mexico transportation facilities attractive to industry in general, improvement will be needed in highway systems, railroad systems and water transportation.

Existing highway systems are too few and too poorly located for the most part. U. S. 66 is the only highway which provides relatively fast transit in the east-west direction through New Mexico. A minimum of three additional such highways would be necessary for convenient transport in the east-west direction through the state.

One highway which could be extended would be U. S. 180 which enters the state from Arizona passes through Lordsburg, Deming, Las Cruces, El Paso, Carlsbad and Hobbs (Figure 12). If this highway were to proceed as it does to Las Cruces then to connect in a direct route to Carlsbad as indicated in red on Figure 12 and then proceed through Hobbs, it would provide a more direct highway system which would be advantageous to commerce and civil defense. In Figure 12 another highway extension is shown which would allow U. S. 60 to proceed east from Socorro, past Gran Quivira National Monument (which is presently difficult to reach using present roads), then on to Clovis. An alternate to the first proposed rerouting of U. S. 60 would be to proceed as shown in Figure 12 from Socorro north of Bingham to Roswell and east. The future system should be modern four lane or greater divided highway with controlled access.

The present Santa Fe Railroad trackage in the state of New Mexico is strongly influenced by the present mineral industry and agriculture in existence. To better serve southeastern New Mexico, expansion of trackage systems into Texas and Oklahoma would be desirable. An example of such an expansion would be to extend a line from Pecos, Texas southeast connecting with the line running from Alpine, Texas to San Angelo, Texas (Figure 13), and would therefore provide a more direct transportation route from the study region to some population centers in Texas.

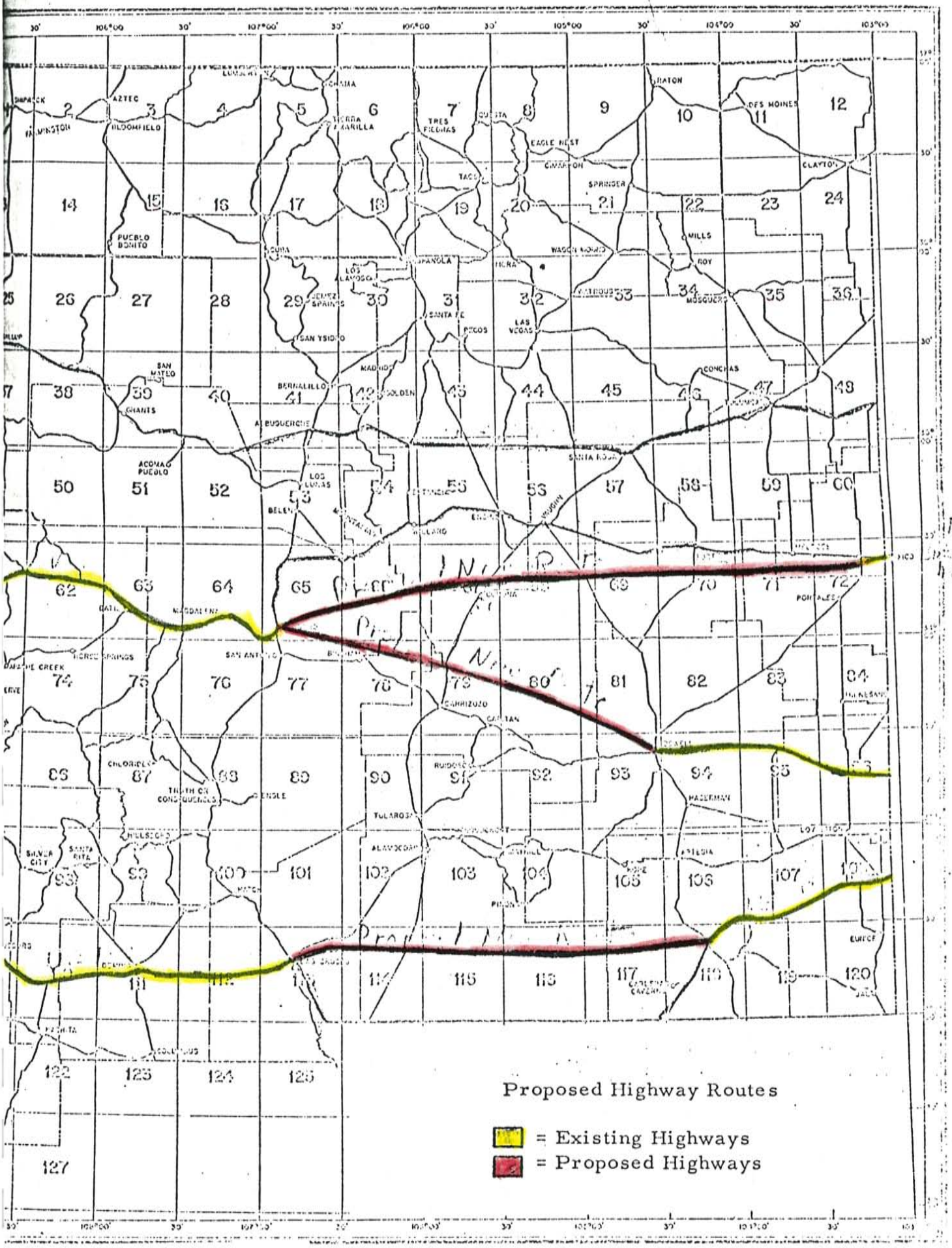
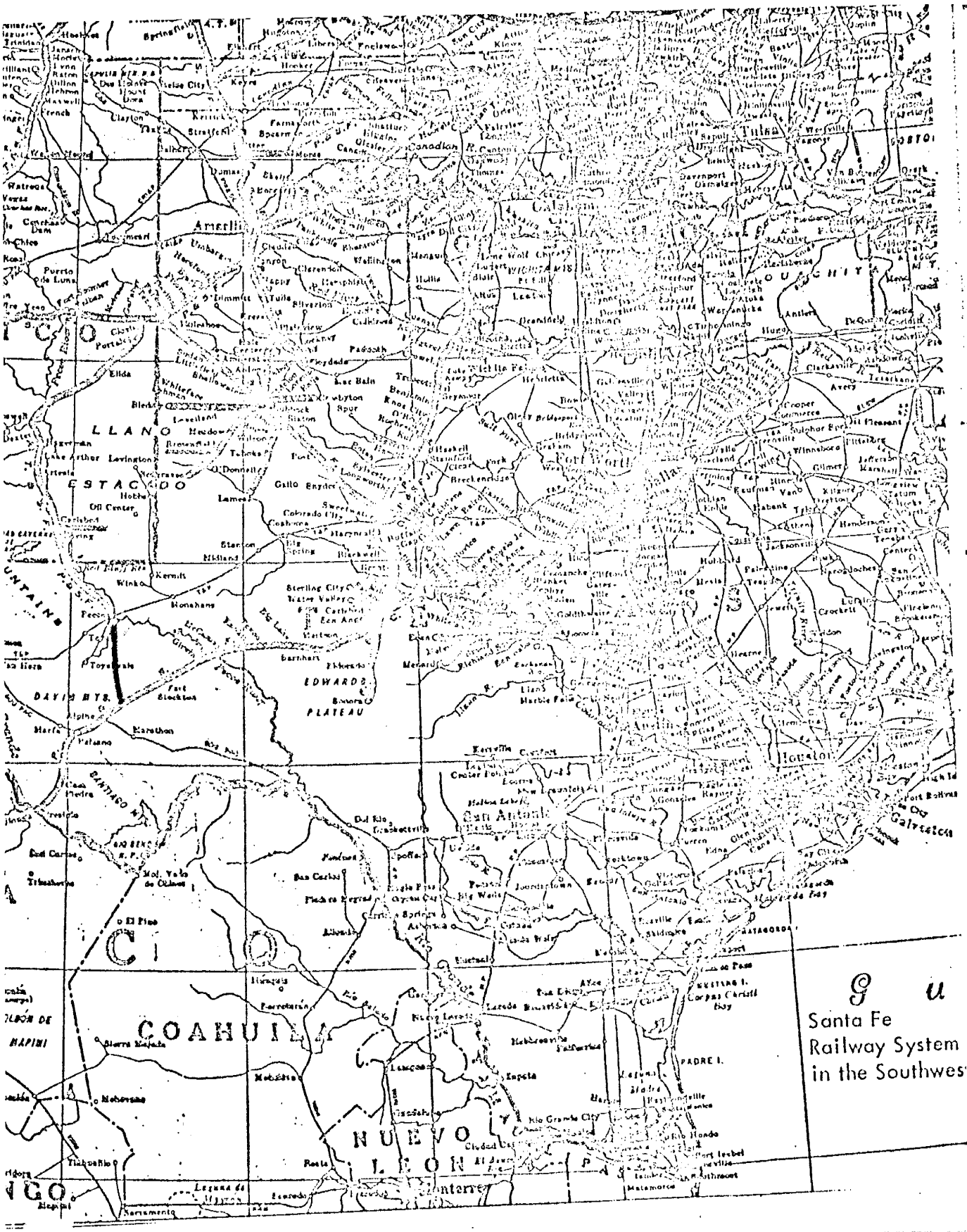

Proposed Highway Routes
= Existing Highways
= Proposed Highways

Figure 13

Proposed Extension of the Santa Fe Railroad



The most important single expansion in transportation facilities in the future of New Mexico may be in the form of water transport. The Arkansas-Verdigris navigation system is scheduled for completion in 1970 (Figure 14). This system will allow barge traffic of large proportions to navigate rivers from Tulsa, Oklahoma to the Gulf of Mexico. This navigation system has an estimated cost of 1.2 billion dollars with Arkansas and Oklahoma sharing equal value of improvements within each state. The benefit to cost ratio for the overall project has been estimated at 1.5 to 1 assuming a capital-life of 100 years and July 1966 price levels. This system will lift river craft 420 feet in 17 stages using a series of dams and locks over a distance of 450 miles. This navigation system will have multiple purposes of flood control, power generation, navigation, water supply and fish and wildlife conservation (U. S. Army Corps of Engineers, 1967).

There is an additional study of navigation by the U. S. Army Corps of Engineers from the Arkansas River through the Eufaula Reservoir to Arcadia near Oklahoma City which has already been conducted. In addition to this there are studies underway which are studying water resources development in the Arkansas River Basin in Colorado and Kansas. This study is also being conducted by the U. S. Army Corps of Engineers and is broken into two parts, the first of which was completed in June,

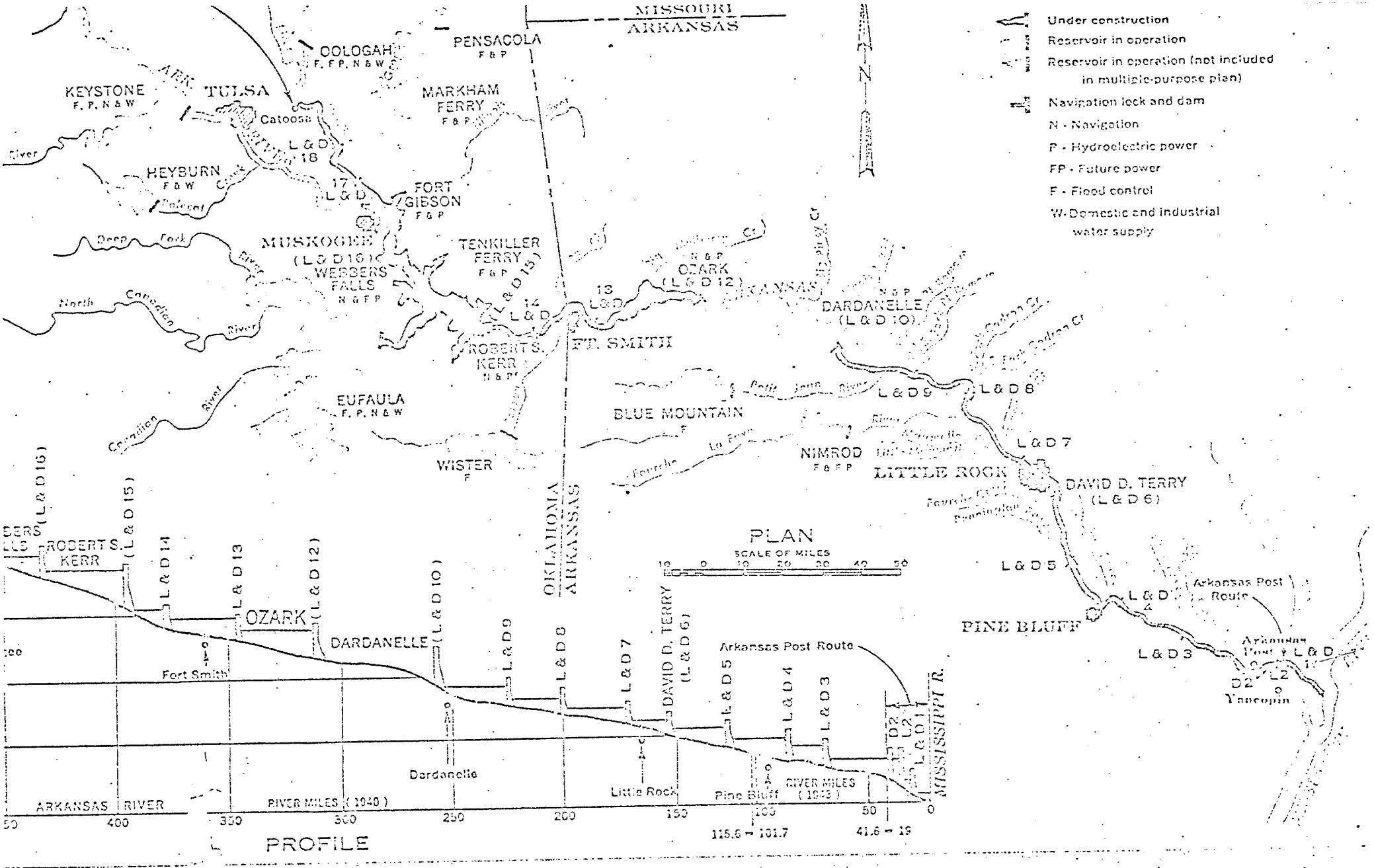


Figure 14

Arkansas-Verdigris Navigation System

1968 and second part is scheduled for completion approximately a year after the first part (Hottenroth, 1968). This present study does not consider navigation as a feasibility study, but it is a fair assumption that it may in the near future.

It is possible that the Arkansas-Verdigris navigation system could be extended into New Mexico. Since plans already in the feasibility stage regarding extension of this system in Oklahoma and possibly Colorado (see Figure 15), it might be advisable if New Mexico legislators requested federal funds to determine the feasibility of extending this system or a similar system into New Mexico.

Increasing air-freight transportation in New Mexico would probably benefit the light industries in the study region and the state. The industries that could benefit the most would be manufactures of high cost (low weight) items such as electrical components.

Potash Industry

> The potash companies in Eddy County, New Mexico along with the entire domestic potash and fertilizer industry is in financial difficulties. Due to an industry-wide over-production large stockpiles of potash are accumulating, and under the pressure from the large surplus, the prices of the principal three constituents of fertilizer, potash, nitrogen, and phosphate, have collapsed (O'Hanlon, 1968, p. 92).

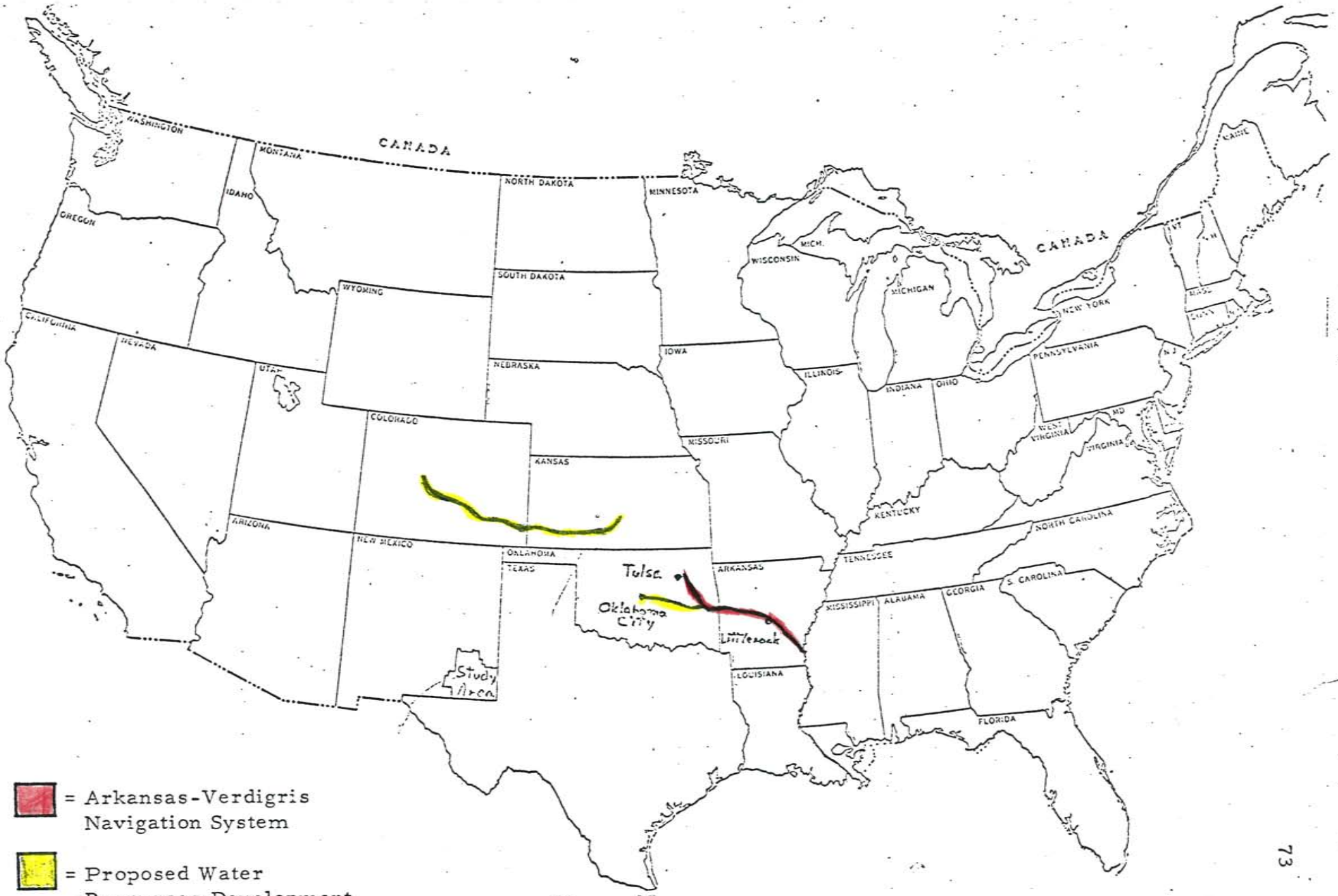


Figure 15
Proposed Water Transport Systems

Due to a lack of adequate market research, many large companies plunged headlong into the fertilizer business, relying on miscalculations that the domestic and foreign markets were ripe for potash and other fertilizer constituents. As it turned out the domestic and foreign markets are not ready for the supply that is now on hand. In fact, indications are that it will be a decade before supply and demand will reach an equitable footing within the United States and Canada.

> The international picture is even more gloomy... economists for the Tennessee Valley Authority estimated that world fertilizer capacity will exceed requirements by 18 million tons in 1970...Much of the new capacity was built to supply export markets. But the lack of foreign exchange, unexpectedly meager purchases by A. I. D., and the sheer inability of underdeveloped nations to transport and market large quantities of fertilizer dashed hopes of huge export sales (O'Hanlon, 1968, p. 92).

The article in Fortune magazine continued to say that the worst is yet to come, that there will continue to be overcapacity and over-capitalization in the fertilizer industry. This will continue until many producers go out of business or are absorbed by other companies. The survivors will be totally integrated companies each of whom will have a substantial share of the market.

What effect this has and will have on the study area can be predicted with a reasonable degree of accuracy. The depressed market and reduced purchases of potash from the Carlsbad operations has certainly damaged

the producers in the area. In a discussion with P. C. A. 's Vice-President, Houston Clark, he indicated that supply and demand would not be in balance until 1975 or later. In a similar discussion with John Wright of U. S. Borax and Chemical Corporation in Carlsbad, it was indicated that production and demand would not be in balance until 1972 or later.

I would say with the available information the 1975 estimate may be an optimistic estimate at best. If companies continue to overproduce due to the enormous capital investments that were made, it may not be until 1980 that the domestic potash market situation can reach equilibrium.

If the potash operations in Carlsbad area are to weather the financial storm, they will have to exist through a decade of low-profit, low-production environment. Capital obsolescence is being accelerated through no fault of the Carlsbad producers. New installation of refining and processing plants was required to continue operations in Eddy County, which required large amounts of capital in equipment which may now become obsolete before the capital can be recovered. The operations that are supported by financially strong companies will probably emerge a little the worse for wear, but nevertheless intact. Other companies not so well blessed with financial reserves may not survive.

Transportation cost is an additional factor that may be adding to industrial potash obsolescence in New Mexico. In discussing transportation costs with Houston Clark of P. C. A., he indicated that to ship a ton of muriate of potash to Chicago doubles the price that could be placed

n the product at the mine refinery. The potash companies are sending otash by rail, which at this time is the most economical carrier transortation available in southeastern New Mexico. If a cheaper transportation ystem could be devised it might give Carlsbad producers the edge needed o survive the storm. Figure 16 shows equal transportation distances relative to the three principal potash production centers in North America. The red lines separate the map into three areas which represent the general competitive advantage of each producer due to transportation cost. There are obvious limitations to this method of determining relative transportation cost, but it does give a general idea of the situation. Water transportation using an inland waterway would offer cost advantages over rail service, but there is no such transportation system at present and there is little likelihood that one will be constructed in time to influence the present problems facing the potash industry.

It is suggested that thought and research be given to the possibility of transporting through pipeline using a potash slurry similar to the coal slurries used in other locations in the country. There are many technical problems involved, but it would seem feasible with all the existing oil and gas pipelines in New Mexico, that one form or another of petroleum product being transported in the existing pipelines would be compatible with potash, and therefore could be used to transport a potash slurry. Recovery would be initiated at a central distribution center or several different distribution centers depending on the amount of capital necessary in a recovery plant.

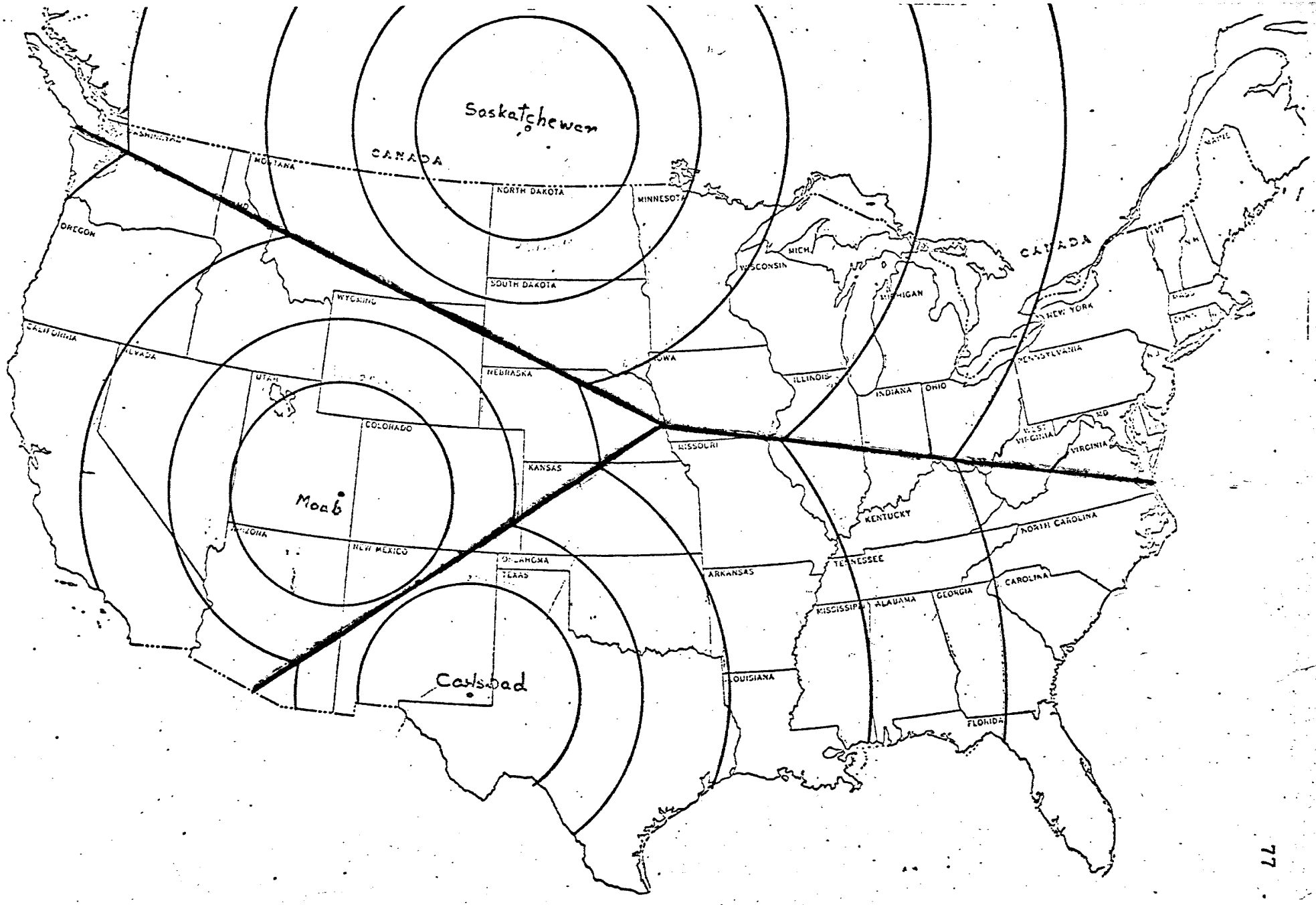


Figure 16

Transportation Distances Relative To The Three Potash Centers in North America

Future Resource Supply

Within the study region the future supply of mineral resources appears to be sufficient for sometime into the future. Table 27 lists production, proved reserves and reserve life index for crude petroleum, natural gas and allied products as of 1967.

TABLE 27. PETROLEUM PRODUCTS PROVED RESERVES, PRODUCTION AND LIFE INDEX*

Year	Product	Production	Proved Reserves	Life Index
1967	C. Petr.	119,241,000 bbls	926 mil. bbls	7.78 years
1967	N. G.	954,839 mcf	15.01 mmcf	15.81 years
1967	Allied P.	46,336,000 bbls	55.7 mil. bbls	11.99 years

*Figures for production found in U. S. Bur. Mines Mineral Yearbooks and proved reserves found in Oil and Gas Journal, June, 1968.

In 1957, using proved reserves and the production rate, the crude petroleum life index was indicated as 8.78 years, and without additional discoveries would indicate that presently there would not be any remaining crude. Yet, there are now almost 100 million bbls more proved reserves of crude oil than were known in 1957. One can see that reserves in the oil and gas industry are not static. It can also be assumed that new discoveries will continue to be made for some time into the future. It would be reasonable to estimate that the supply of petroleum products in southeastern New Mexico will last into the twenty-first century. The potash supply situation in Eddy County is considerably different from the

oil and gas situation in the study area. Most of the reserves are already known that are of economic significance and a change of usable reserves only occurs with improved mining methods or improved refining efficiency. New economic discoveries of potash are not made with any frequency in the study area.

Table 28 lists the approximate known economically-profitable potash reserves in the Carlsbad area of Eddy County for 1965, 1966, and 1967.

TABLE 28. APPROXIMATE RESERVES OF POTASH IN EDDY COUNTY*

Year	Crude sylvite & Langbeinite ores		K_2O Equivalent ores	Production	Life Index reserve
1965	1.5 billion tons	High	166.8 mil-st-tons	2.85 mil-t	H58.5 yr.
		Low	142.7 mil-st-tons		L50.0 yr.
1966	1.5 billion tons	High	164 mil-st-tons	2.95 mil-t	H55.5 yr.
		Low	140 mil-st-tons		L47.5 yr.
1967	1.5 billion tons	High	161 mil-st-tons	2.88**	H56 yr.
		Low	137 mil-st-tons		L48 yr.

*In calculating the reserves in K_2O equivalents, it is stated in the N. Mex. Bur. Mines and Mineral Res., Bull. 87, p. 309, that the average grade of sylvite ore is 17% as of 1965, and that the average grade of langbeinite ore was 9%. After discussing the present situation in 1968 with Houston Clark of P.C.A., 16% K_2O was used as the average grade for the remaining deposits of sylvite. Using these figures in conjunction with the stated mining and refining efficiencies, K_2O equivalent reserves was determined.

**The 1967 figures for potash production were gained through the courtesy of R.B. Stotelmeyer, U.S. Bur. Mines at N. Mex. Inst. Min. and Tech. This is an unpublished figure.

The 1.5 billion ton figure is the crude ore figure including all sylvite and langbeinite, and does not represent the amount of concentrated product ready for sale. Of this amount 1.3 billion tons are sylvite and the remaining .2 billion tons are langbeinite ores. Anticipated mining extraction of 77 to 85% and a refining efficiency of about 85 to 90% were indicated by recent figures. Known deposits of concentrations of carnallite and polyhalite are not included in the above reserves (N. Mex. Inst. Min. and Tech., 1965, pp. 308-309).

Water

Before man lived in the Pecos Valley, nature reached an equilibrium in which total water discharge from the area equalled total water recharge. Man's use of water in southeastern New Mexico upset this balance and began lowering the water table throughout the area. Nature tends to restore this equilibrium, but such has not been the case because of increasing consumption of water.

Conservation of water use and improved crop growing methods will be necessary for agriculture to continue on a large scale.

> Current watershed management research throughout the west shows promise of increasing water yield by manipulating and changing the begetation. Estimates indicate that a savings of 50% or about 32,600 acre-ft of water per year could be obtained by replacing salt cedar with Bermuda grass in the Pecos Valley channel between Artesia and Carlsbad, New Mexico, a distance of 36 miles(Woods, 1965, p. 90).

Aside from the actual problem of availability of water, there was an additional problem of increasing salinity of water recorded for wells in the study area. A large proportion of ground water in Chaves, Eddy, and Lea Counties contain between 3,000 and 10,000 ppm dissolved solids (Figures 17, 18, 19). For many manufacturing applications and human consumption this water would not be satisfactory. There was also a problem of yield in certain areas throughout the study region (Figure 20). An industry requiring large volumes of water for manufacturing purposes or refining purposes might find that there is simply not enough water available at reasonable cost.

Approximately 230,000 acre-ft per year are estimated to be lost as channel losses, evapotranspiration of phreatophytes, evaporation from reservoirs and stock ponds. A more efficient system of transportation and manupulation of vegetation would save a large proportion of the presently lost water. Undating of irrigation methods would allow more efficient crop production and a significant savings in consumption of water.*

---

*A proceeding at the Tenth Annual New Mexico Water Conference, April 1 and 2, 1965.

Figure 17
Chemical Analyses For Pecos River Below Alamogordo Dam And Acme, New Mexico

PECOS RIVER BELOW ALAMOGORDO DAM, N. MEX.

Annual weighted averages of chemical analyses, in parts per million, 1955-1964 water years

Water year	Mean discharge (cfs) / Total discharge	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Calcium, Magnesium	Hardness as $CaCO_3$: Noncarbonate	Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH	Annual load (tons)
1955	180 / 65,700	12		265	39	50		174		720	61		0.7		1,210	1.65	553	829	720	0.8	1,540	7.5	215,300
1956	185 / 66,960	16		360	54	64		174		908	70		.9		1,630	2.22	825	1,120	1,010	.8	1,960	7.5	290,400
1957	164 / 59,440	16		320	37	56		175		859	71		1.5		1,400	1.90	609	950	828	.8	1,660	7.5	221,500
1958	280 / 101,[illegible]	14		270	19	35		127		405	35		.7		741	1.01	602	590	540	.7	1,000	7.5	220,000
1959	175 / 63,140	14		270	33	53		129		717	52		.4		1,210	1.65	565	814	722	.8	1,500	7.5	206,000
1960	157 / 57,460	17		330	37	57		134		855	71		.7		1,450	1.94	606	976	874	.8	1,770	7.5	222,600
1961	222 / 81,460	16		309	35	58		122		820	72		.4		1,430	1.94	861	956	867	.8	1,750	7.6	311,500
1962	182.2 / 66,330	15		319	37	55		135		870	72		.7		1,350	1.89	702	946	844	.8	1,730	7.5	256,300
1963	177 / 64,520	15		335	46	66		120		1,040	87		.2		1,700	2.31	812	1,150	1,050	.8	2,050	7.5	295,700
1964	117 / 42,[illegible]	15		450	55	81		127		1,240	105		1.4		2,020	2.75	638	1,350	1,250	1.0	2,350	7.6	232,800

PECOS RIVER NEAR ACME, N. MEX.

Annual weighted averages of chemical analyses, in parts per million, 1955-1964 water years

Water year	Mean discharge (cfs) / Total discharge	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Calcium, Magnesium	Hardness as $CaCO_3$: Noncarbonate	Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH	Annual load (tons)
1955	210 / 153,000	--		377	--	--		--		--	--		--		1,660	2.26	--	--	--	--	2,130	7.5	434,300
1956	140 / 49,200	17		402	75	229		107		1,160	195		1.9		2,040	2.77	815	1,310	1,210	1.6	2,530	7.5	274,200
1957	140 / 40,530	14		296	54	89		156		941	117		1.5		1,480	2.01	595	950	849	1.2	1,750	7.5	161,400
1958	283 / 101,700	16		254	51	126		145		617	159		1.2		1,260	1.71	920	722	592	2.1	1,690	7.5	365,000
1959	138 / 99,250	19		311	50	155		127		809	204		1.6		1,690	2.30	721	929	878	2.2	2,210	7.8	256,400
1960	278 / 99,000	18		390	42	161		116		1,060	212		1.6		1,950	2.65	1,340	1,120	1,000	2.1	2,470	7.7	482,100
1961	203 / 75,510	17		362	54	165		116		1,050	229		1.3		1,950	2.65	1,100	1,120	1,030	2.1	2,460	7.7	391,300
1962	167 / 60,400	20		351	48	115		136		954	149		1.3		1,700	2.31	769	1,070	961	1.5	2,170	7.8	285,400
1963	164 / 59,[illegible]	16		374	56	122		122		1,270	156		.8		1,850	2.53	824	1,160	1,050	1.6	2,290	7.5	300,600
1964	[illegible] / 60,[illegible]	17		510	77	150		122		1,470	224		1.4		2,500	3.40	593	1,570	1,470	1.7	2,990	7.6	140,300

Annual weighted averages of chemical analyses, in parts per million, 1955-1964 water years

Water year	Mean discharge (cfs) / Total discharge	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Calcium, Magnesium	Hardness as $CaCO_3$: Noncarbonate	Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH	Annual load (tons)
1955	344 / 249,100	24		397	89	361		142		1,110	552		--		2,550	3.51	3,090	1,300	1,150	4.4	3,450	7.5	2,127,000
1956	182 / 66,430	18		458	119	466		220		1,440	720		--		3,290	4.47	1,602	1,630	1,500	5.0	4,270	7.5	599,500
1957	115 / 41,750	20		405	94	401		157		1,200	624		--		2,840	3.86	958	1,400	1,270	4.7	3,720	7.5	341,600
1958	316 / 115,300	19		333	91	222		149		994	348		7.2		1,860	2.55	1,590	950	868	3.1	2,560	7.7	573,400
1959	152 / 55,510	19		302	92	367		141		1,160	602		3.0		2,782	3.78	1,210	1,150	1,240	4.7	3,760	7.7	475,600
1960	159 / 57,959	19		430	70	330		128		1,270	494		2.6		2,700	3.67	1,060	1,410	1,350	3.8	3,510	7.7	513,900
1961	147 / 53,655	19		434	92	377		150		1,300	580		3.1		2,900	3.94	1,730	1,490	1,310	4.2	3,880	7.7	615,600
1962	150.5 / 54,918	17		420	76	352		136		1,190	535		0.3		2,670	3.56	1,750	1,360	1,730	3.5	3,540	7.5	455,000
1963	147 / 53,645	17		459	92	377		145		1,360	576		1.8		2,960	4.03	1,220	1,500	1,400	4.2	3,900	7.5	432,000
1964	64.8 / 23,715	17		543	103	543		147		1,650	894		3.0		3,810	5.18	702	1,800	1,740	5.5	5,050	7.5	243,700

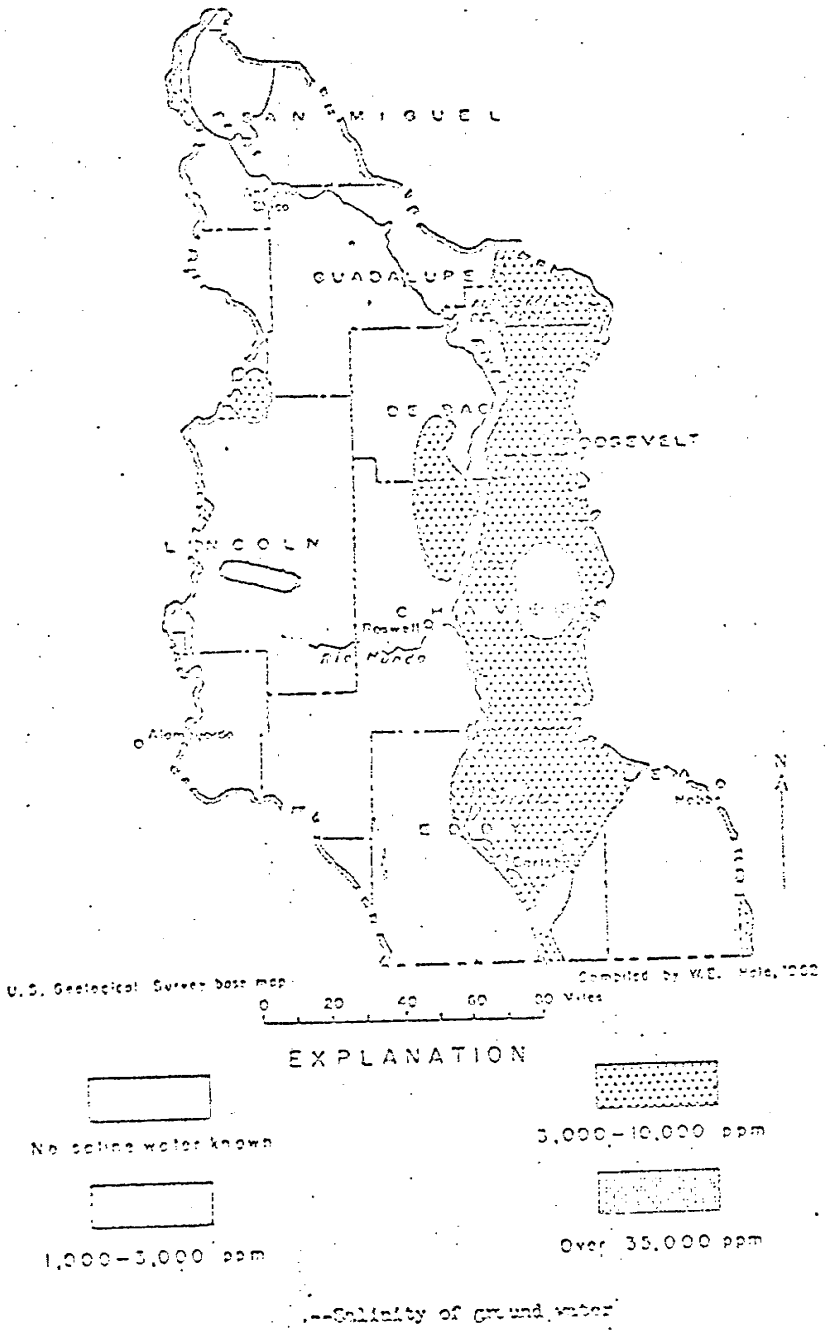
PECOS RIVER AT CARLSBAD, N. MEX.

Annual weighted averages of chemical analyses, in parts per million, 1955-1964 water years

Water year	Mean discharge (cfs) / Total discharge	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Calcium, Magnesium	Hardness as $CaCO_3$: Noncarbonate	Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH	Annual load (tons)
a 1955	348 / 252,000	--		--	--	--		--		--	--		--		b 1,820	b 1.65	---	--	--	--	2,750	7.7	1,410,000
1956	95.1 / 34,670	17		364	89	246		134		1,090	391		2.1		2,670	3.10	575	1,270	1,260	3.0	3,680	7.7	309,600
1957	73.5 / 26,800	20		349	116	320		159		1,190	510		2.2		2,510	3.41	273	1,350	1,210	3.7	3,460	7.8	63,000
1958	219 / 79,943	21		329	76	257		151		992	382		1.5		2,130	2.90	661	1,130	1,010	3.3	2,920	7.6	240,500
1959	78.9 / 28,800	19		396	102	347		148		1,250	525		2.6		2,700	3.67	531	1,410	1,270	4.0	3,580	7.7	193,600
1960	72.2 / 26,360	16		370	64	205		124		1,050	308		2.5		2,100	2.85	449	1,150	1,000	2.6	2,790	7.6	161,100
1961	74.7 / 27,271	16		443	113	303		153		1,330	622		2.9		3,040	4.13	568	1,530	1,440	4.3	4,090	7.7	224,300
1962	26.9 / 9,800	20		366	106	314		157		1,190	511		4.7		2,550	3.44	270	1,350	1,200	3.7	3,470	7.5	68,130
1963	79.5 / 29,010	17		311	99	266		172		972	426		3.4		2,160	2.95	150	1,170	1,030	3.4	3,010	7.6	54,700
1964	35.7 / 13,033	19		362	115	329		183		1,140	514		4.4		2,570	3.50	126	1,330	1,230	3.7	3,550	7.6	46,500

a Published averages not computed because period of missing record represents 5.4% of runoff (19 days of high flow in October).
b Estimated on the basis that ppm U.S. equals specific conductance (micromhos) times 0.70.

Figure 18
Chemical Analyses for Pecos River Near Artesia, N. Mex.
and at Carlsbad, N. Mex.



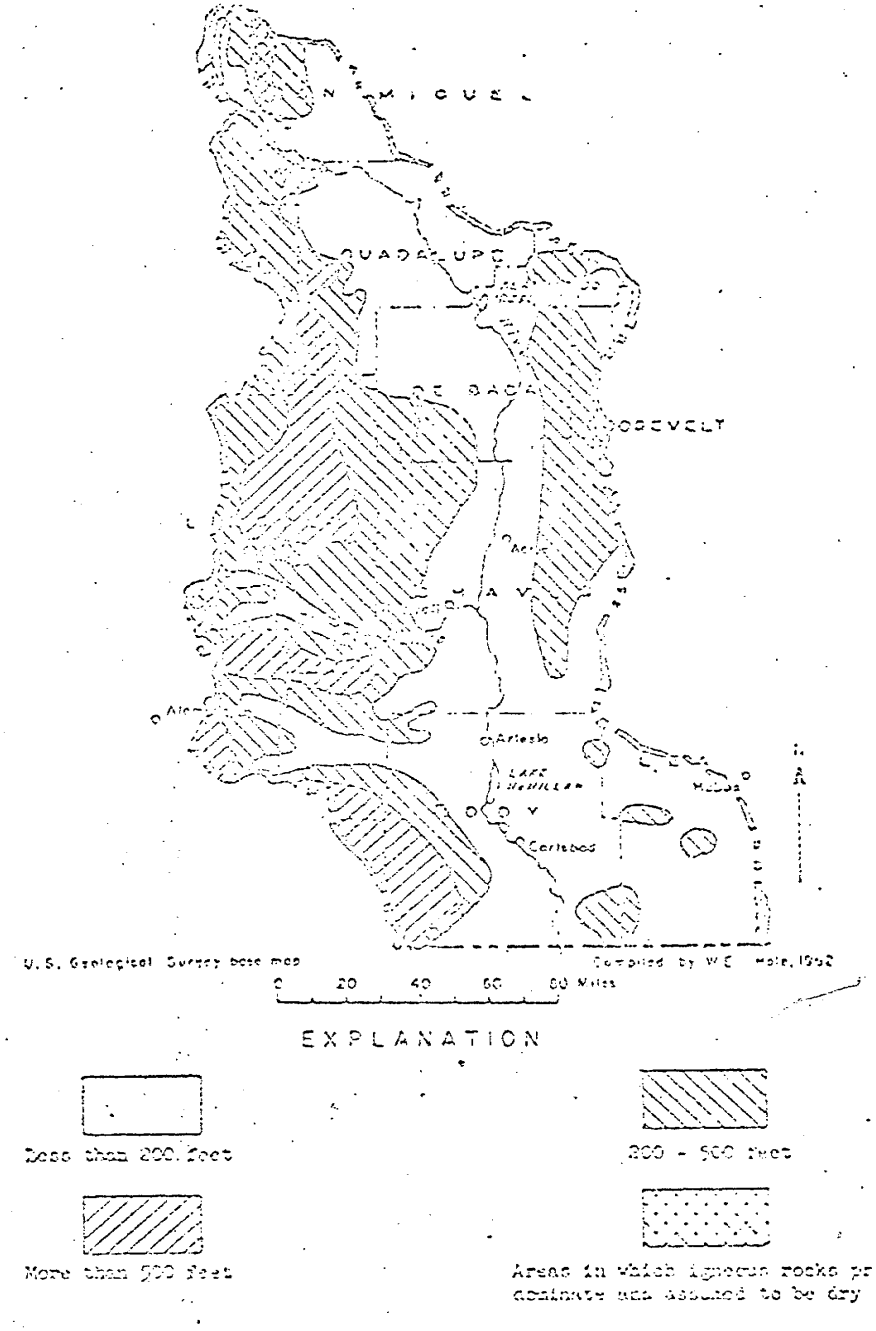


Figure 19
Salinity of Ground Water and Depth to Ground Water Below Land Surface

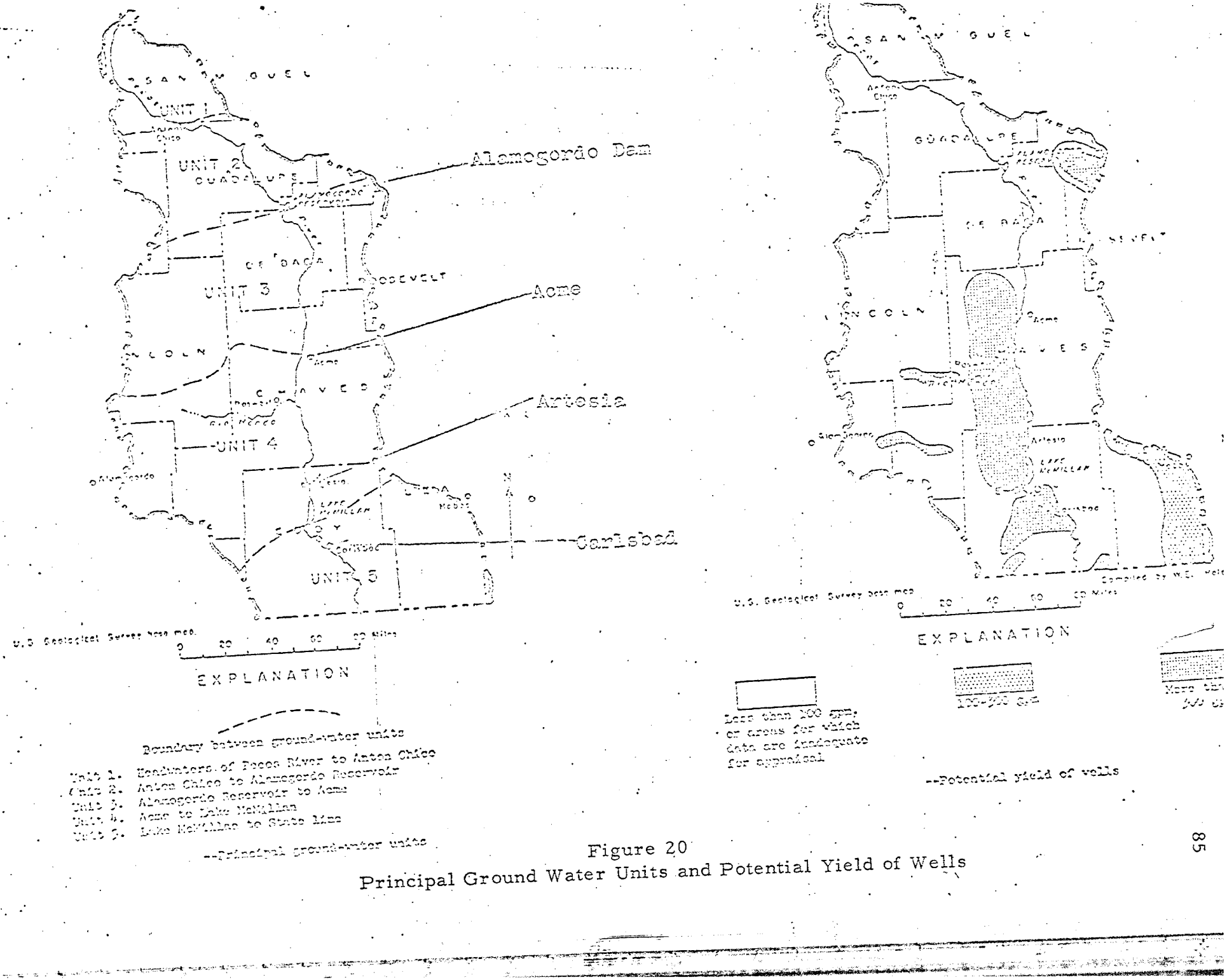


Figure 20
Principal Ground Water Units and Potential Yield of Wells

COMPUTER ANALYSIS OF A SITE LOCATION

Programming

To this point emphasis had been placed on data collection and historic background. The last section will illustrate the application of computer processing as a technique for the economic analysis of a mineral industry site location.

Two levels of sophistication were used to analyse prospective site locations. In the first situation the program simply reproduced the data available in the library storage of the computer. This duplicated the operation that might be made available as a service to a potential New Mexico industry collecting available economic information.

In the second case it was assumed that an industry had indicated certain cost parameters under which it must operate a plant and make a specified profit in terms of percentage of fixed capital investment. It was also assumed that the industry conducted a market analysis and already de- also assumed that the industry conducted a market analysis and already decided that New Mexico was an advantageous location for its plant. The program was required to decide if there was any location which would meet the cost parameters, and if so, to indicate what short-run profit could be expected. If several locations were suitable the program listed all these locations giving the expected profit margin at each location. In addition the locations which

did not meet the profit margin were listed along with their respective profits at each location. The program also broke down various direct costs and printed them separately in the program output. At the end of the output was a table which summarized the costs and evaluation at the four locations analysed.

Library Function--The First Run

Study area data was first sorted and then compiled in a convenient order for transfer of data to IBM card record. The sorted data was punched on 80 column IBM cards, and transferred to a tape record by a simple program.* This tape record represented the library storage of information collected on southeastern New Mexico.

After setting up the library tape, a program was constructed to produce the output of the tape record on an IBM line printer. This output consisted of 931 card impressions each of which was coded by the first six characters of the individual record (see Table 29).

Each card impression was divided into four groups of information, or in computer language, variable names. These were called "NAME," "CODE," "DATA," "VALUE." "NAME" was the first field and was four characters long (see Table 29). The first character was a letter R, A, C or H which identified the information to follow as being about Roswell, Artesia, Carlsbad or Hobbs respectively. The next three characters of "NAME" were numeric and represented which category of classification was

---

* The use of tape record is recommended due to its convenience of use, saving of space, and the time saving involved in removing data from the tape.

TABLE 29. CODING FOR COMPUTER PROGRAM

Number of Characters	4	4	64	8
Variable Name	NAME	CODE	DATA	VALUE
Example	R004	35	Sources = .75%, etc.	
Type of Field	A	I	A	F
Meaning	Roswell Taxes	State-ment	Information	Numeric Cost Data

A - Alpha-numeric (both letters and numbers are in the field).
I - Integer or literal (whole number or literal information field).
F - Real number field.

TABLE 30. CATEGORIES OF CLASSIFICATION

List of Categories of Classification By Last Three Characters In Variable Name "NAME"

001 - General location of site
002 - General character of land information
003 - Utility information
004 - Tax information
005 - Property information
006 - Climate information
007 - Transportation information
008 - Labor information
009 - Population information
010 - Mineral Resources information

applicable to the data following on the card impression (see Table 30). The next two characters, "CODE," represented the actual statement number of the record in a category of classification. An example of the coding would be the six characters R00435. This indicated that the data was on Roswell, involved taxes, and in particular was statement number 35 under that category.

The third field, called "DATA," was 64 characters wide and contained the written information in the computer library.

The last variable name was called "VALUE" and contained numbers which were used for cost calculations in the second programming level.

Actually no processing of data was done in this first program. The reproduction of data was useful since many companies prefer to process information themselves. This type of program would function as a service to companies looking for economic data to analyse an industry site location.

The library information stored on tape must be constantly updated and checked for accuracy or the data may not accurately represent the actual situation. The larger the scale encompassed by the computer library storage, the larger the manpower necessary to keep it current.

Second Run--Evaluation Program

The second program was designed to process relevant data on southeastern New Mexico and evaluate mineral industry site locations when given certain cost and demand parameters. Significant data had been collected only in Roswell, Artesia, Carlsbad, and Hobbs, which limited the evaluation to these four site locations.

To evaluate any industry site location it is first necessary to know what type of industry is involved in the evaluation. Factors such as plant size, manpower demand, finished products and many others factors have to be known or estimated to make a valid analysis.

The problem thus created was to establish a hypothetical situation which would be feasible in the study area. The most likely high-grade product producer would be a fertilizer industry. This industry would produce a concentrated blend of chemical fertilizers in pelletized form. The product would be usable as produced at the factory, and would require no additional processing. The following description, demands, cost parameters and assumptions will represent the hypothetical situation created by a corporation analysing the study area for a site location.

I. General description

A. Site locations in southeastern New Mexico
B. Type of industry would be a concentrate chemical fertilizer producer.
C. Plant capacity would be 2,000 tons per day finished product.
D. Products produced would be K_2SO_4, $(NH_4)H_2PO_4$ and $(NH_2)_2CO$.
E. Plant would include:
   1. An 800 ton per day ammonia plant
   2. A 500 ton per day sulfuric acid plant
   3. A 2,000 ton per day finished product mill and storage facility
F. Plant will have a 90% overall efficiency.

II. Cost parameters established

A. Plant amortization is set for 15 years.
B. A 45% return on fixed capital investment needed per year after considering direct cost at plant site locations.
C. Fixed capital investment in plant complex will be $35,000,000.
D. Necessary to produce concentrate in bulk form for factory price of $130 per ton.
E. Necessary to deliver concentrate in 100 pound sacks to ultimate consumer priced at $190 per ton.
F. Sulfuric acid plant can produce 98% H_2SO_4 for $25 per ton.
G. Plant maintenance will equal 5% per year of fixed capital investment.
H. Plant supplies will equal 15% of maintenance costs.
I. Plant insurance will be 1% of the capital investment.

III. Plant demands

A. Labor
   1. Supervision
      a. Plant superintendent - salary $15,000 per year.
      b. Assistant superintendent - salary $12,500 per year.
      c. General foreman - salary $10,500 per year.
      d. Shift foremen (3) - salary $9,000 each per year.
      e. Area foremen (3) - salary $9,000 each per year.
      f. Laboratory staff (3) - salary $10,000 each per year.
      g. Clerical work (2) - salary $7,500 each per year.
   2. Workers
      a. 58 per shift
      b. Three shifts
      c. 174 man days per day labor required

B. Utilities
   1. Water
      a. Good quality
      b. 270 gallons consumption per ton of finished product
   2. Electric power
      a. 18 kwh per ton finished product
      b. Plant will have 10,000 kw demand.
      c. Natural gas consumption 3,000,000 BTU per ton finished product.

C. Property
   1. Flat land
   2. 370 acres

IV. Assumptions

A. Plant will sell all concentrate produced.
B. Market analysis indicated southeastern New Mexico is most advantageous location for the plant.
C. The following reactions take place in the plant, and are feasible to produce the finished products.
   1. $H_3PO_4 + NH_3 = (NH_4)H_2PO_4$
      98 tons + 17 tons = 115 tons
   2. $2NH_3 + CO_2 = (NH_2)_2CO + H_2O$
      34 tons + 44 tons = 60 tons + 18 tons
   3. $2KCl + H_2SO_4 = K_2SO_4 + 2HCl$(by-product)
      149 tons + 98 tons = 174 tons + 73 tons
D. Blend sold at $130 per ton at factory will consist of:
   1. 15% by weight K_2SO_4
   2. 35% by weight $(NH_4)H_2PO_4$
   3. 50% by weight $(NH_2)_2CO$

The process of determining reasonable cost parameters for the hypothetical fertilizer industry was a process of comparison and estimation. Fixed capital cost was estimated by comparing the hypothetical plant with already existing plants of a similar type(Kytell and Morel, 1967). Costs of maintenance, plant supplies, insurance, and labor demands were estimated using figures from a bulletin entitled The Economics of Small Milling

Operations (Yarroll and Davis, 1968). Utility demand was determined mostly from figures obtained by verbal conversation with Dr. Roshan B. Bhappu of New Mexico Bureau of Mines and Mineral Resources, and David A. Schwab and Dr. Lawrence R. Hathaway of the chemistry department of New Mexico Tech. While talking with Lloyd A. Calhoun of New Mexico Electric Service Co., he indicated that a plant of the size being used for analysis would have at least a 10,000 kw demand. The natural gas demand figure was estimated using information supplied by the New Mexico Tech Chemistry Department and Dr. Roshan B. Bhappu of New Mexico Bureau of Mines and Mineral Resources. Donald L. Garey of The Industrial Development Corporation of Lea County expressed the opinion that my estimate of natural gas consumption may, in all likely-hood, be too small. Determination of property necessary for plant construction and facilities was done by comparing similar chemical plant installations within the state. Three hundred and seventy acres will be adequate for the plant site. Sale price of the product at the ultimate consumer was estimated using the sale price of fertilizers that are already on the market. Using this as a base and subtracting the estimated costs of transportation and packaging, factory sale price of $130 in bulk form was obtained.

Three end products were chosen because they provided a high percentage of all necessary chemical nutrients that agricultural products demand. Blending of the end products would assure high nitrogen, phosphate, sulfate and K_2O equivalent content in one product. For simplicity, the blend of 15%

$_2SO_4$, 35% $(NH_4)H_2PO_4$ and 50% $(NH_2)_2CO$ was selected as the end product
determine product sale price. In actual practice a plant of this type would
ake many different blends to suit the needs of all types of soils and plants.
n making K_2SO_4, HCl is produced as a by-product and can be sold for use
n secondary recovery of oil.

The Program

Creating a program capable of digesting data and producing a short-run economic evaluation of site locations for the hypothetical industry proved to be a laborous procedure. It was necessary in some instances to estimate data that was not collected before the program would function as it was designed. The program construction consisted of a main program which called on fifteen subroutines to process data correctly. (This program can be seen in Appendix B.) An example will be used to illustrate the procedure by which all data was processed by the program. Using the card impression H00419 (see Table 29) the program did the following:

1. The main program read in data card impression from tape record and assigned the value H004 to "NAME" and 19 to "CODE."

2. The main program compared "NAME" in the logical "IF" statements until it reached statement number 7. At this point "NAME" did equal (.EQ.) H004.

3. The main program executed the logical "IF" statement which told it to "GO TO 8."

4. As this command was executed, control of the program was transferred to subroutine TAX by statement number 8. (See appendix)

5. Subroutine TAX again compared "NAME" and H004 and sent control to statement number 408.

6. Now the subroutine compared "CODE" with various values until "IF(CODE. EQ. 19) GO TO 408" statement was encountered.

7. At this point "CODE" did equal 19.

8. The logical "IF" statement was executed and control went to statement number 408 which made a mathematical calculation--TTOH = etc.

9. The subroutine then executed the next four write statements and returned to the main program.

10. Upon returning to the main program the next card impression was read and the process begun again.

The program continued until all the data had been read and processed in the first ten subroutines. (A flow sheet diagram representing the program in block diagrammatic form is shown in Figure 21.) Then the last five subroutines were executed which processed the data stored by the previous subroutines. In subroutine "AMOR," amortization cost per ton of finished product was calculated and stored in memory. In subroutine "MAINT," maintenance, supply and insurance costs were calculated and stored in memory. Subroutine "COST" then called all previous subroutine data that referred to direct costs incurred at each site location. The costs

Computer Library

Program Flow Sheet
using Computer Library

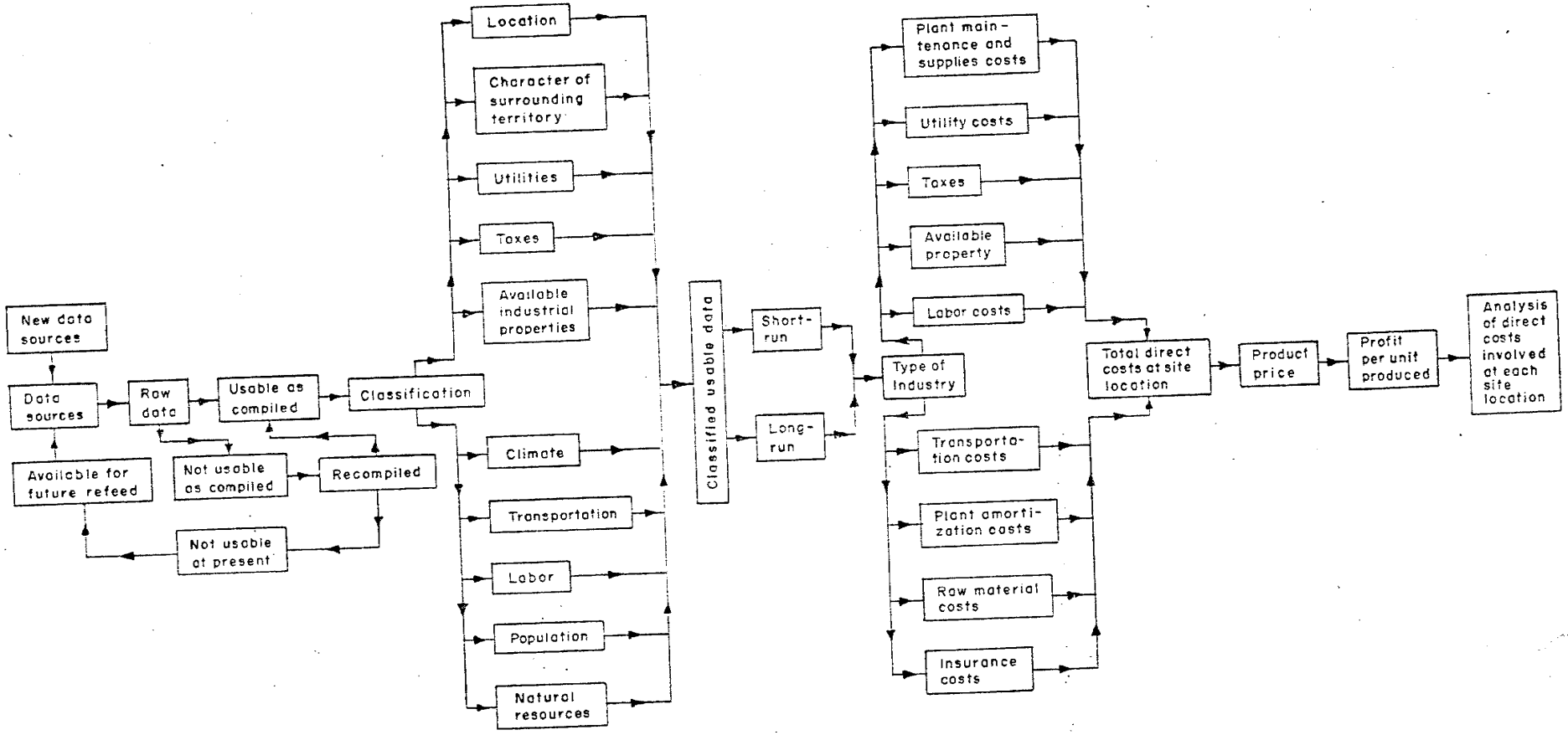


FIGURE 21

were totalled and stored as total direct costs for each of the four site locations (Appendix B). Subroutine "EVAL" evaluated each site location to see if it met the cost parameters. Then profit for each location, in terms of fixed capital investment, was determined. The last subroutine, "TABLE," summarized the cost and evaluation data in a convenient table form.

In several instances data had to be estimated to fill vacant locations. The largest single estimate was made regarding railroad transportation costs of sulfur and potash. Estimates were made on the high side for freight rates involving sulfur and potash from five year old data found in U. S. Bureau of Mines Mineral Yearbooks. Available land made for industrial use had to be estimated for Roswell and Artesia due to a lack of data. Data involving climate was estimated for Roswell, Artesia and Hobbs from the climate indicated in Carlsbad.

The output produced by the program (Appendix B) indicated that all locations satisfied the profit parameters. Analysing some individual costs did not show any unexpected high-cost parameters in southeastern New Mexico from the direct cost point of view. It was hoped at the conception of this program that one or more categories of cost would appear higher than seemed reasonable. Taxes amounted to a third of the direct costs involved at each location, which is not out of the ordinary. The raw mineral costs accounted for over half of the direct cost factors which would be expected in a high-grade, high-priced, bulk-mineral material. Labor costs reflected low cost relative to most industries due to a relatively little amount of

handling necessary in the product production, and the low manpower needed in a modern computerized plant. Transportation costs of the raw material to the plant sites was the only category where costs might be a little high, however where waterway transportation is not available costs will be high.

This program did not take into account anything other than short-run direct cost factors to determine profit margin. Such factors as political atmosphere, supply and quality of water, long-run business climate, potential market expansion, competition, substitute products and many other variables not easily computerized were not included in the program. Higher levels of sophistication of programming, that could include the variables left out of this program, were almost unlimited but required more thorough data collection.

It is true that each type of industry, or size of industry involves a different set of economic variables and would require modification of the program, but a well designed program would keep such changes to a minimum. Once a comprehensive program was built to analyse site locations for different types and sizes of industries, it would only take a matter of hours for an individual analysis on an entire state for an industry site location. Programming should not be considered the cure-all to industrial plant site locations, but it certainly can save time in processing and evaluating data.

CONCLUSIONS

The beginning of southeastern New Mexico's economy was established before 1855 by Indian and Spanish farmers who grew crops in present day Pecos Valley. American pioneer farmers and ranchers penetrated the area in the 1850's. The early farmers made little headway in a power struggle with ranchers, and cattle became the prime economic concern in the 1870's and 1880's. With the end of the cattle boom, the coming of the railroads, and the enactment of land acts, a new impetus was given to farming in the Pecos Valley.

Prior to the 1890's only surface water in the valley was used for irrigation of crops which limited extensive land use. Before 1900 drilling began in search of additional water sources, resulting in the discovery of a large underground artesian reservoir. This accelerated farming and made agricultural production the primary economic wealth of the study region until 1925.

The first mineral industry in the area came with the discovery of oil near Dayton in 1925. By 1932 full scale production of crude petroleum was contributing wealth equally with agriculture in Eddy and Lea Counties. Before 1930 extensive potassium salt deposits were

discovered east of Carlsbad, and in 1931 potash was being shipped from Eddy County in large quantities. The value of mineral production surpassed the value of agricultural production in the 1930's and gained an ever increasing lead until the beginning of World War II. With price and production controls during the war years, the mineral industry was static, and agricultural production varied in relation to natural forces. After 1945 price and production freezes were removed, and the mineral industry again made economic advances in Lea and Eddy Counties until raw mineral value in southeastern New Mexico was 10 times greater than the value of agricultural production. While Lea and Eddy Counties became more dependent upon the mineral industries, Chaves County continued to rely upon agricultural production and upon large defense expenditures made by the federal government after 1945.

Through 1969 the oil and gas industry in Lea and Eddy Counties continued to flourish, however both Eddy and Chaves Counties experienced economic setbacks. Due to development of potash deposits in Canada and other countries, and industry wide overproduction, Carlsbad potash production was reduced starting in 1966. This production cut has slowed Eddy County economic growth to a virtual standstill. Reduced defense expenditures by the federal government in the mid-1960's removed the government installations and economic support from Roswell, and slowed the economy in Chaves County. With the increasing water problem, and the steady decrease in rural employment, agriculture in the study area appeared to be on the decline.

Industrial development is one solution to the serious economic problems of southeastern New Mexico. Since large potential for high-value finished product production exists in the area, a hypothetical fertilizer industry complex, designed to utilize the study area's abundant raw mineral resources, was created. It was found that collected economic data on the region could be stored and used by a computer to evaluate direct costs at industry site locations in all three counties. Every location tested proved to be feasible for this industry from the direct cost considerations. It was hoped that the case analysed would uncover high direct costs contributing to retardation of industrial growth. However, no such areas were found, indicating that other factors than direct costs had been involved in discouraging high-value finished product production within southeastern New Mexico.

With the mineral resources available in the area, the results of this study indicate that further mineral industry development along with industrial development will be necessary to continue or restore a healthy economic climate in the study area.

LIST OF REFERENCES

Albuquerque Journal (1968) FPC Permian Basin Ruling Upheld, May 2, front page.

------- (1968) State Liable For Royalty Tax Refunds, May 2, p. A-1.

Annual Reports of the Governor of New Mexico Territory (1883) House Executive Document #1, 48th Cong., 1st sess., Sept. 6.

Blumenfeld, Arthur A. (1960) New Mexico's Population Since 1910, Bur. Business Res., Univ. N. Mex.

DeBerry, Linda L. and Edgel, Ralph L. (1968) Income and Employment in New Mexico 1965-1966, Bur. Business Res., Univ. N. Mex., Feb.

Degeer, M. W. (1968) U.S. Corps of Army Engineers, Written Communication, July.

Edgel, Ralph L. (1968) Estimates of the 1967 Population of New Mexico Counties, Bur. Business Res., Univ. N. Mex., n. 46, Feb.

------- (1965) Projections of the Population of New Mexico and Its Counties to the Year 2000, N. Mex. Business, Bur. Business Res., Univ. N. Mex., Reprint, July and August.

-------, and LaLonde, Peter J. (1964) Income and Employment in New Mexico, 1960-1964, New Mexico Studies in Business and Economics, Bur. Business Res., Univ. N. Mex., n. 15.

Employment Security Commission of New Mexico (1968) New Mexico Labor Market Trends, v. VI, n. 55, June 29.

Fiedler, Albert G. (1926) Report on Investigations of the First Roswell-Artesia Basin Chaves and Eddy Counties, New Mexico, State Engineer's Report.

General Telephone Company of the Southwest (1967) Community Industrial Survey, Carlsbad, New Mexico, Economic Development Section, sec. 6 and 7, Sept.

Hedges, J. H. (1935) U. S. Bur. Mines, Mineral Yearbook.

Helmig, Phil D. (1956) History of Petroleum Exploration in Southeastern New Mexico, Roswell Geol. Soc. Symposium.

Hottenroth, J. H., Colonel (1968) Report to Arkansas-White River Basins Inter-Agency Committee, District Engineer, Albuquerque District Corps of Engineers, July 24.

Kytell, Sidney and Morel, William C. (1962) Bibliography of Investments and Operating Cost for Chemical and Petroleum Plants, January-December, 1967, U. S. Department of the Interior, Circ. 8386.

Maddox, George (1965) Availability and Quality of Ground Water in the Pecos River Basin, Talk, Tenth Annual New Mexico Water Conference, April 1st and 2nd.

Meaders, Margaret (1967) The Economy of Eddy County, N. Mex. Business, Bur. Business Res., Univ. N. Mex., Reprint, Jan.

New Mexico Business (1968) Bur. Business Res., Univ. N. Mex., March.

N. Mex. Inst. Min. and Tech. (1965) Mineral and Water Resources of New Mexico, State Bur. Mines and Mineral Res., Bull. 87.

N. Mex. Mining Assoc. (1968) Statement of Position on Taxes and Tax Structure.

O'Hanlon, Thomas (1968) AllThat Fertilizer and No Place to Grow, Fortune Magazine, June 1, pp. 90-95, 129.

Pegrum, Dudley F. (1968) Transportation: Economics and Public Policy, Homewood, Illinois: Richard Irwin, Inc., Revised Ed.

Riegel, Robert E. and Atheran, Robert G. (1966) America Moves West, New York: Holt, Rinehart and Winston, Inc.

Sorensen, Earl F. (1965) Use of Water in the Pecos River Basin, New Mexico, Tenth Annual New Mexico Water Conference, April 1st and 2nd.

-----, and Borton, Robert L. (1967) Settlement, Development, and Water Use, Pecos Valley, Water Resources of New Mexico, State Planning Office.

S. Army Corps of Engineers (1967) Arkansas River, Engineer Division, Tulsa District.

.S. Bureau of Mines (1925-1967) Mineral Yearbooks.

.S. Department of Commerce (1945) United States Census of Agriculture, Bureau of Census, v. I.

------ (1950) United States Census of Agriculture, Bureau of Census.

Vaters, L. L. (1950) Steel Trails to Santa Fe, Lawrence, Kansas: Univ. Kans. Press.

Westphall, Victor. (1966) The Public Domain in New Mexico, 1854-1891, Univ. N. Mex.

Woods, Lowell G. (1965) The Possibility of Increasing Water Yield Through Management, Tenth Annual New Mexico Water Conference.

Yarroll, W. H. and Davis, F. T. (1968) The Economics of Small Milling Operations, Colorado School of Mines Research Foundation, Mineral Industry Bulletin, v. II, n. 2, March.

APPENDIX A

The following tables indicate the value and magnitude of the petroleum products production for the state and the study area at five year intervals.

TABLE A-1. CRUDE OIL PRODUCTION AND VALUE IN NEW MEXICO 1950-1965*

Year	Production in 1000 bbls	Value in $1000	Price/bbl.
1950	47,034	11,572	$2.42
1955	82,958	227,310	$2.74
1960	107,380	305,895	$2.83
1965	119,166	334,977	$2.80

*Figures obtained from the U.S. Bur. Mines Mineral Yearbook 1950-1967.

TABLE A-2. NATURAL GAS PRODUCTION MARKETED IN NEW MEXICO 1950-1965*

Year	Production in M.C.F.	Value in $1000	Price/mcf
1950	212,909,000	6,387	3.00¢
1955	540,664,000	48,119	8.89¢
1960	798,928,000	85,485	10.07¢
1965	937,205,000	110,590	11.80¢

*Figures obtained from the U.S. Bur. Mines Mineral Yearbook 1950-1967.

TABLE A-3. NATURAL GAS LIQUIDS AND ALLIED PRODUCTS IN NEW MEXICO 1950-1965*

Year	Production in 1000 gals	Value in $1000	Value/gal
1950	210,798	10,959	5.20¢
1955	539,426	22,192	4.12¢
1960	966,783	49,200	5.08¢
1965	1,117,798	46,641	4.18¢

*Figures obtained from the U.S. Bur. Mines Mineral Yearbook 1950-1967.

TABLE A-4. APPROXIMATE CRUDE OIL PRODUCTION AND VALUE FOR STUDY AREA 1950-1965**

Year	Production in 1000 bbls	Value in $1000
1950	47,034	114,572
1955	82,890	227,100
1960	93,400	266,129
1965	114,200	304,829

**Figures calculated from state figures of Mineral Yearbook.

TABLE A-5. APPROXIMATE NATURAL GAS MARKETED FOR STUDY AREA 1950-1965**

Year	Marketed Production in M.C.F.	Value in $1000
1950	117,300,000	3,513
1955	296,000,000	26,465
1960	437,800,000	47,017
1965	516,000,000	60,824

**Figures calculated from state figures of Mineral Yearbook.

TABLE A-6. APPROXIMATE NATURAL GAS LIQUIDS AND ALLIED PRODUCTS FOR STUDY AREA 1950-1965**

Year	Production in 1000 gal	Value in $1000
1950	169,500	9,000
1955	458,100	18,863
1960	821,500	36,900
1965	292,500	33,115

**Figures calculated from state figures of Mineral Yearbook.

APPENDIX B

	0.0
1 ROSWELL, NEW MEXICO	0.0
0 GEOGRAPHIC LOCATION = SOUTHEASTERN NEW MEXICO, CHAVEZ COUNTY	0.0
1 CHARACTER OF SURROUNDING TERRITORY	0.0
2 ELEVATION = 3600	0.0
3 TERRAIN = RELATIVELY FLAT FARM LAND	0.0
4 FLOOD HAZARDS SLIGHT = ONE MINOR FLOOD IN 47 YEARS	0.0
5	0.0
0 UTILITIES	0.0
1 ELECTRIC POWER	0.0
1 SOUTHWESTERN PUBLIC SERVICE COMPANY	0.0
2 RATES	0.0
3 PEAK DEMAND CHARGE $370.00 FOR THE FIRST 200KW, OR LESS, OF	0.0
4 DEMAND PER MONTH	0.0
3 $1.25 PER ADDITIONAL KW OF DEMAND	0.0
6 ENERGY CHARGE .75 PER KWH FOR THE FIRST 300 KWH USED PER MONTH	0.0
7 .50 FOR ADDITIONAL KWH USED PER MONTH	0.0
8 A DISCOUNT OF 3% WILL BE ALLOWED WHEN SERVICE IS SUPPLIED AT A	0.0
9 LINE VOLTAGE OF 13 KV OR GREATER, AND NO TRANSFORMATION IS MADE	0.0
0 BY THE COMPANY AT THE CUSTOMERS LOCATION.	0.0
1 RATES ARE NEGOTIABLE FOR A LARGE POWER CONSUMER	0.0
2 MAXIMUM DEMAND IS 52,100 KVA	0.0
3 TYPE OF SERVICE IS 60 CPS A.C. CURRENT IN THREE VOLTAGES	0.0
4 120, 240, 440 VOLTS.	0.0
5 TRANSMISSION LINE = 230,000 VOLTS	0.0
6 CONTRACT PERIOD IS NOT LESS THAN ONE YEAR	0.0
7 NATURAL GAS	0.0
8 SOUTHERN UNION GAS COMPANY SUPPLIER	0.0
9 DAILY SUPPLY 20,000,000 MCF	0.0
0 BTU ANALYSIS AT 14.7 PSIA 60 DEGREES F = 1,100 BTU/CU-FT	0.0
1 RATES	0.0
2 FIRST 1 MCF PER MONTH AT $1.61 PER MCF	0.0
3 NEXT 3 MCF PER MONTH AT $.88 PER MCF	0.0
4 NEXT 22 MCF PER MONTH AT $.70 PER MCF	0.0
5 NEXT 24 MCF PER MONTH AT $.61 PER MCF	0.0
6 NEXT 100 MCF PER MONTH AT $.50 PER MCF	0.0
7 ADDITIONAL MCF OF GAS PER MONTH AT $.41 PER MCF	0.0
8 TELEPHONE SERVICE GENERAL TELEPHONE COMPANY OF THE SOUTHWEST	0.0
9 BUSINESS ONE PARTY RATES = $12.50 PER MONTH	0.0
0 TELEGRAPH = WESTERN UNION	0.0
1 WATER	0.0
2 TOTAL DAILY CAPACITY FOR PUMPING AND PROCESSING = 22 MILLION	0.0
3 GALLONS	0.0
4 RATES	0.0
5 FIRST 3000 GALLONS = $3.00	0.0
6 EACH ADDITIONAL 1,000 GALLONS .24	25.000
5	0.450
10	125.000
12	25.000
15	0.0
47	0.0
0 TAXES	0.0
1 COMPENSATING OR USE TAX = AN EXCISE TAX OR 3% OF THE PURCHASE	0.0
2 PRICE IS LEVIED UPON OUT-OF-STATE PURCHASES OF TANGIBLE PERSONAL	0.0
9 EXEMPT, AS ARE CHEMICALS AND REAGENTS USED IN THE PROCESSING	0.0
3 PROPERTY FOR USE, STORAGE, OR CONSUMPTION IN NEW MEXICO. PRO	0.0
4 PERTY BECOMING A COMPONENT PART OF ANY MANUFACTURED ARTICLE IS	0.0
6 OF OILS AND MINERALS.	0.0
9 LAW EXEMPTS FROM PROPERTY TAX PERSONAL PROPERTY(COMMODITIES)	0.0
0 THAT ARE MOVING IN INTERSTATE COMMERCE OR THAT ARE IN STORAGE IN	0.0
1 THE STATE AND DESTINED TO BE SHIPPED OUT-OF-STATE.	0.0
1 PROPERTY TAXES = THE NEW MEXICO CONSTITUTION LIMITS THE TOTAL	0.0
3 PROPERTY TAX RATE TO $20/$1000 OF ASSESSED VALUATION. LEVIES	0.0
4 BEYOND THE LIMITATION, EXCEPT FOR DEBT SERVICE, MUST BE VOTED	0.0

54	ONE-THIRD OF ACTUAL VALUE. FAIR MARKET VALUE IS	0.0
55	ACCEPTED AS ACTUAL VALUE.	0.0
20	SEVERANCE TAX IS LEVIED AGAINST ANY MINERAL INDUSTRY THAT MINES	0.0
21	A NATURAL RESOURCE AND SEVERS IT FROM THE GROUND. IS BASED ON	0.0
22	THE VALUE OF THE MINERAL AT THE PLACE AND TIME IT WAS TAKEN OUT	0.0
23	OF THE GROUND OR AT ITS FIRST SALE POINT. COPPER=.5%, URANIUM=1%	0.0
24	POTASH=2.5% AND ALL OTHERS=.125%	0.0
25	GROSS RECEIPTS TAX = 3%, EXCEPT THAT FIRMS ENGAGED IN MINING AND	0.0
26	RELATED ACTIVITIES(EXCEPT POTASH, COAL, OIL, GAS AND LIQUID	0.0
27	HYDROCARBONS) ARE TAXED AT .75%. LUMBER AND LUMBER MANUFACTURES	0.0
28	.375% AND ALCOHOLIC BEVERAGE WHOLESALERS AT .50%.	0.0
29	THE CORPORATE INCOME TAX RATE IS A FLAT 3% ON THE ENTIRE TAXABLE	0.0
30	INCOME OF THE CORPORATION. FEDERAL INCOME TAX IS DEDUCTIBLE FROM	0.0
31	GROSS INCOME	0.0
32	RESOURCES TAX = RESOURCE EXCISE TAX BASED ON THE PRIVILEGE OF	0.0
33	SEVERING OR REMOVING FROM THE GROUND AND (OR) PROCESSING MINERAL	0.0
34	RESOURCES WITHIN THE STATE. POTASH = 3% ALL OTHER NATURAL RE-	0.0
35	SOURCES = .75%. TAX IS IMPOSED ON THE GROSS VALUE OF THE RE-	0.0
36	SOURCE AT THE TIME IT IS SEVERED.	0.0
37	PROCESSORS TAX = TAX PAYED FOR REFINING OR PROCESSING MINERALS	0.0
38	AFTER THEY HAVE BEEN SEVERED. THIS TAX IS GENERALLY IMPOSED ON	0.0
39	THE GROSS VALUE OF MINERAL AFTER PROCESSING. TIMBER =.375%. ALL	0.0
40	OTHER NATURAL RESOURCES = .75%. IF OPERATIONS INVOLVE EXTRACTING	0.0
41	OR FELLING AND PROCESSING, ONLY THE PROCESSING RATE OF THE	0.0
42	SERVICE TAX APPLIES.	0.0
43	SERVICE TAX = THE SERVICE TAX IS IMPOSED ON AN INDUSTRY THAT	0.0
44	SEVERS AND(OR)PROCESSES A MINERAL WITHIN NEW MEXICO THAT IS	0.0
45	OWNED BY SOMEONE OTHER THAN THE SEVERER OR PROCESSOR. THE TAX IS	0.0
46	APPLIED THE SAME AS THE RESOURCES AND PROCESSORS TAXES ARE.	0.0
47	MUNICIPAL TAXES = OCCUPATIONAL LICENSE FEE OF $.55/$1000 GROSS	0.0
48	VOLUME OF BUSINESS	0.0
5		0.020
10		0.0
12		0.001
15		0.010
16		0.0
17		0.0
18		0.008
19		0.0
0	AVAILABLE INDUSTRIAL PROPERTIES	0.0
1	ACREAGE = 5 LARGE PLOTS PLOT NO.1=710 ACRES, PLOT NO. 2= 540	0.0
2	ACRES, PLOT NO. 3=1170 ACRES, PLOT NO. 4=285 ACRES, AND PLOT	0.0
15	NO.5=210 ACRES	0.0
4	PROXIMITY TO RAILROAD. PLOTS 1,2,3 AND 5 IMMEDIATELY ADJACENT	0.0
5	TO RAILROAD FACILITIES. PLOT NO 4 IS NOT LOCATED CONVIENTLY NEAR	0.0
6	PRESENT TRACKAGE.	0.0
7	ELEVATION = 3567 TO 3608 INCLUDES ALL SITES	0.0
8	FOUNDATION = SITES NOS. 1,2,3 AND 4 ON RIVER SEDIMENTS +ALLUVIAL	0.0
9	FILLS, AND SITE NO. 5 ON IGNEOUS BEDROCK.	0.0
10	ACCESSIBILITY TO UTILITIES = ALL SITES ARE ALREADY PROVIDED	0.0
11	FOR PROVISIONS FOR ELECTRICITY, GAS AND WATER.	0.0
13	PROXIMITY TO TRANSPORTATION OTHER THAN RAILROADS. EACH SITE HAS	0.0
14	EASY ACCESS TO HIGHWAY SYSTEMS.	0.0
3		540.000
16		0.0
0	CLIMATE - GENERAL DESCRIPTION - SEMI-ARID CONTINENTAL WITH A	0.0
1	DISTINCT SUMMER RAINFALL MAXIMA. SUMMERS = WARM, WINTERS = MILD.	0.0
2	ABUNDANT SUNSHINE - GENERALLY LOW RELATIVE HUMIDITIES.	0.0
3	AVERAGE ANNUAL RAINFALL = 12 IN.	0.0
4	DURING WINTER SOME PRECIPITATION FALLS AS SNOW	0.0
6	HIGH TEMPERATURE MID-MAY TO MID-SEPTEMBER 90-100+	0.0
7	JANUARY AVERAGE DAYTIME SHADE TEMPERATURE = 60 DEGREES.	0.0
8	DURING MID-WINTER ABOUT TWO-THIRDS OF THE NIGHTS SHOW LOW	0.0
9	READINGS BELOW THE FREEZING MARK	0.0

	TRANSPORTATION	0.0
	RAILROADS SANTE FE RAILWAY SYSTEM	0.0
	DELIVERY TIMES KANSAS CITY 2ND DAY CHICAGO 3RD DAY	0.0
	LOS ANGELES 4TH DAY DALLAS 3RD DAY HOUSTON 3RD DAY	0.0
	VOLUME OF FREIGHT TRAFFIC = LCL AND CL	0.0
	FACILITIES ARE AVIALABLE FOR LESS THAN CARLOAD LOTS	0.0
	MAJOR CONNECTIONS CAN NOT BE MADE IN NEW MEXICO WITH SOUTHERN	0.0
	PACIFIC AND ROCK ISLAND RAILROADS	0.0
	RATES TO CHICAGO FOR MINERAL ORE MATERIAL CL = $13.50/TON	0.0
	LCL = $8.50/100 LBS.	0.0
	RATES TO CHICAGO FOR ELECTRONIC COMPONENTS CL = $4.50/TON 20,	0.0
	000LBS AND FROM 10,000 TO 20,000LBS = $6.75/TON MINIMUM =10,000	0.0
	EAST OF KANSAS CITY ALL CARS MUST BE UNLOADED AND LOADED BY COM-	0.0
	PANY INVOLVED IN SHIPPING	0.0
	MOTOR TRUCKING ICX TRUCKING LINES AND WHITFIELD FREIGHT LINES	0.0
	DAILY SERVICE	0.0
	OVERNIGHT TO EL PASO,TEXAS , AMARILLO,TEXAS , LUBBOCK,TEXAS ,	0.0
	CLOVIS,NEW MEXICO	0.0
	2ND MORNING TO DALLAS,TEXAS AND DENVER,COLORADO	0.0
	3RD MORNING TO LOS ANGELES,CALIFORNIA , PHOENIX,ARIZONA ,	0.0
	HOUSTON,TEXAS , KANSAS CITY,MISSOURI , ST LOUIS,MISSOURI	0.0
	4TH MORNING TO SALT LAKE CITY,UTAH AND CHICAGO,ILLINOIS	0.0
	RATES	0.0
	TO CHICAGO - LESS THAN 1500 LBS = $8.39/100 LBS AND 1500 LBS OR	0.0
5	GREATER = $7.77/100 LBS	0.0
7	TO DALLAS-FORT WORTH - LESS THAN 1000 LBS = $4.83/100 LBS, 1000	0.0
3	BUT LESS THAN 2000 LBS = $4.29/100 LBS AND 2000 LBS OR GREATER	0.0
9	= $4.17/100 LBS.	0.0
0	TO LOS ANGELES - LESS THAN 5000 LBS = $9.71/100 LBS AND 5000	0.0
1	LBS OR GREATER = $9.44/100 LBS	800.000
5		750.000
6		0.0
7		1620.000
8		0.0
2		0.0
1	LABOR	0.0
3	TOTAL SKILLED LABOR AS OF OCTOBER 25, 1968 = 579	0.0
4	TECHNICAL AND MANAGERIAL = 22	0.0
5	CLERICAL = 96	0.0
6	SALES = 49	0.0
7	DOMESTIC = 36	0.0
8	SERVICE EXCEPT DOMESTIC = 93	0.0
9	FARMING AND FORESTRY = 22	0.0
10	PROCESSING = 10	0.0
11	MACHINE TRADES = 12	0.0
12	BENCH WORK = 17	0.0
13	STRUCTURAL WORK = 69	0.0
14	MISC. = 50	0.0
15	ENTRY = 103	0.0
316	ROSWELL EMPLOYMENT DRAWING AREA	0.0
318	CHAVES COUNTY TOTAL EMPLOYMENT = 20,000	0.0
819	AGRICULTURAL = 1,390	0.0
820	SELF-EMPLOYED = 1,990	0.0
821	WAGE AND SALARY = 17,390	0.0
822	MINING = 430	0.0
823	CONSTRUCTION = 810	0.0
824	MANUFACTURING = 920	0.0
825	TRANSPORTATION AND UTILITIES = 870	0.0
826	TRADE = 2,990	0.0
0827	FIN.,INS. AND REAL ESTATE = 670	0.0
0828	SERVICES AND MISC. = 2,640	0.0
0829	GOVERNMENT = 8,060	0.0
0830		
09 0	POPULATION CHAVES = 51,000	

2	125,000 BY 2000			0.0
3	LONG RUN STATE POPULATION YEAR 2000 = 3,000,000			0.0
4				0.0
0	NATURAL RESOURCES			0.0
2	MINERAL RESOURCES	PRODUCTION	PROVED RESERVES	LIFE INDEX	0.0
3	CRUDE PETROLEUM	4.0E+6 BBLS	3.2E+7 BBLS	8.00 YEARS	0.0
4	NATRUAL GAS	54,000MCF	870,000 MCF	16.01YEARS	0.0
5	ALLIED PRODUCTS	3.0E+6 BBLS.	3.7E+7 BBLS	12.33 YEARS	0.0
6					0.0
10					0.227
11					0.031
12					0.112
13					0.608
14					1500.000
15					3200.000
16					0.0
17					5700.000
7					0.0
1	ARTESIA, NEW MEXICO				0.0
0	GEOGRAPHIC LOCATION = SOUTHEASTERN NEW MEXICO EDDY COUNTY				0.0
1	CHARACTER OF SURROUNDING TERRITOR				0.0
2	ELEVATION = 3400				0.0
3	TERRAIN = RELATIVELY FLAT FARM LAND				0.0
4	FLOOD HAZARDS SLIGHT = ONE MINOR FLOOD IN 47 YEARS				0.0
5					0.0
0	UTILITIES				0.0
1	POWER ELECTRIC				0.0
2	ARTESIA ELECTRIC COOPERATIVE				0.0
3	INDUSTRIAL RATE				0.0
4	PEAK DEMAND CHARGE OF $375.00 FOR THE FIRST 200 KW, OR LESS, OF				0.0
79	DEMAND				0.0
6	$1.25 PER ADDITIONAL KW OF DEMAND				0.0
7	RATE				0.0
8	ENERGY CHARGE - .75 PER KWH FOR THE FIRST 300 KWH USED PER				0.0
9	MONTH				0.0
340	FUEL COST ADJUSTMENTS THE NET CHARGE PER KILOWATT HOUR OF THE				0.0
341	ABOVE RATE SHALL BE INCREASED OR DECREASED 0.01 PER KWH FOR				0.0
342	EACH 0.5 INCREASE OR DECREASE, OR MAJOR FRACTION THEREOF, IN				0.0
343	THE DELIVERED COST OF GAS AT ALL OF THE COMPANY,S STEAM-ELECTRIC				0.0
344	GENERATING STATION ABOVE 12.5 OR BELOW 10.5 PER THOUSAND CUBIC				0.0
345	FEET DURING THE SECOND PRECEDING MONTH.				0.0
346	TAX ADJUSTMENTS- THE AMOUNT OF THE BILLS COMPUTED UNDER THE				0.0
347	ABOVE RATE WILL BE INCREASED BY THE PROPORTIONATE PART OF ANY				0.0
348	PRESENT AND/OR NEW TAX, OR INCREASED RATE OF TAX,OR GOVERNMENTAL				0.0
349	IMPOSITION(EXCEPT STATE, COUNTY, CITY AND SPECIAL DISTRICT AD				0.0
350	VALOREM TAXES) LEVIED OR ASSESSED AGAINST THE COMPANY OR UPON				0.0
351	ITS ELECTRIC BUSINESS, AS THE RESULT OF ANY PRESENT AND/OR NEW				0.0
352	OR AMENDED LAWS AFTER JUNE 1, 1957.				0.0
353	TYPE OF SERVICE AC 60 CPS 52,100KVA MAXIMUM DEMAND IN 120, 240				0.0
354	,440 VOLTS 3 PHASE				0.0
355	TRANSMISSION LINE = 230,000 VOLTS				0.0
356	CONTRACT PERIOD A PERIOD OF NOT LESS THAN ONE YEAR.				0.0
357	NEGOTIATION POSSIBLE FOR LARGE POWER CONSUMER.				0.0
358	COAL = NOT RECOMMENDED FOR ECONOMICAL USE.				0.0
359	NATURAL GAS SUPPLIER = SOUTHERN UNION GAS COMPANY.				0.0
360	DAILY SUPPLY = 6,000,000 MCF CAN BE INCREASED TO 10,000,000 MCF				0.0
361	BTU ANALYSIS AT 14.7 PSIA 60 DEGREES F, 1,100 BTU/CU-FT				0.0
362	RATES				0.0
363	FIRST 1 MCF PER MONTH AT $1.61 PER MCF.				0.0
364	NEXT 3 MCF PER MONTH AT $0.88 PER MCF.				0.0
365	NEXT 22 MCF PER MONTH AT $0.70 PER MCF.				0.0
366	NEXT 24 MCF PER MONTH AT $0.61 PER MCF.				0.0
367	NEXT 100MCF PER MONTH AT $0.50 PER MCF.				0.0
368	EXCESS MCF PER MONTH A $0.41 PER MCF.				0.0
369	TELEPHONE SERVICE = GENERAL TELEPHONE COMPANY OF THE SOUTHWEST				0.0

WATER-	
CAPACITY = 6 MILLION GALLONS	0.0
RATES INSIDE CITY LIMITS	0.0
FIRST 5,000 GAL. = $3.00	0.0
ADDITIONAL 1,000 GAL = $0.12	0.0
RATES OUTSIDE CITY LIMITS	0.0
FIRST 5,000 GAL. = $5.00	0.0
ADDITIONAL 1,000 GAL = $0.25	25.000
	0.500
	125.000
	12.000
	0.0
	0.0
TAXES	0.0
COMPENSATING OR USE TAX = AN EXCISE TAX OR 3 % OF THE PURCHASE	0.0
PRICE IS LEVIED UPON OUT-OF-STATE PURCHASES OF TANGIBLE PERSONAL	0.0
PROPERTY FOR USE, STORAGE, OR CONSUMPTION IN NEW MEXICO. PRO-	0.0
PERTY BECOMING A COMPONENT PART OF ANY MANUFACTURED ARTICLE IS	0.0
EXEMPT, AS ARE CHEMICALS AND REAGENTS USED IN THE PROCESSING	0.0
OF OILS AND MINERALS.	0.0
FREEPORT LAW = TO GIVE IMPETUS TO THE GROWTH OF THE TRANSPORTA-	0.0
TION AND DISTRIBUTION INDUSTY IN THE STATE OF NEW MEXICO. TAX	0.0
LAW EXEMPTS FROM PROPERTY TAX PERSONAL PROPERTY (COMMODITIES)	0.0
THAT ARE MOVING IN INTERSTATE COMMERCE OR THAT ARE IN STORAGE IN	0.0
THE STATE AND DESTINED TO BE SHIPPED OUT-OF-STATE.	0.0
PROPERTY TAXES = THE NEW MEXICO CONSTITUTION LIMITS THE TOTAL	0.0
PROPERTY TAX RATE TO $20/$1000 OF ASSESSED VALUATION. LEVIES	0.0
BEYOND THE LIMITATION, EXCEPT FOR DEPT SERVICE, MUST BE VOTED ON	0.0
BY THE ELECTORS OF THE TAXING DISTRICT.	0.0
THE ASSESSMENT RATIO IN NEW MEXICO	0.0
IS ONE-THIRD OF ACTUAL VALUE. FAIR MARKET VALUE.	0.0
IS ACCEPTED AS ACTUAL VALUE.	0.0
THE JUDGEMENT OF LOCAL ASSESSORS MAY BE PROTESTED ON A LOCAL	0.0
BASIS AND BEFORE THE STATE TAX COMMISSION TO ASSURE	0.0
EQUITABLE TREATMENT	0.0
DOMESTIC FIRMS PAY A FEE OF 10 PER $1,000 OF AUTHORIZED CAPITAL	0.0
STOCK TO INCURPORATE IN THE STATE. FOREIGN (OUT-OF-STATE)	0.0
CORPORATIONS PAY A QUALIFICATION FEE WHICH IS ALSO BASED ON 10	0.0
PER $1000 OF AUTHORIZED CAPITAL STOCK FOR A CERTIFICATE OF AUTH-	0.0
ORITY TO DO BUSINESS IN THE STATE.	0.0
MINIMUM FEE $20 MAXIMUM FEE $5000	0.0
CORPORATE FRANCHISE TAX	0.0
AN ANNUAL FRANCHISE TAX IS ASSESSED AT THE RATE OF $.55 PER	0.0
$1000 AGAINST THE BOOK VALUE OF A CORPORATIONS AUTHORIZED AND	0.0
ISSUED CAPITAL STOCK REPRESENTED BY THE FIRMS PROPERTY AND	0.0
BUSINESS IN THE STATE. CORPORATIONS MAY FILE ON A FISCAL YEAR	0.0
BASIS, AND THE MINIMUM TAX IS $10 PER YEAR.	0.0
MUNICIPAL TAXES	0.0
OCCUPATIONAL LICENCE FEE OF $.60/$1,000 GROSS VOLUME OF	0.0
BUSINESS. MAXIMUM FEE =$500	0.0
SEVERANCE TAX	0.0
THIS TAX IS LEVIED AGAINST ANY MINERAL INDUSTRY THAT MINES A	0.0
NATURAL RESOURCE AND SEVERS IT FROM THE GROUND. IS BASED ON THE	0.0
VALUE OF THE MINERAL AT THE PLACE AND TIME IT WAS TAKEN OUT OF	0.0
THE GROUND OR AT ITS FIRST SALE POINT.	0.0
RATES COPPER = .5%, URANIUM = 1.0%, POTASH = 2.5% AND ALL	0.0
OTHERS = .125%.	0.0
GROSS RECEIPTS TAX	0.0
RATE GENERAL = 3.0%	0.0
EXCEPTIONS FIRMS ENGAGED IN MINING AND RELATED ACTIVITIES	0.0
(EXCEPT POTASH, COAL, OIL, GAS AND LIQUID HYDROCARBONS) ARE	0.0
TAXED AT .75%. LUMBER AND LUMBER MANUFACTURES .375% AND	0.0
ALCOHOLIC BEVERAGE WHOLESALERS AT .50%	0.0
CORPORATE INCOME TAX	0.0
RATE = 3.0% ON THE ENTIRE TAXABLE INCOME OF THE CORPORATION.	0.0

0	RESOURCES TAX	
71	TAX IS BASED ON THE PRIVILEGE OF SEVERING OR REMOVING FROM THE	0.0
72	GROUND AND (OR) PROCESSING MINERAL RESOURCES WITHIN THE STATE.	0.0
73	RATES = POTASH = 3%, ALL OTHER NATURAL RESOURCES = .75%. TAX	0.0
74	IS IMPOSED ON THE GROSS VALUE OF THE RESOURCE AT THE TIME IT	0.0
75	IS SEVERED.	0.0
76	PROCESSORS TAX	0.0
77	TAX PAYED FOR REFINING OR PROCESSING MINERALS AFTER THEY HAVE	0.0
78	BEEN SEVERED. THIS TAX IS GENERALLY IMPOSED ON THE GROSS VALUE	0.0
79	OF MINERAL AFTER PROCESSING.	0.0
80	RATES TIMBER = .375%, ALL OTHER NATURAL RESOURCES = .75%. IF	0.0
81	OPERATIONS INVOLVE EXTRACTING OR FELLING AND PROCESSING, ONLY	0.0
82	THE PROCESSING RATE OF THE SERVICE TAX APPLIES.	0.0
83	SERVICE TAX	0.0
84	THIS TAX IS IMPOSED ON AN INDUSTRY THAT SEVERS AND(OR) PROCESSES	0.0
86	A MINERAL WITHIN NEW MEXICO THAT IS OWNED BY SOMEONE OTHER THAN	0.0
87	THE SEVERER OR PROCESSOR. THE TAX IS APPLIED THE SAME AS THE	0.0
88	RESOURCES AND PROCESSORS TAXES ARE.	0.0
5		0.020
10		0.0
12		0.001
15		0.0
16		0.0
17		0.0
18		0.008
19		0.0
96		0.0
0	AVAILABLE INDUSTRIAL PROPERTIES	0.0
1	2 PLOTS	0.0
2	71 ACRES 104 ACRES	0.0
4	ELECTRIC POWER AND NATURAL GAS FACILITIES PROVIDED	0.0
3		104.000
4		0.0
0	CLIMATE	0.0
1	GENERAL DESCRIPTION SEMI-ARID CONTINENTAL WITH A DISTINCT SUMMER	0.0
2	RAINFALL MAXIMA. SUMMERS ARE WARM AND WINTERS ARE MILD.	0.0
3	ABUNDANT SUNSHINE, GENERALLY LOW RELATIVE HUMIDITIES.	0.0
4	AVERAGE ANNUAL RAINFALL =	0.0
5	DURING WINTER SOME PRECIPITATION FALLS AS SNOW	0.0
7	HIGH TEMPERATURE MID-MAY TO MID-SEPTEMBER 90-100+.	0.0
8	JANUARY AVERAGE DAYTIME SHADE TEMPERATURE =	0.0
9	DURING MID-WINTER ABOUT TWO-THIRDS OF THE NIGHTS SHOW LOW	0.0
10	READINGS BELOW THE FREEZING MARK.	0.0
11	AVERAGE HOURLY WIND VELOCITY=	0.0
12		0.0
0	TRANSPORTATION	0.0
1	RAILROAD SANTA FE RAILROAD SYSTEM	0.0
2	RATES BULK MINERAL ORE MATERIAL	0.0
3	TO CHICAGO CL = $13.50/TON, LCL (MOTOR TRANSPORT) = $8.50/100	0.0
4	LBS	0.0
5	TO DALLAS-FORT WORTH	0.0
6		0.0
7	TO LOS ANGELES CL = $15.50/TON.	0.0
8		0.0
9	DELIVERY TIMES - 2ND DAY KANSAS CITY	0.0
10	3RD DAY CHICAGO, DALLAS AND HOUSTON.	0.0
11	4TH DAY LOS ANGELES.	0.0
12	FACILITIES AVAILABLE FOR LCL.	0.0
13	MAJOR CONNECTIONS CAN ALSO BE MADE IN EL PASO WITH SOUTHERN	0.0
14	PACIFIC AND ROCK ISLAND RAILROADS, BUT AT PRESENT IT IS NOT A	0.0
15	CONVIENT CONNECTION	0.0
16	EAST OF KANSAS CITY ALL CARS MUST BE UNLOADED AND LOADED BY	0.0
17	COMPANY RECEIVING SHIPMENT.	0.0
18	MOTOR TRUCKING - ICX FREIGHT LINES AND WHITFIELD FREIGHT LINES.	0.0
19	RATES	0.0

GREATER = [illegible]				
TO DALLAS - FORT WORTH - LESS THAN 1000 LBS = $4.85/100 LBS, AND				0.0
1000 LBS BUT LESS THAN 2000 LBS = $4.29/100 LBS AND 2000 LBS OR				0.0
GREATER = $4.17/100 LBS.				0.0
TO LOS ANGELES - LESS THAN 5000 LBS = $9.71/100 LBS AND 5000 LBS				0.0
OR GREATER = $9.44.				0.0
OVERNIGHT TO EL PASO, TEXAS, AMARILLO, TEXAS, LUBBOCK, TEXAS AND				0.0
CLOVIS, NEW MEXICO				0.0
2ND MORNING TO DALLAS, TEXAS AND DENVER, COLORADO.				0.0
3RD MORNING TO LOS ANGELES, CALIFORNIA, PHOENIX, ARIZONA,				0.0
HOUSTON, TEXAS, KANSAS CITY, MISSOURI, ST LOUIS, MISSOURI.				0.0
4TH MORNING TO SALT LAKE CITY, UTAH AND CHICAGO, ILLINOIS				0.0
NO WATERWAY TRANSPORTATION AVAILABLE				800.000
				750.000
				0.0
				1620.000
				0.0
				0.0
LABOR				0.0
TOTAL SKILLED LABOR AS OF OCTOBER 25, 1968 = 151				0.0
PROFESSIONAL, TECHNICAL AND MANAGERIAL = 7.				0.0
CLERICAL = 21				0.0
SALES = 11				0.0
DOMESTIC = 9				0.0
SERVICE EXCEPT DOMESTIC = 23				0.0
FARMING AND FORESTRY = 7				0.0
MACHINE TRADES = 8				0.0
BENCH WORK = 3				0.0
STRUCTURAL = 23				0.0
MISC. = 16				0.0
ENTRY = 23				0.0
UNSKILLED LABOR =				0.0
EDDY COUNTY TOTAL EMPLOYMENT = 16,000				0.0
				0.0
POPULATION EDDY COUNTY = 48,000				0.0
LONG-RUN COUNTY POPULATION YEAR 1980 = 60,000				0.0
YEAR 2000 = 90,000				0.0
		PROVED RESERVES	LIFE INDEX	0.0
MINERAL RESOURCES	PRODUCTION	4.5E+7 BBLS	7.50 YEARS	0.0
CRUDE PETROLEUM	6.0E+6 BBLS	8.7E+11 CF	16.01 YEARS	0.0
NATURAL GAS	5.4E+10 CF	3.7E+7 BBLS	12.33 YEARS	0.0
ALLIED PRODUCTS	3.0E+6 BBLS			0.0
				0.227
				0.031
				0.112
				0.608
				1500.000
				3200.000
				0.0
				5700.000
				0.0
				0.0
CARLSBAD, NEW MEXICO				0.0
GEOGRAPHIC LOCATION = SOUTHEASTERN NEW MEXICO, EDDY COUNTY				0.0
CHARACTER OF SURROUNDING TERRITORY				0.0
ELEVATION = 3100 FEET				0.0
TERRAIN = RELATIVELY FLAT FARM LAND.				0.0
FLOOD HAZARDS VERY SLIGHT				0.0
5				0.0
0 UTILITIES				0.0
1 ELECTRIC POWER				0.0
2 SOUTHWESTERN PUBLIC SERVICE COMPANY 5,210 KVA MAXIMUM DEMAND				0.0
3 APPLICABLE TO ALL COMMERCIAL AND INDUSTRIAL ELECTRIC SERVICE				0.0
4 SUPPLIED AT ONE POINT OF DELIVERY AND MEASURED THROUGH ONE				0.0
7 KILOWATT-HOUR METER, WHERE FACILITIES OF ADEQUATE CAPACITY AND				

7	NOT APPLICABLE TO TEMPORARY, BREAKDOWN [illegible]	
8	RESALE OR SHARED SERVICE. NOT APPLICABLE TO CUSTOMERS HAVING	0.0
9	SEASONAL LOAD CHARACTERISTICS.	0.0
68	RATE - DEMAND PEAK CHARGE $370.00 FOR THE FIRST 200 KW, OR LESS,	0.0
11	OF DEMAND PER MONTH, $1.25 PER KW FOR ALL ADDITIONAL KW OF	0.0
69	DEMAND PER MONTH. ENERGY CHARGE - .75 PER KWH FOR THE FIRST	0.0
13	300 KWH USED PER MONTH PER KWH FOR ALL ADDITIONAL KWH USED PER	0.0
14	MONTH, WHICH EVER IS GREATER. .50 PER KWH FOR ALL ADDITIONAL	0.0
70	KWH USED PER MONTH.	0.0
16	DETERMINATION OF DEMAND - THE KW DETERMINED FROM COMPANY,S DE-	0.0
17	MAND METER FOR THE 30-MINUTE PERIOD OF CUSTOMER,S GREATEST KW	0.0
18	USE DURING THE MONTH, BUT NOT LESS THAN 60% OF THE HIGHEST DE-	0.0
19	MAND ESTABLISHED IN THE PRECEDING ELEVEN MONTHS.	0.0
20	PRIMARY SERVICE DISCOUNT - A DISCOUNT OF 3% WILL BE ALLOWED WHEN	0.0
21	SERVICE IS SUPPLIED AT A LINE VOLTAGE OF 13 KV, OR GREATER, AND	0.0
22	NO TRANSFORMATION IS MADE BY THE COMPANY AT THE CUSTOMERS	0.0
23	LOCATION.	0.0
24	POWER FACTOR ADJUSTMENT -BILLS COMPUTED UNDER THE ABOVE RATE	0.0
25	WILL BE INCREASED $0.25 FOR EACH KVAR BY WHICH THE REACTIVE	0.0
26	DEMAND EXCEEDS, NUMERICALLY, 0.53 TIMES THE MEASURED KW DEMAND,	0.0
27	AND WILL BE REDUCED $0.25 FOR EACH KVAR BY WHICH THE REACTIVE	0.0
28	DEMAND IS LESS THAN, NUMERICALLY, 0.40 TIMES THE MEASURED KW	0.0
29	DEMAND.	0.0
30	FUEL COST ADJUSTMENTS - THE NET CHARGE PER KILOWATT HOUR OF THE	0.0
31	ABOVE RATE SHALL BE INCREASED OR DECREASED 0.01 PER KWH FOR	0.0
32	EACH 0.5 INCREASE OR DECREASE, OR MAJOR FRACTION THEREOF, IN	0.0
33	THE DELIVERED COST OF GAS AT ALL OF THE COMPANY,S STEAM-ELECTRIC	0.0
34	GENERATING STATIONS ABOVE 12.5 OR BELOW 10.5 PER THOUSAND	0.0
35	CUBIC FEET DURING THE SECOND PRECEDING MONTH.	0.0
36	TAX ADJUSTMENT - THE AMOUNT OF THE BILLS COMPUTED UNDER THE	0.0
37	ABOVE RATE WILL BE INCREASED BY THE PROPORTIONATE PART OF ANY	0.0
38	PRESENT AND/OR NEW TAX, OR INCREASED RATE OF TAX, OR GOVERN-	0.0
39	MENTAL IMPOSITION(EXCEPT STATE, COUNTY, CITY AND SPECIAL DIS-	0.0
40	TRICT AD VALOREM TAXES) LEVIED OR ASSESSED AGAINST THE COMPANY	0.0
41	OR UPON ITS ELECTRIC BUSINESS, AS THE RESULT OF ANY PRESENT AND/	0.0
42	OR NEW OR AMENDED LAWS AFTER JUNE 1, 1957.	0.0
43	TYPE OF SERVICE - AC 60 CPS 52,100 KVA MAXIMUM DEMAND (3-PHASE)	0.0
44	IN 120, 240 AND 440 VOLTS. TRANSMISSION LINE = 230,000 VOLTS	0.0
45	CONTRACT PERIOD - A PERIOD OF NOT LESS THAN ONE YEAR.	0.0
46	NEGOTIATION POSSIBLE FOR LARGE POWER CONSUMER.	0.0
47	NATURAL GAS - SOUTHERN UNION GAS COMPANY.	0.0
48	DAILY SUPPLY - 15,000,000 MCF CAN BE INCREASED TO 20,000,000 MCF	0.0
49	BTU ANALYSIS - AT 14.7 PSIA 60 DEGREES F, 1,100 BTU/CU-FT	0.0
50	UNDER SOME CIRCUMSTANCES, RATES MAY BE SUBJECT TO NEGOTIATION.	0.0
51	COMMERCIAL AND INDUSTRIAL RATE - APPLICABLE TO COMMERCIAL AND	0.0
52	INDUSTRIAL CUSTOMERS FOR ALL USE IN OR IN CONNECTION WITH ANY	0.0
53	COMMERCIAL, BUSINESS OR INDUSTRIAL ACTIVITIES,	0.0
54	RATE -	0.0
55	FIRST 1 MCF PER MONTH AT $1.61 PER MCF.	0.0
56	NEXT 3 MCF PER MONTH AT $0.88 PER MCF.	0.0
57	NEXT 22 MCF PER MONTH AT $0.70 PER MCF.	0.0
58	NEXT 24 MCF PER MONTH AT $0.61 PER MCF.	0.0
59	NEXT 100MCF PER MONTH AT $0.50 PER MCF.	0.0
60	EXCESS MCF PER MONTH AT $0.41 PER MCF.	0.0
61	TELEPHONE SERVICE = GENERAL TELEPHONE COMPANY OF THE SOUTHWEST	0.0
62	BUSINESS ONE PARTY = $12.50/MONTH.	0.0
63	TELEGRAPH = WESTERN UNION.	0.0
64	WATER	0.0
65	TOTAL DAILY CAPACITY FOR PUMPING AND PROCESSING = 20,000,000 GAL	0.0
66	RATES - FIRST 3,000 GAL = $3.00, EACH ADD 1,000 GAL = $0.24	0.0
3 5		24.000
310		0.450
312		125.000
315		24.000
367		0.0

	COMPENSATING OR USE TAX - AN EXCISE TAX	0.0
	PRICE IS LEVIED UPON OUT-OF-STATE PURCHASES OF TANGIBLE PERSONAL	0.0
	PROPERTY FOR USE, STORAGE, OR CONSUMPTION IN NEW MEXICO.	0.0
	PROPERTY BECOMING A COMPONENT PART OF ANY MANUFACTURED ARTICLE	0.0
	IS EXEMPT, AS ARE CHEMICALS AND REAGENTS USED IN THE PROCESSING	0.0
	OF OILS AND MINERALS	0.0
	FREEPORT LAW	0.0
	TAX LAW EXEMPTS FROM PROPERTY TAX PERSONAL PROPERTY(COMMODITIES)	0.0
	THAT ARE MOVING IN INTERSTATE COMMERCE OR THAT ARE IN STORAGE IN	0.0
	THE STATE AND DESTINED TO BE SHIPPED OUT-OF-STATE	0.0
	PROPERTY TAXES	0.0
	THE ASSESSMENT RATIO IN NEW MEXICO IS 33.3% OF FAIR MARKET VALUE	0.0
	SEVERANCE TAX	0.0
	TAX IS LEVIED AGAINST ANY MINERAL INDUSTRY THAT MINES A NATURAL	0.0
	RESOURCE AND SEVERS IT FROM THE GROUND. IS BASED ON THE VALUE	0.0
	OF THE MINERAL AT THE PLACE AND TIME IT WAS TAKEN OUT OF THE	0.0
	GROUND OR AT ITS FIRST SALE POINT. COPPER = .5%, URANIUM = 1%,	0.0
	POTASH = 2.5% AND ALL OTHER = .125%.	0.0
	GROSS RECEIPTS TAX	0.0
	IT IS 3%, EXCEPT THAT FIRMS ENGAGED IN MINING AND RELATED	0.0
	ACTIVITIES(EXCEPT POTASH, COAL, OIL, GAS AND LIQUID HYDROCARBONS	0.0
	) ARE TAXED AT .75%. LUMBER AND LUMBER MANUFACTURED .375% AND	0.0
	ALCOHOLIC BEVERAGE WHOLESALERS AT .50%.	0.0
	CORPORATE INCOME TAX	0.0
	RATE IS A FLAT 3% ON THE ENTIRE TAXABLE INCOME OF THE CORPORA-	0.0
	TION. FEDERAL INCOME TAX IS DEDUCTIBLE FROM GROSS INCOME.	0.0
	RESOURCES TAX	0.0
	RESOURCE EXCISE TAX BASED ON THE PRIVILEGE OF SEVERING OR RE-	0.0
	MOVING FROM THE GROUND AND (OR) PROCESSING MINERAL RESOURCES	0.0
	WITHIN THE STATE. POTASH = 3%. ALL OTHER NATURAL RESOURCES =	0.0
	.75%. TAX IS IMPOSED ON THE GROSS VALUE OF THE RESOURCE AT THE	0.0
	TIME IT IS SEVERED.	0.0
	PROCESSORS TAX	0.0
	TAX PAYED FOR REFINING OR PROCESSING MINERALS AFTER THEY HAVE	0.0
	BEEN SEVERED. THIS TAX IS GENERALLY IMPOSED ON THE GROSS VALUE	0.0
	OF MINERAL AFTER PROCESSING. TIMBER = .375%. ALL OTHER NATURAL	0.0
	RESOURCES = .75%. IF OPERATIONS INVOLVE EXTRACTING OR FELLING	0.0
	AND PROCESSING, ONLY THE PROCESSING RATE OF THE SERVICE TAX	0.0
	APPLIES.	0.0
	SERVICE TAX	0.0
	THE SERVICE TAX IS IMPOSED ON AN INDUSTRY THAT SEVERS AND(OR)	0.0
	PROCESSES A MINERAL WITHIN NEW MEXICO THAT IS OWNED BY SOMEONE	0.0
	OTHER THAN THE SEVERER OR PROCESSOR. THE TAX IS APPLIES THE	0.0
	SAME AS THE RESOURCES AND PROCESSORS TAXES ARE.	0.0
	MUNICIPAL TAXES = OCCUPATIONAL LICENSE FEE OF $.75/$1000, ON THE	0.0
	GROSS VOLUME OF BUSINESS CONDUCTED BY THE FIRM WITHIN THE CITY	0.0
	LIMITS.	0.020
5		0.0
10		0.001
12		0.010
15		0.0
16		0.0
17		0.008
18		0.0
19		0.0
22		0.0
	AVAILABLE INDUSTRIAL PROPERTIES	0.0
	TWO MAJOR AREAS ARE AVAILABLE	0.0
	ONE SITE CONTAINS A TOTAL OF 105 ACRES. IT IS OWNED BY THE	0.0
	CARLSBAD DEVELOPMENT FOUNDATION. UTILITIES INCLUDING WATER ARE	0.0
	AVAILABLE IN THE AREA. SITE IS ADJACENT TO THE SANTA FE RAIL-	0.0
	ROAD TRACK.	0.0
	THE SECOND SITE IS 490 ACRES LOCATED ADJACENT TO THE CARLSBAD	0.0
	MUNICIPAL AIRPORT. THE AREA IS OWNED BY THE CITY. IT HAS ITS	0.0
	OWN WATER WELLS WITH A CAPACITY OF 1.5 MILLION GPD. THERE IS A	0.0

3		
1		0.0
0	CLIMATE	0.0
1	GENERAL DESCRIPTION - SEMI-ARID CONTINENTAL WITH SUMMER RAINFALL	0.0
2	MAXIMA.	0.0
4	SUMMERS ARE WARM, WINTERS ARE MILD	0.0
5	ABUNDANT SUNSHINE WITH GENERALLY LOW RELATIVE HUMIDITIES.	0.0
6	AVERAGE ANNUAL RAINFALL = 12 IN.	0.0
7	DURING WINTER SOME PRECIPITATION FALLS AS SNOW OCCASIONALLY	0.0
8	EXCEEDING 6 INCHES IN 24 HOURS.	0.0
9	HIGH TEMPERATURE MID-MAY THROUGH MID-SEPTEMBER 90-100+.	0.0
0	JANUARY AVERAGE DAYTIME SHADE TEMPERATURE = 60 DEGREES F.	0.0
1	DURING MID-WINTER ABOUT TWO-THIRDS OF THE NIGHTS SHOW LOW	0.0
3	AVERAGE HOURLY WIND VELOCITY = 12.3 MPH	0.0
4	VELOCITY OF WIND EXCEEDS 31 MPH 3% OF THE TIME.	0.0
5		0.0
0	TRANSPORTATION	0.0
1	RAILROADS	0.0
2	SANTA FE RAILWAY SYSTEM	0.0
3	RATES	0.0
4	TO CHICAGO FOR MINERAL ORE MATERIAL CL = $13.50/TON LCL =	0.0
5	$8.50/100LBS.	0.0
6	TO CHICAGO FOR ELECTRIC COMPONENTS CL= $4.50/TON 20,000 LBS	0.0
7	AND $6.75/TON BETWEEN 10,000 TO 20,000 LBS. MINIMUM = 10,000	0.0
8	LBS. EAST OF KANSAS CITY ALL CARS MUST BE UNLOADED AND LOADED	0.0
9	BY COMPANY RECEIVING OR SENDING MATERIAL.	0.0
10	DELIVERY TIMES	0.0
11	KANSAS CITY 2ND DAY	0.0
12	CHICAGO 3RD DAY	0.0
13	DALLAS 3RD DAY	0.0
14	HOUSTON 3RD DAY	0.0
15	LOS ANGELES 4TH DAY	0.0
16	LCL TRAFFIC LEAVES BY TRUCK.	0.0
17	MOTOR TRUCKING	0.0
18	ICX TRUCKING LINES AND WHITFIELD FREIGHT LINES	0.0
19	DAILY SERVICE	0.0
20	OVERNIGHT TO EL PASO, AMARILLO, LUBBOCK AND CLOVIS.	0.0
21	2ND MORNING TO DALLAS, DENVER.	0.0
22	3RD MORNING TO LOS ANGELES, PHOENIX, HOUSTON, KANSAS CITY, AND	0.0
23	ST LOUIS	0.0
24	4TH MORNING TO SALT LAKE CITY AND CHICAGO	0.0
25	RATES	0.0
26	TO CHICAGO - LESS THAN 1500 LBS = $8.67/100 LBS AND 1500	0.0
27	OR GREATER = $8.04/100 LBS.	0.0
28	TO DALLAS - FORT WORTH - LESS THAN 1000 LBS = $4.83/100 LBS,	0.0
29	1000 LBS BUT LESS THAN 2000 LBS = $4.29/100 LBS AND 2000 LBS OR	0.0
30	GREATER = $4.17/100 LBS.	0.0
31	TO LOS ANGELES - LESS THAN 5000 LBS = $9.71/100 LBS AND 5000 OR	0.0
32	GREATER = $9.44/100 LBS	0.0
33	NO WATERWAY TRANSPORTATION AVAILABLE	0.0
35		550.000
36		525.000
37		0.0
38		1620.000
39		0.0
0	LABOR	0.0
1	TOTAL SKILLED LABOR AS OF OCTOBER 25, 1968 = 465	0.0
2	TECHNICAL AND MANAGERIAL 17	0.0
3	CLERICAL 43	0.0
4	SALES 27	0.0
5	DOMESTIC 18	0.0
6	SERVICE EXCEPT DOMESTIC 107	0.0
7	FARMING AND FORESTRY 18	0.0
7	PROCESSING 14	0.0
8	MACHINE TRADES 25	0.0

COMPANY WILL SUPPLY AND METER SERVICE AT ITS MOST AVAILABLE 0.0
PRIMARY DISTRIBUTION VOLTAGE. STEP DOWN TRANSFORMERS AND 0.0
PROTECTIVE DEVICES SHALL BE FIRNISHED, INSTALLED, AND MAINTAINED 0.0
BY CUSTOMER. 0.0
NATURAL GAS - 0.0
HOBBS GAS COMPANY 0.0
COMMERCIAL RATES 0.0
FIRST MCF $1.75 0.0
NEXT 2 MCF $.75 PER MCF 0.0
NEXT 19 MCF $.60 PER MCF 0.0
SPECIAL CITY COMMERCIAL AND INDUSTRIAL RATE 0.0
$50 MINIMUM FOR FIRST 100 MCF 0.0
$.39 PER MCF IN EXCESS OF 100 MCF 0.0
VERY LARGE INDUSTRIAL CONSUMER = $.25 PER MCF OR MILLION BTU 0.0
TELEPHONE SERVICE = GENERAL TELEPHONE COMPANY OF THE SOUTHWEST 0.0
BUSINESS ONE PARTY = $12.50/MONTH 0.0
TELEGRAPH = WESTERN UNION 0.0
WATER 0.0
RATES 0.0
FIRST 3,000 GALLONS $3.50 0.0
NEXT 2,000 GALLONS $0.74 ($0.37/THOUSAND) 0.0
NEXT 5,000 GALLONS $1.75 ($0.35/THOUSAND) 0.0
NEXT 10,000 GALLONS $3.30 ($0.33/THOUSAND) 0.0
NEXT 20,000 GALLONS $6.00($0.30/THOUSAND) 0.0
NEXT 40,000 GALLONS $10.80 ($0.27/THOUSAND) 0.0
NEXT 80,000 GALLONS $19.20 ($0.24/THOUSAND) 0.0
NEXT 100,000 GALLONS $24.20 ($0.22/THOUSAND) 0.0
ABOVE 320,000 GALLONS $69.49+$0.20/THOUSAND IN EXCESS OF 320,000 0.0
23.000
0.425
150.000
20.000
0.0
TAXES 0.0
COMPENSATING OR USE TAX = AN EXCESE TAX OR 3% OF THE PURCHASE 0.0
PRICE IS LEVIED UPON OUT-OF-STATE PURCHASES OF TANGIBLE PERSONAL 0.0
PROPERTY FOR USE, STORAGE, OR CONSUMPTION IN NEW MEXICO. 0.0
PROPERTY BECOMING A COMPONENT PART OF ANY MANUFACTURED ARTICLE 0.0
IS EXEMPT, AS ARE CHEMICALS AND R5A7ENTS USED IN THE PROCESSING 0.0
OF OILS AND MINERALS 0.0
FREEPORT LAW 0.0
TAX LAW EXEMPTS FROM PROPERTY TAX PERSONAL PROPERTY(COMMODITIES) 0.0
THAT ARE MOVING IN INTERSTATE COMMERCE OR THAT ARE IN STORAGE IN 0.0
THE STATE AND DESTINED TO BE SHIPPED OUT-OF-STATE 0.0
PROPERTY TAXES 0.0
THE ASSESSMENT RATIO IN NEW MEXICO IS 33.3% OF FAIR MARKET VALUE 0.0
SEVERANCE TAX 0.0
TAX IS LEVIED AGAINST ANY MINERAL INDUSTRY THAT MINES A NATURAL 0.0
RESOURCE AND SEVERS IT FROM THE GROUND. IS BASED ON THE VALUE 0.0
OF THE MINERAL AT THE PLACE AND TIME IT WAS TAKEN OUT OF THE 0.0
GROUND OR AT ITS FIRST SALE POINT. COPPER = .5%, URANIUM = 1%, 0.0
POTASH = 2.5% AND ALL OTHER = .125%. 0.0
GROSS RECEIPTS TAX 0.0
IT IS 3%, EXCEPT THAT FIRMS ENGAGED IN MINING AND RELATED 0.0
ACTIVITIES(EXCEPT POTASH, COAL, OIL, GAS AND LIQUID HYDROCARBONS 0.0
)ARE TAXED AT .75%. LUMBER AND LUMBER MANUFACTURED .375% AND 0.0
ALCOHOLIC BEVERAGE WHOLESALERS AT .50%. 0.0
CORPORATE INCOME TAX 0.0
RATE IS A FLAT 3% ON THE ENTIRE TAXABLE INCOME OF THE CORPORA- 0.0
TION. FEDERAL INCOME TAX IS DEDUCTABLE FROM GROSS INCOME. 0.0
RESOURCES TAX 0.0
RESOURCE EXCISE TAX BASED ON THE PRIVILEGE OF SEVERING OR 0.0
REMOVING FROM THE GROUND AND (OR) PROCESSING MINERAL RESOURCES 0.0
WITHIN THE STATE. POTASH = 3%. ALL OTHER NATURAL RESOURCES = 0.0
.75%. TAX IS IMPOSTED ON THE GROSS VALUE OF THE RESOURCES AT TH 0.0

```
0433  PROCESSORS TAX                                                    0.0
0434  TAX PAYED FOR REFINING OR PROCESSING MINERALS AFTER THEY HAVE     0.0
0435  BEEN SEVERED.  THIS TAX IS GENERALLY IMPOSTED ON THE GROSS VALUE  0.0
0436  OF MINERAL AFTER PROCESSING.  TIMBER = .375%.  ALL OTHER NATURAL  0.0
0437  RESOURCES = .75%.  IF OPERATIONS INVOLVE EXTRACTING OR FELLING    0.0
0438  AND PROCESSING, ONLY THE PROCESSING RATE OF THE SERVICE TAX       0.0
0439  APPLIES                                                           0.0
0440  SERVICE TAX                                                       0.0
0441  THE SERVICE TAX IS IMPOSED ON AN INDUSTRY THAT SEVERS AND(OR)     0.0
0442  PROCESSES A MINERAL WITHIN NEW MEXICO THAT IS OWNED BY SOMEONE    0.0
0443  OTHER THAN THE SEVERER OR PROCESSOR.  THE TAX IS APPLIED THE      0.0
0445  SAME AS THE RESOURCES AND PROCESSORS TAXES ARE.                   0.0
0446  MUNICIPAL TAXES                                                   0.0
0447  1PER CENT SALES TAX                                               0.0
0455                                                                    0.020
0410                                                                    0.0
0412                                                                    0.001
0415                                                                    0.010
0416                                                                    0.0
0417                                                                    0.0
0418                                                                    0.008
0419                                                                    0.0
0456                                                                    0.0
0510  AVAILABLE INDUSTRIAL PROPERTIES                                   0.0
0511  THE HOBBS AREA HAS SEVERAL POTENTIAL INDUSTRIAL PROPERTIES WHICH  0.0
0512  ARE HIGHLY FAVORABLE PLANT SITE FOR NEW INDUSTRY                  0.0
0521  SOME 5,000 ACRES ARE INCLUDED                                     0.0
0514  OPPORTUNITY FOR LOCAL PLANT EXPANSION AND SITES FOR NEW           0.0
0515  INDUSTRIES ARE READILY AVIALABLE IN SCATTERED LOCATIONS NEAR      0.0
0516  RAILROADS, ALONG MAJOR HIGHWAYS, OUTSIDE AND INSIDE THE CITY      0.0
0517  LIMITS, AND AT THE HOBBS AIR BASE INDUSTRIAL DISTRICT, 5 MILES    0.0
0518  NORTHWEST OF THE HOBBS CITY LIMITS.                               0.0
0519  THE AIR BASE INDUSTRIAL SITE                                      0.0
0510  PROPERTY DEEDED TO THE CITY OF HOBBS                              0.0
0511  2,860 ACRES.                                                      0.0
0512  FAVORABLE PURCHASING OR LEASING ARRANGEMENTS CAN BE OBTAINED      0.0
0513  EIGHT THOUSAND ACRE FEET PER YEAR OF WATER RIGHTS ARE AVAILABLE   0.0
0514  RAILROAD SPUR LINES IN PLACE                                      0.0
0515  WATER MAINS ARE IN PLACE AND A SEWAGE DISPOSAL PLANT WITH         0.0
0516  COLLECTION MAINS ARE PRESENT                                      0.0
0517  12.5 KV LINES ARE IN PLACE                                        0.0
0518  AN 8 INCHES HIGH PRESSURE NATURAL GAS LINE IS IN PLACE            0.0
0520  PROPERTY FRONTS ON A MAJOR STATE HIGHWAY                          0.0
0513                                                                    5000.000
0522                                                                    0.0
0610  CLIMATE                                                           0.0
0611  SEMI-ARID CONTINENTAL WITH SUMMER RAINFALL MAXIMA                 0.0
0612  AVERAGE ANNUAL RAINFALL = 15 INCHES PER YEAR                      0.0
0613  AVERAGE TEMPERATURE  80 DEGREES DAYTIME AND 45 DEGREES NIGHT      0.0
0614                                                                    0.0
0710  TRANSPORTATION                                                    0.0
0711  RAILROAD                                                          0.0
0712  TEXAS PACIFIC RAILROAD COMPANY                                    0.0
0713  RATES                                                             0.0
0714                                                                    0.0
0715                                                                    0.0
0716                                                                    0.0
0717                                                                    0.0
0718                                                                    0.0
0719                                                                    0.0
0710                                                                    0.0
0711                                                                    0.0
0712                                                                    0.0
0713                                                                    0.0
0714                                                                    0.0
```

0.0
0.0
0.0
550.000
525.000
0.0
1620.000
0.0
0.0

LABOR
THE HOBBS AND LEA COUNTY LABOR DRAWING AREA CURRENTLY HAS A
POPULATION OF APPROXIMATELY 55,000.
RECENT STUDIES ESTIMATE THAT NEW JOB OPPORTUNITIES COULD ATTRACT
A TOTAL OF AT LEAST 850 MALE APPLICANTS.
SOME 800-1000 FEMALES WOULD BE AVAILABLE FOR WORK IF NEW
EMPLOYMENT OPPORTUNITIES WERE PROVIDED
IT IS THE OPINION OF BUSINESSMEN IN THE AREA THAT NEW EMPLOYERS
SEEKING TO STAFF A PLANT WITH 300-500 PERSONS COULD EXERCISE A
HIGH DEGREE OF SELECTION IN SCREENING CANDIDATES.
INDUSTRIAL LABOR UNIONS ARE NOT DEEPLY ENTRENCHED IN THE AREA.
POOR WORK HABITS, CHARACTERISTIC OF MANY INDUSTRIAL MATURE
COMMUNITIES, HAVE NOT BECOME INGRAINED IN THE HOBBS AND LEA
COUNTY LABOR FORCE.
THE LOCAL LABOR OFFICE FEELS THAT FEMALES COULD BE ATTRACTED TO
MANUFACTURING JOBS FOR EARNINGS OF $50 TO $60 PER WEEK.
PREVAILING MALE WAGE RATES, WHICH ARE MEANINGFUL TO POTENTIAL
LEA COUNTY MANUFACTURING CONCERNS, VARY BETWEEN $1.25 TO $3.00
PER HOUR.
OCCUPATIONAL GROUP DISTRIBUTION OF JOB APPLICANTS IN HOBBS
TOTAL = 357 AS OF OCTOBER 25, 1968
PROFESSIONAL AND TECHNICAL = 16
CLERICAL = 67
SALES = 32
DOMESTIC = 23
SERVICE EXCEPT DOMESTIC = 40
FARMING FORESTRY = 8
PROCESSING = 4
MACHINE TRADES = 10
BENCH WORK = 5
STRUCTURAL WORK = 28
MISC = 44
ENTRY = 80
LEA COUNTY EMPLOYMENT
EMPLOYMENT TOTAL 1966 19,900
AGRICULTURE = 1000
NON-AGRICULTURE = 18,900
SELF-EMPLOYED = 1,940
WAGE AND SALARY = 17,050
MINING = 4,980
CONSTRUCTION = 1,010
MANUFACTURING = 710
TRANSPORTATION AND UTILITIES = 2,050
TRADE = 3,360
FIN., INS. AND R.E. = 470
SERVICES AND MISC. = 2,320
GOVERNMENT = 2,150

POPULATION
LEA COUNTY = 49,000
PROJECTED POPULATION YEAR 1980 = 75,000
OPULATION BY YEAR 2000 = 120,000

MINERAL	RESOURCES		
PRODUCT	PRODUCTION	PROVED RESERVES	LIFE INDEX
CRUDE PET	110,241,000 BBLS	856,000,000 BBLS	7.78 YEARS

009	ALLIED, PRO 42,000,000 BBLS	24,000,000 BBLS	11.22 YEARS	0.0
010				0.227
011				0.021
012				0.112
013				0.608
014				1500.000
015				3200.000
016				0.0
017				5700.000

```
      IMPLICIT INTEGER(A-Z)
      REAL LABNED,MANDAY,VALUE,SETLA,PRICE,PROPER,CAPINV,FAPRI,GROSS,
     1RI,CAPAC
      COMMON/ZERO/R000,A000,C000,H000
      COMMON/FIRST/NAME,CODE,DATA,VALUE
      COMMON/SECOND/GROSS,FAPRI,CAPINV
      COMMON/THIRD/PROPER
      COMMON/FORTH/MANDAY,LABNED,CAPAC
      COMMON/SIXTH/PRICE
      COMMON/EIGHT/SETLA
      COMMON/ONE/R001,A001,C001,H001
      COMMON/TWO/R002,A002,C002,H002
      COMMON/THREE/R003,A003,C003,H003
      COMMON/FOUR/R004,A004,C004,H004
      COMMON/FIVE/R005,A005,C005,H005
      COMMON/SIX/R006,A006,C006,H006
      COMMON/NINE/R007,A007,C007,H007
      COMMON/TEN/R008,A008,C008,H008
      COMMON/EVEVEN/R009,A009,C009,H009
      SETLA=(12550000./720000.)
      LABNED=174.*360.
      MANDAY=3500.
      PRICE=13000.
      PROPER=370.
      CAPINV=.35E+10
      FAPRI=13000.*720000.
      GROSS=13000.*720000.
      COPRI=19000.*72000.
  200 CAPAC=2000.*360.
      DIMENSION DATA(16)
    1 READ(1,10,END=25) NAME,CODE,DATA,VALUE
   10 FORMAT(1A4,I2,2X,16A4,F8.3)
  100 IF(NAME.EQ.R000.OR.NAME.EQ.A000.OR.NAME.EQ.C000.OR.NAME.EQ.H00
     1GO TO 500
      GO TO 900
  500 WRITE(6,300)
  300 FORMAT('1')
      GO TO 1
  900 IF(NAME.EQ.R001.OR.NAME.EQ.A001.OR.NAME.EQ.C001.OR.NAME.EQ.H00
     1GO TO 2
      GO TO 3
    2 CALL LOCA(&1)
    3 IF(NAME.EQ.R002.OR.NAME.EQ.A002.OR.NAME.EQ.C002.OR.NAME.EQ.H00
     1GO TO 4
      GO TO 5
    4 CALL CHAR(&1)
    5 IF(NAME.EQ.R003.OR.NAME.EQ.A003.OR.NAME.EQ.C003.OR.NAME.EQ.H00
     1GO TO 6
      GO TO 7
    6 CALL UTIL(&1)
    7 IF(NAME.EQ.R004.OR.NAME.EQ.A004.OR.NAME.EQ.C004.OR.NAME.EQ.H00
     1GO TO 8
      GO TO 9
    8 CALL TAX(&1)
    9 IF(NAME.EQ.R005.OR.NAME.EQ.A005.OR.NAME.EQ.C005.OR.NAME.EQ.H00
     1GO TO 12
      GO TO 13
```

```
0051              12 CALL PROP(&1)
0052              13 IF(NAME.EQ.R006.OR.NAME.EQ.A006.OR.NAME.EQ.C006.OR.NAME.EQ.H0C
                    1GO TO 14
0053                  GO TO 15
0054              14 CALL CLIM(&1)
0055              15 IF(NAME.EQ.R007.OR.NAME.EQ.A007.OR.NAME.EQ.C007.OR.NAME.EQ.H0C
                    1GO TO 16
0056                  GO TO 17
0057              16 CALL TRAN(&1)
0058              17 IF(NAME.EQ.R008.OR.NAME.EQ.A008.OR.NAME.EQ.C008.OR.NAME.EQ.H00
                    1GO TO 18
0059                  GO TO 19
0060              18 CALL LABOR(&1)
0061              19 IF(NAME.EQ.R009.OR.NAME.EQ.A009.OR.NAME.EQ.C009.OR.NAME.EQ.H00
                    1GO TO 22
0062                  GO TO 23
0063              22 CALL POPU(&1)
0064              23 IF(NAME.EQ.R010.OR.NAME.EQ.A010.OR.NAME.EQ.C010.OR.NAME.EQ.H01
                    1GO TO 24
0065              24 CALL MINE(&1)
0066              25 CALL AMOR
0067                 CALL MAINT
0068                 CALL COST
0069                 CALL EVAL
0070                 CALL TABLE
0071                 STOP
0072                 END
```

TOTAL MEMORY REQUIREMENTS 0009F8 BYTES

```
FORTRAN IV     MODEL 44  PS        VERSION 3   LEVEL 1   DATE  69197      NEW MEXI(

0001                SUBROUTINE LOCA(*)
0002                INTEGER CODE,DATA,R001,A001,C001,H001
0003                DIMENSION DATA(16)
0004                COMMON/FIRST/NAME,CODE,DATA,VALUE
0005                COMMON/ONE/R001,A001,C001,H001
0006                IF(NAME.EQ.R001) GO TO 4
0007                IF(NAME.EQ.A001) GO TO 5
0008                IF(NAME.EQ.C001) GO TO 6
0009                IF(NAME.EQ.H001) GO TO 7
0010              4 IF(CODE.EQ.00)GO TO 8
0011                GO TO 9
0012              8 WRITE(6,10)
0013             10 FORMAT(1X,'ROSWELL')
0014                WRITE(6,100)
0015            100 FORMAT(1X,100('-'))
0016              9 WRITE(6,12) DATA
0017             12 FORMAT(1X,16A4)
0018                RETURN 1
0019              5 IF(CODE.EQ.00)GO TO 18
0020                GO TO 19
0021             18 WRITE(6,13)
0022             13 FORMAT(1X,'ARTESIA')
0023                WRITE(6,100)
0024             19 WRITE(6,12) DATA
0025                RETURN 1
0026              6 IF(CODE.EQ.00)GO TO 20
0027                GO TO 21
0028             20 WRITE(6,15)
0029             15 FORMAT(1X,'CARLSBAD')
0030                WRITE(6,100)
0031             21 WRITE(6,12) DATA
0032                RETURN 1
0033              7 IF(CODE.EQ.00)GO TO 22
0034                GO TO 23
0035             22 WRITE(6,17)
0036             17 FORMAT(1X,'HOBBS')
0037                WRITE(6,100)
0038             23 WRITE(6,12) DATA
0039                RETURN 1
0040                END


TOTAL MEMORY REQUIREMENTS 000448 BYTES
```

```
FTRAN IV    MODEL 44  PS       VERSION 3   LEVEL 1   DATE  69197      NEW MEXIC

0001              SUBROUTINE CHAR(*)
0002              INTEGER CODE,DATA,R002,A002,C002,H002
0003              DIMENSION DATA(16)
0004              COMMON/FIRST/NAME,CODE,DATA,VALUE
0005              COMMON/TWO/R002,A002,C002,H002
0006              IF(NAME.EQ.R002) GO TO 4
0007              IF(NAME.EQ.A002) GO TO 5
0008              IF(NAME.EQ.C002) GO TO 6
0009              IF(NAME.EQ.H002) GO TO 7
0010            4 IF(CODE.EQ.00)GO TO 8
0011              GO TO 9
0012            8 WRITE(6,10)
0013           10 FORMAT(1X,'ROSWELL')
0014              WRITE(6,100)
0015          100 FORMAT(1X,100('-'))
0016            9 WRITE(6,12) DATA
0017           12 FORMAT(1X,16A4)
0018              RETURN 1
0019            5 IF(CODE.EQ.00)GO TO 18
0020              GO TO 19
0021           18 WRITE(6,13)
0022           13 FORMAT(1X,'ARTESIA')
0023              WRITE(6,100)
0024           19 WRITE(6,12) DATA
0025              RETURN 1
0026            6 IF(CODE.EQ.00)GO TO 20
0027              GO TO 21
0028           20 WRITE(6,15)
0029           15 FORMAT(1X,'CARLSBAD')
0030              WRITE(6,100)
0031           21 WRITE(6,12) DATA
0032              RETURN 1
0033            7 IF(CODE.EQ.00)GO TO 22
0034              GO TO 23
0035           22 WRITE(6,17)
0036           17 FORMAT(1X,'HOBBS')
0037              WRITE(6,100)
0038           23 WRITE(6,12) DATA
0039              RETURN 1
0040              END


OTAL MEMORY REQUIREMENTS 000448 BYTES
```

```
      SUBROUTINE UTIL(*)
      INTEGER CODE,DATA,R003,A003,C003,H003
      DIMENSION DATA(16)
      COMMON/FIRST/NAME,CODE,DATA,VALUE
      COMMON/UTILIT/TCOSR,TCOSA,TCOSC,TCOSH
      COMMON/THREE/R003,A003,C003,H003
      GAS=3.0*60000.
      ELEC=18.*60000.
      DEMA=10000.
      WATE=270.*60000.
      IF(NAME.EQ.R003) GO TO 2
      IF(NAME.EQ.A003) GO TO 3
      IF(NAME.EQ.C003) GO TO 4
      IF(NAME.EQ.H003) GO TO 5
    2 IF(CODE.EQ.05)GO TO 12
      IF(CODE.EQ.10)GO TO 13
      IF(CODE.EQ.12)GO TO 14
      IF(CODE.EQ.15)GO TO 15
      RETURN 1
   12 WRITE(6,10)
   10 FORMAT(1X,'TOTAL UTILITY COST AT ROSWELL')
      GOST=VALUE
      CGAS=GAS*GOST
      RETURN 1
   13 EOST=VALUE
      CELE=EOST*ELEC
      RETURN 1
   14 DOST=VALUE
      IF(NAME.EQ.H003)GO TO 160
      CDEM=DOST*(DEMA-200.)+37000.
      GO TO 170
  160 CDEM=DOST*(DEMA-200.)+37500.
  170 RETURN 1
   15 WOST=VALUE/1000.
      CWAT=300.+WOST*(WATE-3000.)
      TCOSR=(CGAS+CELE+CDEM+CWAT)/60000.
      WRITE(6,40)
   40 FORMAT(//,1X,49('*'))
      WRITE(6,20) TCOSR
   20 FORMAT(1X,'*',F7.2,'CENTS - COST PER TON OF FINISHED PRODUCT*'
      WRITE(6,60)
   60 FORMAT(1X,49('*'),//)
      RETURN 1
    3 IF(CODE.EQ.05) GO TO 22
      IF(CODE.EQ.10) GO TO 23
      IF(CODE.EQ.12) GO TO 24
      IF(CODE.EQ.15) GO TO 25
      RETURN 1
   22 WRITE(6,30)
   30 FORMAT(1X,'TOTAL UTILITY COST AT ARTESIA')
      GOST=VALUE
      CGAS=GAS*GOST
      RETURN 1
   23 GO TO 13
   24 GO TO 14
   25 WOST=VALUE/1000.
      CWAT=300.+WOST*(WATE-5000.)
```

```
      TCOSA=(CGAS+CELE+CDEM+CWAT)/60000.
      WRITE(6,40)
      WRITE(6,20) TCOSA
      WRITE(6,60)
      RETURN 1
    4 IF(CODE.EQ.05) GO TO 32
      IF(CODE.EQ.10) GO TO 33
      IF(CODE.EQ.12) GO TO 34
      IF(CODE.EQ.15) GO TO 35
      RETURN 1
   32 WRITE(6,50)
   50 FORMAT(1X,'TOTAL UTILITY COST AT CARLSBAD')
      GOST=VALUE
      CGAS=GAS*GOST
      RETURN 1
   33 GO TO 13
   34 GO TO 14
   35 WOST=VALUE/1000.
      CWAT=300.+WOST*(WATE-3000.)
      TCOSC=(CGAS+CELE+CDEM+CWAT)/60000.
      WRITE(6,40)
      WRITE(6,20) TCOSC
      WRITE(6,60)
      RETURN 1
    5 IF(CODE.EQ.05) GO TO 42
      IF(CODE.EQ.10) GO TO 43
      IF(CODE.EQ.12) GO TO 44
      IF(CODE.EQ.15) GO TO 45
      RETURN 1
   42 WRITE(6,70)
   70 FORMAT(1X,'TOTAL UTILITY COST AT HOBBS')
      GOST=VALUE
      CGAS=GAS*GOST
      RETURN 1
   43 GO TO 13
   44 GO TO 14
   45 WOST=VALUE/1000.
      CWAT=6949.+WOST*(WATE-320000.)
      TCOSH=(CGAS+CELE+CDEM+CWAT)/60000.
      WRITE(6,40)
      WRITE(6,20) TCOSH
      WRITE(6,60)
      RETURN 1
      END
```

AL MEMORY REQUIREMENTS 000938 BYTES

12	THE ASSESSMENT RATIO IN NEW MEXICO IS	0.0
454	ONE-THIRD OF ACTUAL VALUE. FAIR MARKET VALUE IS	0.0
455	ACCEPTED AS ACTUAL VALUE.	0.0
420	SEVERANCE TAX IS LEVIED AGAINST ANY MINERAL INDUSTRY THAT MINES	0.0
421	A NATURAL RESOURCE AND SEVERS IT FROM THE GROUND. IS BASED ON	0.0
422	THE VALUE OF THE MINERAL AT THE PLACE AND TIME IT WAS TAKEN OUT	0.0
423	OF THE GROUND OR AT ITS FIRST SALE POINT. COPPER=.5%, URANIUM=1%	0.0
424	POTASH=2.5% AND ALL OTHERS=.125%	0.0
425	GROSS RECEIPTS TAX = 3%, EXCEPT THAT FIRMS ENGAGED IN MINING AND	0.0
426	RELATED ACTIVITIES(EXCEPT POTASH, COAL, OIL, GAS AND LIQUID	0.0
427	HYDROCARBONS) ARE TAXED AT .75%. LUMBER AND LUMBER MANUFACTURES	0.0
428	.375% AND ALCOHOLIC BEVERAGE WHOLESALERS AT .50%.	0.0
429	THE CORPORATE INCOME TAX RATE IS A FLAT 3% ON THE ENTIRE TAXABLE	0.0
430	INCOME OF THE CORPORATION. FEDERAL INCOME TAX IS DEDUCTIBLE FROM	0.0
431	GROSS INCOME	0.0
432	RESOURCES TAX = RESOURCE EXCISE TAX BASED ON THE PRIVILEGE OF	0.0
433	SEVERING OR REMOVING FROM THE GROUND AND (OR) PROCESSING MINERAL	0.0
434	RESOURCES WITHIN THE STATE. POTASH = 3% ALL OTHER NATURAL RE-	0.0
435	SOURCES = .75%. TAX IS IMPOSED ON THE GROSS VALUE OF THE RE-	0.0
436	SOURCE AT THE TIME IT IS SEVERED.	0.0
437	PROCESSORS TAX = TAX PAYED FOR REFINING OR PROCESSING MINERALS	0.0
438	AFTER THEY HAVE BEEN SEVERED. THIS TAX IS GENERALLY IMPOSED ON	0.0
439	THE GROSS VALUE OF MINERAL AFTER PROCESSING. TIMBER =.375%. ALL	0.0
440	OTHER NATURAL RESOURCES = .75%. IF OPERATIONS INVOLVE EXTRACTING	0.0
441	OR FELLING AND PROCESSING, ONLY THE PROCESSING RATE OF THE	0.0
442	SERVICE TAX APPLIES.	0.0
443	SERVICE TAX = THE SERVICE TAX IS IMPOSED ON AN INDUSTRY THAT	0.0
444	SEVERS AND(OR)PROCESSES A MINERAL WITHIN NEW MEXICO THAT IS	0.0
445	OWNED BY SOMEONE OTHER THAN THE SEVERER OR PROCESSOR. THE TAX IS	0.0
446	APPLIED THE SAME AS THE RESOURCES AND PROCESSORS TAXES ARE.	0.0
447	MUNICIPAL TAXES = OCCUPATIONAL LICENSE FEE OF $.55/$1000 GROSS	0.0
448	VOLUME OF BUSINESS	0.0
5		0.020
10		0.0
12		0.001
15		0.010
16		0.0
17		0.0
18		0.008
19		0.0
0	AVAILABLE INDUSTRIAL PROPERTIES	0.0
1	ACREAGE = 5 LARGE PLOTS PLOT NO.1=710 ACRES, PLOT NO. 2= 540	0.0
2	ACRES, PLOT NO. 3=1170 ACRES, PLOT NO. 4=285 ACRES, AND PLOT	0.0
15	NO.5=210 ACRES	0.0
4	PROXIMITY TO RAILROAD. PLOTS 1,2,3 AND 5 IMMEDIATELY ADJACENT	0.0
5	TO RAILROAD FACILITIES. PLOT NO 4 IS NOT LOCATED CONVIENTLY NEAR	0.0
6	PRESENT TRACKAGE.	0.0
7	ELEVATION = 3567 TO 3608 INCLUDES ALL SITES	0.0
8	FOUNDATION = SITES NOS. 1,2,3 AND 4 ON RIVER SEDIMENTS +ALLUVIAL	0.0
9	FILLS, AND SITE NO. 5 ON IGNEOUS BEDROCK.	0.0
10	ACCESSIBILITY TO UTILITIES = ALL SITES ARE ALREADY PROVIDED	0.0
11	FOR PROVISIONS FOR ELECTRICITY, GAS AND WATER.	0.0
13	PROXIMITY TO TRANSPORTATION OTHER THAN RAILROADS. EACH SITE HAS	0.0
14	EASY ACCESS TO HIGHWAY SYSTEMS.	0.0
3		540.000
16		0.0
0	CLIMATE - GENERAL DESCRIPTION - SEMI-ARID CONTINENTAL WITH A	0.0
1	DISTINCT SUMMER RAINFALL MAXIMA. SUMMERS = WARM, WINTERS = MILD.	0.0
2	ABUNDANT SUNSHINE - GENERALLY LOW RELATIVE HUMIDITIES.	0.0
3	AVERAGE ANNUAL RAINFALL = 12 IN.	0.0
4	DURING WINTER SOME PRECIPITATION FALLS AS SNOW	0.0
6	HIGH TEMPERATURE MID-MAY TO MID-SEPTEMBER 90-100+	0.0
7	JANUARY AVERAGE DAYTIME SHADE TEMPERATURE = 60 DEGREES.	0.0
8	DURING MID-WINTER ABOUT TWO-THIRDS OF THE NIGHTS SHOW LOW	0.0
9	READINGS BELOW THE FREEZING MARK	0.0

```
                                                                                0.0
 0 TRANSPORTATION                                                               0.0
 1 RAILROADS  SANTE FE RAILWAY SYSTEM                                           0.0
 2 DELIVERY TIMES  KANSAS CITY  2ND DAY  CHICAGO  3RD DAY                       0.0
 3 LOS ANGELES  4TH DAY  DALLAS  3RD DAY  HOUSTON  3RD DAY                      0.0
 4 VOLUME OF FREIGHT TRAFFIC = LCL AND CL                                       0.0
 5 FACILITIES ARE AVIALABLE FOR LESS THAN CARLOAD LOTS                          0.0
 6 MAJOR CONNECTIONS CAN NOT BE MADE IN NEW MEXICO WITH SOUTHERN                0.0
 7 PACIFIC AND ROCK ISLAND RAILROADS                                            0.0
 8 RATES  TO CHICAGO FOR MINERAL ORE MATERIAL  CL = $13.50/TON                  0.0
 9 LCL = $8.50/100 LBS.                                                         0.0
10 RATES  TO CHICAGO FOR ELECTRONIC COMPONENTS CL = $4.50/TON  20,              0.0
11 000LBS AND FROM 10,000 TO 20,000LBS = $6.75/TON  MINIMUM =10,000            0.0
12 EAST OF KANSAS CITY ALL CARS MUST BE UNLOADED AND LOADED BY COM-            0.0
13 PANY INVOLVED IN SHIPPING                                                   0.0
16 MOTOR TRUCKING  ICX TRUCKING LINES AND WHITFIELD FREIGHT LINES              0.0
17 DAILY SERVICE                                                               0.0
18 OVERNIGHT TO EL PASO,TEXAS , AMARILLO,TEXAS , LUBBOCK,TEXAS ,               0.0
19 CLOVIS,NEW MEXICO                                                           0.0
20 2ND MORNING TO  DALLAS,TEXAS AND DENVER,COLORADO                            0.0
21 3RD MORNING TO  LOS ANGELES,CALIFORNIA , PHOENIX,ARIZONA ,                  0.0
22 HOUSTON,TEXAS , KANSAS CITY,MISSOURI , ST LOUIS,MISSOURI                    0.0
23 4TH MORNING TO  SALT LAKE CITY,UTAH AND CHICAGO,ILLINOIS                    0.0
24 RATES                                                                       0.0
25 TO CHICAGO - LESS THAN 1500 LBS = $8.39/100 LBS AND 1500 LBS OR             0.0
26 GREATER = $7.77/100 LBS                                                     0.0
27 TO DALLAS-FORT WORTH - LESS THAN 1000 LBS = $4.83/100 LBS, 1000             0.0
28 BUT LESS THAN 2000 LBS = $4.29/100 LBS AND 2000 LBS OR GREATER              0.0
29 = $4.17/100 LBS.                                                            0.0
30 TO LOS ANGELES - LESS THAN 5000 LBS = $9.71/100 LBS AND 5000                0.0
31 LBS OR GREATER = $9.44/100 LBS                                              0.0
35                                                                             800.000
36                                                                             750.000
37                                                                             0.0
38                                                                             1620.000
32                                                                             0.0
 1 LABOR                                                                       0.0
 3 TOTAL SKILLED LABOR AS OF OCTOBER 25, 1968 = 579                            0.0
 4 TECHNICAL AND MANAGERIAL = 22                                               0.0
 5 CLERICAL = 96                                                               0.0
 6 SALES = 49                                                                  0.0
 7 DOMESTIC = 36                                                               0.0
 8 SERVICE EXCEPT DOMESTIC = 93                                                0.0
 9 FARMING AND FORESTRY = 22                                                   0.0
10 PROCESSING = 10                                                             0.0
11 MACHINE TRADES = 12                                                         0.0
12 BENCH WORK = 17                                                             0.0
13 STRUCTURAL WORK = 69                                                        0.0
14 MISC. = 50                                                                  0.0
15 ENTRY = 103                                                                 0.0
16 ROSWELL EMPLOYMENT DRAWING AREA                                             0.0
18 CHAVES COUNTY TOTAL EMPLOYMENT = 20,000                                     0.0
19 AGRICULTURAL = 1,390                                                        0.0
20 SELF-EMPLOYED = 1,990                                                       0.0
21 WAGE AND SALARY = 17,390                                                    0.0
22 MINING = 430                                                                0.0
23 CONSTRUCTION = 810                                                          0.0
24 MANUFACTURING = 920                                                         0.0
25 TRANSPORTATION AND UTILITIES = 870                                          0.0
26 TRADE = 2,990                                                               0.0
27 FIN.,INS. AND REAL ESTATE = 670                                             0.0
28 SERVICES AND MISC. = 2,640                                                  0.0
29 GOVERNMENT = 8,060                                                          0.0
30                                                                             0.0
 9 0 POPULATION CHAVES = 51,000                                                0.0
```

125,000 BY 2000

LONG RUN STATE POPULATION YEAR 2000 = 3,000,000 0.0

0.0

NATURAL RESOURCES 0.0

MINERAL RESOURCES	PRODUCTION	PROVED RESERVES	LIFE INDEX	
CRUDE PETROLEUM	4.0E+6 BBLS	3.2E+7 BBLS	8.00 YEARS	0.0
NATRUAL GAS	54,000MCF	870,000 MCF	16.01YEARS	0.0
ALLIED PRODUCTS	3.0E+6 BBLS	3.7E+7 BBLS	12.33 YEARS	0.0

0.0
0.227
0.031
0.112
0.608
1500.000
3200.000
0.0
5700.000
0.0
0.0

ARTESIA, NEW MEXICO 0.0
GEOGRAPHIC LOCATION = SOUTHEASTERN NEW MEXICO EDDY COUNTY 0.0
CHARACTER OF SURROUNDING TERRITOR 0.0
ELEVATION = 3400 0.0
TERRAIN = RELATIVELY FLAT FARM LAND 0.0
FLOOD HAZARDS SLIGHT = ONE MINOR FLOOD IN 47 YEARS 0.0
0.0
UTILITIES 0.0
POWER ELECTRIC 0.0
ARTESIA ELECTRIC COOPERATIVE 0.0
INDUSTRIAL RATE 0.0
PEAK DEMAND CHARGE OF $375.00 FOR THE FIRST 200 KW, OR LESS, OF 0.0
DEMAND 0.0
$1.25 PER ADDITIONAL KW OF DEMAND 0.0
RATE 0.0
ENERGY CHARGE - .75 PER KWH FOR THE FIRST 300 KWH USED PER 0.0
MONTH 0.0
FUEL COST ADJUSTMENTS THE NET CHARGE PER KILOWATT HOUR OF THE 0.0
ABOVE RATE SHALL BE INCREASED OR DECREASED 0.01 PER KWH FOR 0.0
EACH 0.5 INCREASE OR DECREASE, OR MAJOR FRACTION THEREOF, IN 0.0
THE DELIVERED COST OF GAS AT ALL OF THE COMPANY,S STEAM-ELECTRIC 0.0
GENERATING STATION ABOVE 12.5 OR BELOW 10.5 PER THOUSAND CUBIC 0.0
FEET DURING THE SECOND PRECEDING MONTH. 0.0
TAX ADJUSTMENTS- THE AMOUNT OF THE BILLS COMPUTED UNDER THE 0.0
ABOVE RATE WILL BE INCREASED BY THE PROPORTIONATE PART OF ANY 0.0
PRESENT AND/OR NEW TAX, OR INCREASED RATE OF TAX,OR GOVERNMENTAL 0.0
IMPOSITION(EXCEPT STATE, COUNTY, CITY AND SPECIAL DISTRICT AD 0.0
VALOREM TAXES) LEVIED OR ASSESSED AGAINST THE COMPANY OR UPON 0.0
ITS ELECTRIC BUSINESS, AS THE RESULT OF ANY PRESENT AND/OR NEW 0.0
OR AMENDED LAWS AFTER JUNE 1, 1957. 0.0
TYPE OF SERVICE AC 60 CPS 52,100KVA MAXIMUM DEMAND IN 120, 240 0.0
,440 VOLTS 3 PHASE 0.0
TRANSMISSION LINE = 230,000 VOLTS 0.0
CONTRACT PERIOD A PERIOD OF NOT LESS THAN ONE YEAR. 0.0
NEGOTIATION POSSIBLE FOR LARGE POWER CONSUMER. 0.0
COAL = NOT RECOMMENDED FOR ECONOMICAL USE. 0.0
NATURAL GAS SUPPLIER = SOUTHERN UNION GAS COMPANY. 0.0
DAILY SUPPLY = 6,000,000 MCF CAN BE INCREASED TO 10,000,000 MCF 0.0
BTU ANALYSIS AT 14.7 PSIA 60 DEGREES F, 1,100 BTU/CU-FT 0.0
RATES 0.0
FIRST 1 MCF PER MONTH AT $1.61 PER MCF. 0.0
NEXT 3 MCF PER MONTH AT $0.88 PER MCF. 0.0
NEXT 22 MCF PER MONTH AT $0.70 PER MCF. 0.0
NEXT 24 MCF PER MONTH AT $0.61 PER MCF. 0.0
NEXT 100MCF PER MONTH AT $0.50 PER MCF. 0.0
EXCESS MCF PER MONTH A $0.41 PER MCF. 0.0
TELEPHONE SERVICE = GENERAL TELEPHONE COMPANY OF THE SOUTHWEST

```
WATER-                                                                  0.0
CAPACITY = 6 MILLION GALLONS                                            0.0
RATES INSIDE CITY LIMITS                                                0.0
FIRST 5,000 GAL. = $3.00                                                0.0
ADDITIONAL 1,000 GAL = $0.12                                            0.0
RATES OUTSIDE CITY LIMITS                                               0.0
FIRST 5,000 GAL. = $5.00                                                0.0
ADDITIONAL 1,000 GAL = $0.25                                            0.0
                                                                       25.000
                                                                        0.500
                                                                      125.000
                                                                       12.000
                                                                        0.0
                                                                        0.0
TAXES                                                                   0.0
COMPENSATING OR USE TAX = AN EXCISE TAX OR 3 % OF THE PURCHASE          0.0
PRICE IS LEVIED UPON OUT-OF-STATE PURCHASES OF TANGIBLE PERSONAL        0.0
PROPERTY FOR USE, STORAGE, OR CONSUMPTION IN NEW MEXICO.  PRO-          0.0
PERTY BECOMING A COMPONENT PART OF ANY MANUFACTURED ARTICLE IS          0.0
EXEMPT, AS ARE CHEMICALS AND REAGENTS USED IN THE PROCESSING            0.0
OF OILS AND MINERALS.                                                   0.0
FREEPORT LAW = TO GIVE IMPETUS TO THE GROWTH OF THE TRANSPORTA-         0.0
TION AND DISTRIBUTION INDUSTY IN THE STATE OF NEW MEXICO.  TAX          0.0
LAW EXEMPTS FROM PROPERTY TAX PERSONAL PROPERTY (COMMODITIES)           0.0
THAT ARE MOVING IN INTERSTATE COMMERCE OR THAT ARE IN STORAGE IN        0.0
THE STATE AND DESTINED TO BE SHIPPED OUT-OF-STATE.                      0.0
PROPERTY TAXES = THE NEW MEXICO CONSTITUTION LIMITS THE TOTAL           0.0
PROPERTY TAX RATE TO $20/$1000 OF ASSESSED VALUATION. LEVIES            0.0
BEYOND THE LIMITATION, EXCEPT FOR DEPT SERVICE, MUST BE VOTED ON        0.0
BY THE ELECTORS OF THE TAXING DISTRICT.                                 0.0
THE ASSESSMENT RATIO IN NEW MEXICO                                      0.0
IS ONE-THIRD OF ACTUAL VALUE.  FAIR MARKET VALUE.                       0.0
IS ACCEPTED AS ACTUAL VALUE.                                            0.0
THE JUDGEMENT OF LOCAL ASSESSORS MAY BE PROTESTED ON A LOCAL            0.0
BASIS AND BEFORE THE STATE TAX  COMMISSION TO ASSURE                    0.0
EQUITABLE TREATMENT                                                     0.0
DOMESTIC FIRMS PAY A FEE OF 10  PER $1,000 OF AUTHORIZED CAPITAL        0.0
STOCK TO INCORPORATE IN THE STATE.  FOREIGN (OUT-OF-STATE)              0.0
CORPORATIONS PAY A QUALIFICATION FEE WHICH IS ALSO BASED ON 10          0.0
PER $1000 OF AUTHORIZED CAPITAL STOCK FOR A CERTIFICATE OF AUTH-        0.0
ORITY TO DO BUSINESS IN THE STATE.                                      0.0
MINIMUM FEE $20 MAXIMUM FEE $5000                                       0.0
CORPORATE FRANCHISE TAX                                                 0.0
AN ANNUAL FRANCHISE TAX IS ASSESSED AT THE RATE OF $.55 PER             0.0
$1000 AGAINST THE BOOK VALUE OF A CORPORATIONS AUTHORIZED AND           0.0
ISSUED CAPITAL STOCK REPRESENTED BY THE FIRMS PROPERTY AND              0.0
BUSINESS IN THE STATE.  CORPORATIONS MAY FILE ON A FISCAL YEAR          0.0
BASIS, AND THE MINIMUM TAX IS $10 PER YEAR.                             0.0
MUNICIPAL TAXES                                                         0.0
OCCUPATIONAL LICENCE FEE OF $.60/$1,000 GROSS VOLUME OF                 0.0
BUSINESS.  MAXIMUM FEE =$500                                            0.0
                                                                        0.0
SEVERANCE TAX                                                           0.0
THIS TAX IS LEVIED AGAINST ANY MINERAL INDUSTRY THAT MINES A            0.0
NATURAL RESOURCE AND SEVERS IT FROM THE GROUND.  IS BASED ON THE        0.0
VALUE OF THE MINERAL AT THE PLACE AND TIME IT WAS TAKEN OUT OF          0.0
THE GROUND OR AT ITS FIRST SALE POINT.                                  0.0
RATES  COPPER = .5%, URANIUM = 1.0%, POTASH = 2.5% AND ALL              0.0
OTHERS = .125%.                                                         0.0
                                                                        0.0
GROSS RECEIPTS TAX                                                      0.0
RATE GENERAL = 3.0%                                                     0.0
EXCEPTIONS  FIRMS ENGAGED IN MINING AND RELATED ACTIVITIES              0.0
(EXCEPT POTASH, COAL, OIL, GAS AND LIQUID HYDROCARBONS) ARE             0.0
TAXED AT .75%.  LUMBER AND LUMBER MANUFACTURES .375% AND                0.0
ALCOHOLIC BEVERAGE WHOLESALERS AT .50%                                  0.0
                                                                        0.0
CORPORATE INCOME TAX                                                    0.0
RATE = 3.0% ON THE ENTIRE TAXABLE INCOME OF THE CORPORATION.            0.0
```

670	RESOURCES TAX	
671	TAX IS BASED ON THE PRIVILEGE OF SEVERING OR REMOVING FROM THE	0.0
672	GROUND AND (OR) PROCESSING MINERAL RESOURCES WITHIN THE STATE.	0.0
673	RATES = POTASH = 3%, ALL OTHER NATURAL RESOURCES = .75%. TAX	0.0
674	IS IMPOSED ON THE GROSS VALUE OF THE RESOURCE AT THE TIME IT	0.0
675	IS SEVERED.	0.0
676	PROCESSORS TAX	0.0
677	TAX PAYED FOR REFINING OR PROCESSING MINERALS AFTER THEY HAVE	0.0
678	BEEN SEVERED. THIS TAX IS GENERALLY IMPOSED ON THE GROSS VALUE	0.0
679	OF MINERAL AFTER PROCESSING.	0.0
680	RATES TIMBER = .375%, ALL OTHER NATURAL RESOURCES = .75%. IF	0.0
681	OPERATIONS INVOLVE EXTRACTING OR FELLING AND PROCESSING, ONLY	0.0
682	THE PROCESSING RATE OF THE SERVICE TAX APPLIES.	0.0
683	SERVICE TAX	0.0
684	THIS TAX IS IMPOSED ON AN INDUSTRY THAT SEVERS AND(OR) PROCESSES	0.0
686	A MINERAL WITHIN NEW MEXICO THAT IS OWNED BY SOMEONE OTHER THAN	0.0
687	THE SEVERER OR PROCESSOR. THE TAX IS APPLIED THE SAME AS THE	0.0
688	RESOURCES AND PROCESSORS TAXES ARE.	0.0
5		0.020
610		0.0
612		0.001
615		0.0
616		0.0
617		0.0
618		0.008
619		0.0
696		0.0
50	AVAILABLE INDUSTRIAL PROPERTIES	0.0
51	2 PLOTS	0.0
52	71 ACRES 104 ACRES	0.0
54	ELECTRIC POWER AND NATURAL GAS FACILITIES PROVIDED	0.0
53		104.000
54		0.0
50	CLIMATE	0.0
51	GENERAL DESCRIPTION SEMI-ARID CONTINENTAL WITH A DISTINCT SUMMER	0.0
52	RAINFALL MAXIMA. SUMMERS ARE WARM AND WINTERS ARE MILD.	0.0
53	ABUNDANT SUNSHINE, GENERALLY LOW RELATIVE HUMIDITIES.	0.0
54	AVERAGE ANNUAL RAINFALL =	0.0
55	DURING WINTER SOME PRECIPITATION FALLS AS SNOW	0.0
57	HIGH TEMPERATURE MID-MAY TO MID-SEPTEMBER 90-100+.	0.0
58	JANUARY AVERAGE DAYTIME SHADE TEMPERATURE =	0.0
59	DURING MID-WINTER ABOUT TWO-THIRDS OF THE NIGHTS SHOW LOW	0.0
510	READINGS BELOW THE FREEZING MARK.	0.0
511	AVERAGE HOURLY WIND VELOCITY=	0.0
512		0.0
70	TRANSPORTATION	0.0
71	RAILROAD SANTA FE RAILROAD SYSTEM	0.0
72	RATES BULK MINERAL ORE MATERIAL	0.0
73	TO CHICAGO CL = $13.50/TON, LCL (MOTOR TRANSPORT) = $8.50/100	0.0
74	LBS	0.0
75	TO DALLAS-FORT WORTH	0.0
76		0.0
77	TO LOS ANGELES CL = $15.50/TON.	0.0
78		0.0
79	DELIVERY TIMES - 2ND DAY KANSAS CITY	0.0
710	3RD DAY CHICAGO, DALLAS AND HOUSTON.	0.0
711	4TH DAY LOS ANGELES.	0.0
712	FACILITIES AVAILABLE FOR LCL.	0.0
713	MAJOR CONNECTIONS CAN ALSO BE MADE IN EL PASO WITH SOUTHERN	0.0
714	PACIFIC AND ROCK ISLAND RAILROADS, BUT AT PRESENT IT IS NOT A	0.0
715	CONVIENT CONNECTION	0.0
716	EAST OF KANSAS CITY ALL CARS MUST BE UNLOADED AND LOADED BY	0.0
717	COMPANY RECEIVING SHIPMENT.	0.0
718	MOTOR TRUCKING - ICX FREIGHT LINES AND WHITFIELD FREIGHT LINES.	0.0
719	RATES	0.0

GREATER = $1.97/100 LBS.
TO DALLAS - FORT WORTH - LESS THAN 1000 LBS = $4.83/100 LBS, AND 1000 LBS BUT LESS THAN 2000 LBS = $4.29/100 LBS AND 2000 LBS OR GREATER = $4.17/100 LBS.
TO LOS ANGELES - LESS THAN 5000 LBS = $9.71/100 LBS AND 5000 LBS OR GREATER = $9.44.
OVERNIGHT TO EL PASO, TEXAS, AMARILLO, TEXAS, LUBBOCK, TEXAS AND CLOVIS, NEW MEXICO
2ND MORNING TO DALLAS, TEXAS AND DENVER, COLORADO.
3RD MORNING TO LOS ANGELES, CALIFORNIA, PHOENIX, ARIZONA, HOUSTON, TEXAS, KANSAS CITY, MISSOURI, ST LOUIS, MISSOURI.
4TH MORNING TO SALT LAKE CITY, UTAH AND CHICAGO, ILLINOIS
NO WATERWAY TRANSPORTATION AVAILABLE

LABOR
TOTAL SKILLED LABOR AS OF OCTOBER 25, 1968 = 151
PROFESSIONAL, TECHNICAL AND MANAGERIAL = 7.
CLERICAL = 21
SALES = 11
DOMESTIC = 9
SERVICE EXCEPT DOMESTIC = 23
FARMING AND FORESTRY = 7
MACHINE TRADES = 8
BENCH WORK = 3
STRUCTURAL = 23
MISC. = 16
ENTRY = 23
UNSKILLED LABOR =
EDDY COUNTY TOTAL EMPLOYMENT = 16,000

POPULATION EDDY COUNTY = 48,000
LONG-RUN COUNTY POPULATION YEAR 1980 = 60,000
YEAR 2000 = 90,000

MINERAL RESOURCES	PRODUCTION	PROVED RESERVES	LIFE INDEX
CRUDE PETROLEUM	6.0E+6 BBLS	4.5E+7 BBLS	7.50 YEARS
NATURAL GAS	5.4E+10 CF	8.7E+11 CF	16.01 YEARS
ALLIED PRODUCTS	3.0E+6 BBLS	3.7E+7 BBLS	12.33 YEARS

CARLSBAD, NEW MEXICO
GEOGRAPHIC LOCATION = SOUTHEASTERN NEW MEXICO, EDDY COUNTY
CHARACTER OF SURROUNDING TERRITORY
ELEVATION = 3100 FEET
TERRAIN = RELATIVELY FLAT FARM LAND.
FLOOD HAZARDS VERY SLIGHT

UTILITIES
ELECTRIC POWER
SOUTHWESTERN PUBLIC SERVICE COMPANY 5,210 KVA MAXIMUM DEMAND
APPLICABLE TO ALL COMMERCIAL AND INDUSTRIAL ELECTRIC SERVICE
SUPPLIED AT ONE POINT OF DELIVERY AND MEASURED THROUGH ONE
KILOWATT-HOUR METER, WHERE FACILITIES OF ADEQUATE CAPACITY AND

0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
800.000
750.000
0.0
1620.000
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.227
0.051
0.112
0.008
1500.000
3200.000
0.0
5700.000
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0

7	NOT APPLICABLE TO TEMPORARY, INTERRUPTIBLE, STANDBY	0.0
8	RESALE OR SHARED SERVICE. NOT APPLICABLE TO CUSTOMERS HAVING	0.0
9	SEASONAL LOAD CHARACTERISTICS.	0.0
68	RATE - DEMAND PEAK CHARGE $370.00 FOR THE FIRST 200 KW, OR LESS,	0.0
11	OF DEMAND PER MONTH, $1.25 PER KW FOR ALL ADDITIONAL KW OF	0.0
69	DEMAND PER MONTH. ENERGY CHARGE - .75 PER KWH FOR THE FIRST	0.0
13	300 KWH USED PER MONTH PER KWH FOR ALL ADDITIONAL KWH USED PER	0.0
14	MONTH, WHICH EVER IS GREATER. .50 PER KWH FOR ALL ADDITIONAL	0.0
70	KWH USED PER MONTH.	0.0
16	DETERMINATION OF DEMAND - THE KW DETERMINED FROM COMPANY,S DE-	0.0
17	MAND METER FOR THE 30-MINUTE PERIOD OF CUSTOMER,S GREATEST KW	0.0
18	USE DURING THE MONTH, BUT NOT LESS THAN 60% OF THE HIGHEST DE-	0.0
19	MAND ESTABLISHED IN THE PRECEDING ELEVEN MONTHS.	0.0
20	PRIMARY SERVICE DISCOUNT - A DISCOUNT OF 3% WILL BE ALLOWED WHEN	0.0
21	SERVICE IS SUPPLIED AT A LINE VOLTAGE OF 13 KV, OR GREATER, AND	0.0
22	NO TRANSFORMATION IS MADE BY THE COMPANY AT THE CUSTOMERS	0.0
23	LOCATION.	0.0
24	POWER FACTOR ADJUSTMENT -BILLS COMPUTED UNDER THE ABOVE RATE	0.0
25	WILL BE INCREASED $0.25 FOR EACH KVAR BY WHICH THE REACTIVE	0.0
26	DEMAND EXCEEDS, NUMERICALLY, 0.53 TIMES THE MEASURED KW DEMAND,	0.0
27	AND WILL BE REDUCED $0.25 FOR EACH KVAR BY WHICH THE REACTIVE	0.0
28	DEMAND IS LESS THAN, NUMERICALLY, 0.40 TIMES THE MEASURED KW	0.0
29	DEMAND.	0.0
30	FUEL COST ADJUSTMENTS - THE NET CHARGE PER KILOWATT HOUR OF THE	0.0
31	ABOVE RATE SHALL BE INCREASED OR DECREASED 0.01 PER KWH FOR	0.0
32	EACH 0.5 INCREASE OR DECREASE, OR MAJOR FRACTION THEREOF, IN	0.0
33	THE DELIVERED COST OF GAS AT ALL OF THE COMPANY,S STEAM-ELECTRIC	0.0
34	GENERATING STATIONS ABOVE 12.5 OR BELOW 10.5 PER THOUSAND	0.0
35	CUBIC FEET DURING THE SECOND PRECEDING MONTH.	0.0
36	TAX ADJUSTMENT - THE AMOUNT OF THE BILLS COMPUTED UNDER THE	0.0
37	ABOVE RATE WILL BE INCREASED BY THE PROPORTIONATE PART OF ANY	0.0
38	PRESENT AND/OR NEW TAX, OR INCREASED RATE OF TAX, OR GOVERN-	0.0
39	MENTAL IMPOSITION(EXCEPT STATE, COUNTY, CITY AND SPECIAL DIS-	0.0
40	TRICT AD VALOREM TAXES) LEVIED OR ASSESSED AGAINST THE COMPANY	0.0
41	OR UPON ITS ELECTRIC BUSINESS, AS THE RESULT OF ANY PRESENT AND/	0.0
42	OR NEW OR AMENDED LAWS AFTER JUNE 1, 1957.	0.0
43	TYPE OF SERVICE - AC 60 CPS 52,100 KVA MAXIMUM DEMAND (3-PHASE)	0.0
44	IN 120, 240 AND 440 VOLTS. TRANSMISSION LINE = 230,000 VOLTS	0.0
45	CONTRACT PERIOD - A PERIOD OF NOT LESS THAN ONE YEAR.	0.0
46	NEGOTIATION POSSIBLE FOR LARGE POWER CONSUMER.	0.0
47	NATURAL GAS - SOUTHERN UNION GAS COMPANY.	0.0
48	DAILY SUPPLY = 15,000,000 MCF CAN BE INCREASED TO 20,000,000 MCF	0.0
49	BTU ANALYSIS - AT 14.7 PSIA 60 DEGREES F, 1,100 BTU/CU-FT	0.0
50	UNDER SOME CIRCUMSTANCES, RATES MAY BE SUBJECT TO NEGOTIATION.	0.0
51	COMMERCIAL AND INDUSTRIAL RATE - APPLICABLE TO COMMERCIAL AND	0.0
52	INDUSTRIAL CUSTOMERS FOR ALL USE IN OR IN CONNECTION WITH ANY	0.0
53	COMMERCIAL, BUSINESS OR INDUSTRIAL ACTIVITIES,	0.0
54	RATE -	0.0
55	FIRST 1 MCF PER MONTH AT $1.61 PER MCF.	0.0
56	NEXT 3 MCF PER MONTH AT $0.88 PER MCF.	0.0
57	NEXT 22 MCF PER MONTH AT $0.70 PER MCF.	0.0
58	NEXT 24 MCF PER MONTH AT $0.61 PER MCF.	0.0
59	NEXT 100MCF PER MONTH AT $0.50 PER MCF.	0.0
60	EXCESS MCF PER MONTH AT $0.41 PER MCF.	0.0
61	TELEPHONE SERVICE = GENERAL TELEPHONE COMPANY OF THE SOUTHWEST	0.0
62	BUSINESS ONE PARTY = $12.50/MONTH.	0.0
63	TELEGRAPH = WESTERN UNION.	0.0
64	WATER	0.0
65	TOTAL DAILY CAPACITY FOR PUMPING AND PROCESSING = 20,000,000 GAL	0.0
66	RATES - FIRST 3,000 GAL = $3.00, EACH ADD 1,000 GAL = $0.24	0.0
3 5		24.000
310		0.450
312		125.000
315		24.000
367		0.0

COMPENSATING OR USE TAX - AN EXCISE TAX EQUAL TO THE GROSS SALES	0.0
PRICE IS LEVIED UPON OUT-OF-STATE PURCHASES OF TANGIBLE PERSONAL	0.0
PROPERTY FOR USE, STORAGE, OR CONSUMPTION IN NEW MEXICO.	0.0
PROPERTY BECOMING A COMPONENT PART OF ANY MANUFACTURED ARTICLE	0.0
IS EXEMPT, AS ARE CHEMICALS AND REAGENTS USED IN THE PROCESSING	0.0
OF OILS AND MINERALS	0.0
FREEPORT LAW	0.0
TAX LAW EXEMPTS FROM PROPERTY TAX PERSONAL PROPERTY(COMMODITIES)	0.0
THAT ARE MOVING IN INTERSTATE COMMERCE OR THAT ARE IN STORAGE IN	0.0
THE STATE AND DESTINED TO BE SHIPPED OUT-OF-STATE	0.0
PROPERTY TAXES	0.0
THE ASSESSMENT RATIO IN NEW MEXICO IS 33.3% OF FAIR MARKET VALUE	0.0
SEVERANCE TAX	0.0
TAX IS LEVIED AGAINST ANY MINERAL INDUSTRY THAT MINES A NATURAL	0.0
RESOURCE AND SEVERS IT FROM THE GROUND. IS BASED ON THE VALUE	0.0
OF THE MINERAL AT THE PLACE AND TIME IT WAS TAKEN OUT OF THE	0.0
GROUND OR AT ITS FIRST SALE POINT. COPPER = .5%, URANIUM = 1%,	0.0
POTASH = 2.5% AND ALL OTHER = .125%.	0.0
GROSS RECEIPTS TAX	0.0
IT IS 3%, EXCEPT THAT FIRMS ENGAGED IN MINING AND RELATED	0.0
ACTIVITIES(EXCEPT POTASH, COAL, OIL, GAS AND LIQUID HYDROCARBONS	0.0
) ARE TAXED AT .75%. LUMBER AND LUMBER MANUFACTURED .375% AND	0.0
ALCOHOLIC BEVERAGE WHOLESALERS AT .50%.	0.0
CORPORATE INCOME TAX	0.0
RATE IS A FLAT 3% ON THE ENTIRE TAXABLE INCOME OF THE CORPORA-	0.0
TION. FEDERAL INCOME TAX IS DEDUCTIBLE FROM GROSS INCOME.	0.0
RESOURCES TAX	0.0
RESOURCE EXCISE TAX BASED ON THE PRIVILEGE OF SEVERING OR RE-	0.0
MOVING FROM THE GROUND AND (OR) PROCESSING MINERAL RESOURCES	0.0
WITHIN THE STATE. POTASH = 3%. ALL OTHER NATURAL RESOURCES =	0.0
.75%. TAX IS IMPOSED ON THE GROSS VALUE OF THE RESOURCE AT THE	0.0
TIME IT IS SEVERED.	0.0
PROCESSORS TAX	0.0
TAX PAYED FOR REFINING OR PROCESSING MINERALS AFTER THEY HAVE	0.0
BEEN SEVERED. THIS TAX IS GENERALLY IMPOSED ON THE GROSS VALUE	0.0
OF MINERAL AFTER PROCESSING. TIMBER = .375%. ALL OTHER NATURAL	0.0
RESOURCES = .75%. IF OPERATIONS INVOLVE EXTRACTING OR FELLING	0.0
AND PROCESSING, ONLY THE PROCESSING RATE OF THE SERVICE TAX	0.0
APPLIES.	0.0
SERVICE TAX	0.0
THE SERVICE TAX IS IMPOSED ON AN INDUSTRY THAT SEVERS AND(OR)	0.0
PROCESSES A MINERAL WITHIN NEW MEXICO THAT IS OWNED BY SOMEONE	0.0
OTHER THAN THE SEVERER OR PROCESSOR. THE TAX IS APPLIES THE	0.0
SAME AS THE RESOURCES AND PROCESSORS TAXES ARE.	0.0
MUNICIPAL TAXES = OCCUPATIONAL LICENSE FEE OF $.75/$1000, ON THE	0.0
GROSS VOLUME OF BUSINESS CONDUCTED BY THE FIRM WITHIN THE CITY	0.0
LIMITS.	0.020
	0.0
	0.001
	0.010
	0.0
	0.0
	0.008
	0.0
	0.0
	0.0
AVAILABLE INDUSTRIAL PROPERTIES	0.0
TWO MAJOR AREAS ARE AVAILABLE	0.0
ONE SITE CONTAINS A TOTAL OF 105 ACRES. IT IS OWNED BY THE	0.0
CARLSBAD DEVELOPMENT FOUNDATION. UTILITIES INCLUDING WATER ARE	0.0
AVAILABLE IN THE AREA. SITE IS ADJACENT TO THE SANTA FE RAIL-	0.0
ROAD TRACK.	0.0
THE SECOND SITE IS 490 ACRES LOCATED ADJACENT TO THE CARLSBAD	0.0
MUNICIPAL AIRPORT. THE AREA IS OWNED BY THE CITY. IT HAS ITS	0.0
OWN WATER WELLS WITH A CAPACITY OF 1.5 MILLION GPD. THERE IS A	0.0

05 3		490.000
0511		0.0
06 0	CLIMATE	0.0
06 1	GENERAL DESCRIPTION - SEMI-ARID CONTINENTAL WITH SUMMER RAINFALL	0.0
06 2	MAXIMA.	0.0
06 4	SUMMERS ARE WARM, WINTERS ARE MILD	0.0
06 5	ABUNDANT SUNSHINE WITH GENERALLY LOW RELATIVE HUMIDITIES.	0.0
06 6	AVERAGE ANNUAL RAINFALL = 12 IN.	0.0
06 7	DURING WINTER SOME PRECIPITATION FALLS AS SNOW OCCASIONALLY	0.0
06 8	EXCEEDING 6 INCHES IN 24 HOURS.	0.0
06 9	HIGH TEMPERATURE MID-MAY THROUGH MID-SEPTEMBER 90-100+.	0.0
0610	JANUARY AVERAGE DAYTIME SHADE TEMPERATURE = 60 DEGREES F.	0.0
0611	DURING MID-WINTER ABOUT TWO-THIRDS OF THE NIGHTS SHOW LOW	0.0
0613	AVERAGE HOURLY WIND VELOCITY = 12.3 MPH	0.0
0614	VELOCITY OF WIND EXCEEDS 31 MPH 3% OF THE TIME.	0.0
0615		0.0
07 0	TRANSPORTATION	0.0
07 1	RAILROADS	0.0
07 2	SANTA FE RAILWAY SYSTEM	0.0
07 3	RATES	0.0
07 4	TO CHICAGO FOR MINERAL ORE MATERIAL CL = $13.50/TON LCL =	0.0
07 5	$8.50/100LBS.	0.0
07 6	TO CHICAGO FOR ELECTRIC COMPONENTS CL= $4.50/TON 20,000 LBS	0.0
07 7	AND $6.75/TON BETWEEN 10,000 TO 20,000 LBS. MINIMUM = 10,000	0.0
07 8	LBS. EAST OF KANSAS CITY ALL CARS MUST BE UNLOADED AND LOADED	0.0
07 9	BY COMPANY RECEIVING OR SENDING MATERIAL.	0.0
0710	DELIVERY TIMES	0.0
0711	KANSAS CITY 2ND DAY	0.0
0712	CHICAGO 3RD DAY	0.0
0713	DALLAS 3RD DAY	0.0
0714	HOUSTON 3RD DAY	0.0
0715	LOS ANGELES 4TH DAY	0.0
0716	LCL TRAFFIC LEAVES BY TRUCK.	0.0
0717	MOTOR TRUCKING	0.0
0718	ICX TRUCKING LINES AND WHITFIELD FREIGHT LINES	0.0
0719	DAILY SERVICE	0.0
0720	OVERNIGHT TO EL PASO, AMARILLO, LUBBOCK AND CLOVIS.	0.0
0721	2ND MORNING TO DALLAS, DENVER.	0.0
0722	3RD MORNING TO LOS ANGELES, PHOENIX, HOUSTON, KANSAS CITY, AND	0.0
0723	ST LOUIS	0.0
0724	4TH MORNING TO SALT LAKE CITY AND CHICAGO	0.0
0725	RATES	0.0
0726	TO CHICAGO - LESS THAN 1500 LBS = $8.67/100 LBS AND 1500	0.0
0727	OR GREATER = $8.04/100 LBS.	0.0
0728	TO DALLAS - FORT WORTH - LESS THAN 1000 LBS = $4.83/100 LBS,	0.0
0729	1000 LBS BUT LESS THAN 2000 LBS = $4.29/100 LBS AND 2000 LBS OR	0.0
0730	GREATER = $4.17/100 LBS.	0.0
0731	TO LOS ANGELES - LESS THAN 5000 LBS = $9.71/100 LBS AND 5000 OR	0.0
0732	GREATER = $9.44/100 LBS	0.0
0733	NO WATERWAY TRANSPORTATION AVAILABLE	0.0
0735		550.000
0736		525.000
0737		0.0
0738		1620.000
0739		0.0
08 0	LABOR	0.0
08 1	TOTAL SKILLED LABOR AS OF OCTOBER 25, 1968 = 465	0.0
08 2	TECHNICAL AND MANAGERIAL 17	0.0
08 3	CLERICAL 43	0.0
08 4	SALES 27	0.0
08 5	DOMESTIC 18	0.0
08 6	SERVICE EXCEPT DOMESTIC 107	0.0
08 7	FARMING AND FORESTRY 18	0.0
08 7	PROCESSING 14	0.0
08 8	MACHINE TRADES 25	0.0

STRUCTURAL WORK 79 0.0
MISC. 59 0.0
ENTRY 54 0.0
UNSKILLED 0.0
EDDY COUNTY TOTAL EMPLOYMENT (1966) 16,800 0.0
AGRICULTURAL = 1200 0.0
NON-AGRICULTURAL = 15,600 0.0
SELF-EMPLOYED = 1,710 0.0
WAGE AND SALARY = 13,960 0.0
MINING = 4,280 0.0
CONSTRUCTION = 610 0.0
MANUFACTURING = 640 0.0
TRANSPORTATION = 750 0.0
TRADE = 2,600 0.0
FIN., INS. AND REAL ESTATE = 450 0.0
SERVICES AND MISC. = 2,400 0.0
GOVERNMENT = 2,140 0.0
0.0
POPULATION 0.0
EDDY COUNTY = 49,900 (1967) 0.0
LONG-RUN POPULATION FIGURES FOR EDDY COUNTY YEAR 1980 = 60,000 0.0
POPULATION BY YEAR 2000 = 90,000 0.0
0.0

NATURAL RESOURCES	PRODUCTION	PROVED RESERVES	LIFE INDEX	0.0
CRUDE PETROLEUM	3,500,000BBLS	27,000,000BBLS	7.5 YEARS	0.0
NATURAL GAS	28,500MCF	440,300MCF	15.80YEARS	0.0
ALLIED PRODUCTS	1,700,000BBLS	20,400,000BBLS	12.00YEARS	0.0
POTASH	2.88 MIL TONS	1.5 BIL TONS	48 YEARS	0.0

0.0
0.227
0.031
0.112
0.608
1500.000
3200.000
0.0
5700.000
0.0
0.0
HOBBS, NEW MEXICO 0.0
GEOGRAPHIC LOCATION = SOUTHEASTERN NEW MEXICO, LEA COUNTY. 0.0
CHARACTER OF SURROUNDING TERRITORY. 0.0
ELEVATION = 3600 FEET. 0.0
TERRAIN = RELATIVELY FLAT FARM LAND. 0.0
FLOOD HAZARDS VERY SLIGHT NOT SINCE NOAH. 0.0
0.0
0.0
UTILITIES 0.0
ELECTRIC POWER 0.0
NEW MEXICO ELECTRIC SERVICE COMPANY 0.0
RATES 0.0
$375.00 FOR THE FIRST 200 KW OR LESS OF DEMAND 0.0
$1.50 PER KW ALL ADDITIONAL KW OF DEMAND. 0.0
ENERGY CHARGE 0.0
0.9 PER KWH FIRST 72,000 KWH 0.0
0.6 PER KWH FOR ADDITIONAL KWH TO 360 KWH PER KW OF DEMAND 0.0
0.425 PER KWH FOR ADDITIONAL KWH 0.0
BILLS COMPUTED UNDER THE ABOVE RATE SHALL BE INCREASED ONE-HALF 0.0
PERCENT FOR EACH ONE PERCENT THE POWER FACTOR AT THE TIME OF 0.0
MAXIMUM DEMAND IS BELOW 85 %. P6659 6ACTOR MAY BE DETERMINED 0.0
EITHER BY CONTINUOUS METERING OR PERIODIC TESTS. 0.0
THE NET CHARGE PER KILOWATT HOUR OF THE ABOVE RATE SHALL BE 0.0
INCREASED OR DECREASED .0065 PER KWH FOR EACH .5 INCREASE OR 0.0
DECREASE, AND PROPORTIONATELY FOR FRACTIONAL VARIATIONS IN THE 0.0
DELIVERED COST OF GAS AT THE COMPANY,S STEAM ELECTRIC GENERATING 0.0
STATEION, ABOVE OR BELOW 18.0 PER THOUSAND CUBIC FEET DURING TH 0.0
PRECEDING MONTH

1	COMPANY WILL SUPPLY [illegible]	0.0
3	PRIMARY DISTRIBUTION VOLTAGE. STEP DOWN TRANSFORMERS AND	0.0
4	PROTECTIVE DEVICES SHALL BE FIRNISHED, INSTALLED, AND MAINTAINED	0.0
5	BY CUSTOMER.	0.0
6	NATURAL GAS -	0.0
7	HOBBS GAS COMPANY	0.0
8	COMMERCIAL RATES	0.0
9	FIRST MCF $1.75	0.0
0	NEXT 2 MCF $.75 PER MCF	0.0
1	NEXT 19 MCF $.60 PER MCF	0.0
2	SPECIAL CITY COMMERCIAL AND INDUSTRIAL RATE	0.0
3	$50 MINIMUM FOR FIRST 100 MCF	0.0
4	$.39 PER MCF IN EXCESS OF 100 MCF	0.0
5	VERY LARGE INDUSTRIAL CONSUMER = $.25 PER MCF OR MILLION BTU	0.0
6	TELEPHONE SERVICE = GENERAL TELEPHONE COMPANY OF THE SOUTHWEST	0.0
7	BUSINESS ONE PARTY = $12.50/MONTH	0.0
8	TELEGRAPH = WESTERN UNION	0.0
9	WATER	0.0
0	RATES	0.0
1	FIRST 3,000 GALLONS $3.50	0.0
2	NEXT 2,000 GALLONS $0.74 ($0.37/THOUSAND)	0.0
3	NEXT 5,000 GALLONS $1.75 ($0.35/THOUSAND)	0.0
4	NEXT 10,000 GALLONS $3.30 ($0.33/THOUSAND)	0.0
5	NEXT 20,000 GALLONS $6.00($0.30/THOUSAND)	0.0
6	NEXT 40,000 GALLONS $10.80 ($0.27/THOUSAND)	0.0
7	NEXT 80,000 GALLONS $19.20 ($0.24/THOUSAND)	0.0
8	NEXT 100,000 GALLONS $24.20 ($0.22/THOUSAND)	0.0
9	ABOVE 320,000 GALLONS $69.49+$0.20/THOUSAND IN EXCESS OF 320,000	0.0
		23.000
5		0.425
0		150.000
2		20.000
5		0.0
0		0.0
0	TAXES	0.0
1	COMPENSATING OR USE TAX = AN EXCESE TAX OR 3% OF THE PURCHASE	0.0
2	PRICE IS LEVIED UPON OUT-OF-STATE PURCHASES OF TANGIBLE PERSONAL	0.0
3	PROPERTY FOR USE, STORAGE, OR CONSUMPTION IN NEW MEXICO.	0.0
4	PROPERTY BECOMING A COMPONENT PART OF ANY MANUFACTURED ARTICLE	0.0
48	IS EXEMPT, AS ARE CHEMICALS AND REAZENTS USED IN THE PROCESSING	0.0
6	OF OILS AND MINERALS	0.0
7	FREEPORT LAW	0.0
8	TAX LAW EXEMPTS FROM PROPERTY TAX PERSONAL PROPERTY(COMMODITIES)	0.0
9	THAT ARE MOVING IN INTERSTATE COMMERCE OR THAT ARE IN STORAGE IN	0.0
49	THE STATE AND DESTINED TO BE SHIPPED OUT-OF-STATE	0.0
11	PROPERTY TAXES	0.0
50	THE ASSESSMENT RATIO IN NEW MEXICO IS 33.3% OF FAIR MARKET VALUE	0.0
13	SEVERANCE TAX	0.0
14	TAX IS LEVIED AGAINST ANY MINERAL INDUSTRY THAT MINES A NATURAL	0.0
51	RESOURCE AND SEVERS IT FROM THE GROUND. IS BASED ON THE VALUE	0.0
52	OF THE MINERAL AT THE PLACE AND TIME IT WAS TAKEN OUT OF THE	0.0
53	GROUND OR AT ITS FIRST SALE POINT. COPPER = .5%, URANIUM = 1%,	0.0
54	POTASH = 2.5% AND ALL OTHER = .125%.	0.0
55	GROSS RECEIPTS TAX	0.0
20	IT IS 3%, EXCEPT THAT FIRMS ENGAGED IN MINING AND RELATED	0.0
21	ACTIVITIES(EXCEPT POTASH, COAL, OIL, GAS AND LIQUID HYDROCARBONS	0.0
22	)ARE TAXED AT .75%. LUMBER AND LUMBER MANUFACTURED .375% AND	0.0
23	ALCOHOLIC BEVERAGE WHOLESALERS AT .50%.	0.0
24	CORPORATE INCOME TAX	0.0
25	RATE IS A FLAT 3% ON THE ENTIRE TAXABLE INCOME OF THE CORPORA-	0.0
26	TION. FEDERAL INCOME TAX IS DEDUCTABLE FROM GROSS INCOME.	0.0
27	RESOURCES TAX	0.0
28	RESOURCE EXCISE TAX BASED ON THE PRIVILEGE OF SEVERING OR	0.0
29	REMOVING FROM THE GROUND AND (OR) PROCESSING MINERAL RESOURCES	0.0
30	WITHIN THE STATE. POTASH = 3%. ALL OTHER NATURAL RESOURCES =	0.0
31	.75%. TAX IS IMPOSTED ON THE GROSS VALUE OF THE RESOURCES AT TH	0.0

X PAYED FOR REFINING OR	
EN SEVERED. THIS TAX IS GENERALLY IMPOSTED ON	
MINERAL AFTER PROCESSING. TIMBER = .375%. ALL OTHER NATURAL	0.0
SOURCES = .75%. IF OPERATIONS INVOLVE EXTRACTING OR FELLING	0.0
ID PROCESSING, ONLY THE PROCESSING RATE OF THE SERVICE TAX	0.0
PLIES	0.0
ERVICE TAX	0.0
HE SERVICE TAX IS IMPOSED ON AN INDUSTRY THAT SEVERS AND(OR)	0.0
ROCESSES A MINERAL WITHIN NEW MEXICO THAT IS OWNED BY SOMEONE	0.0
THER THAN THE SEVERER OR PROCESSOR. THE TAX IS APPLIED THE	0.0
AME AS THE RESOURCES AND PROCESSORS TAXES ARE.	0.0
UNICIPAL TAXES	0.0
PER CENT SALES TAX	0.020
	0.0
	0.001
	0.010
	0.0
	0.0
	0.008
	0.0
	0.0
	0.0
AVAILABLE INDUSTRIAL PROPERTIES	0.0
THE HOBBS AREA HAS SEVERAL POTENTIAL INDUSTRIAL PROPERTIES WHICH	0.0
ARE HIGHLY FAVORABLE PLANT SITE FOR NEW INDUSTRY	0.0
SOME 5,000 ACRES ARE INCLUDED	0.0
OPPORTUNITY FOR LOCAL PLANT EXPANSION AND SITES FOR NEW	0.0
INDUSTRIES ARE READILY AVIALABLE IN SCATTERED LOCATIONS NEAR	0.0
RAILROADS, ALONG MAJOR HIGHWAYS, OUTSIDE AND INSIDE THE CITY	0.0
LIMITS, AND AT THE HOBBS AIR BASE INDUSTRIAL DISTRICT, 5 MILES	0.0
NORTHWEST OF THE HOBBS CITY LIMITS.	0.0
THE AIR BASE INDUSTRIAL SITE	0.0
PROPERTY DEEDED TO THE CITY OF HOBBS	0.0
2,860 ACRES.	0.0
FAVORABLE PURCHASING OR LEASING ARRANGEMENTS CAN BE OBTAINED	0.0
EIGHT THOUSAND ACRE FEET PER YEAR OF WATER RIGHTS ARE AVAILABLE	0.0
RAILROAD SPUR LINES IN PLACE	0.0
WATER MAINS ARE IN PLACE AND A SEWAGE DISPOSAL PLANT WITH	0.0
COLLECTION MAINS ARE PRESENT	0.0
12.5 KV LINES ARE IN PLACE	0.0
AN 8 INCHES HIGH PRESSURE NATURAL GAS LINE IS IN PLACE	0.0
PROPERTY FRONTS ON A MAJOR STATE HIGHWAY	5000.000
	0.0
	0.0
	0.0
CLIMATE	0.0
SEMI-ARID CONTINENTAL WITH SUMMER RAINFALL MAXIMA	0.0
AVERAGE ANNUAL RAINFALL = 15 INCHES PER YEAR	0.0
AVERAGE TEMPERATURE 80 DEGREES DAYTIME AND 46 DEGREES NIGHT	0.0
	0.0
TRANSPORTATION	0.0
RAILROAD	0.0
TEXAS PACIFIC RAILROAD COMPANY	0.0
RATES	0.0
	0.0
	0.0
	0.0
	0.0
	0.0
	0.0
	0.0
	0.0
	0.0
	0.0
	0.0
	0.0
	0.0

LABOR

THE HOBBS AND LEA COUNTY LABOR DRAWING AREA CURRENTLY HAS A POPULATION OF APPROXIMATELY 55,000. RECENT STUDIES ESTIMATE THAT NEW JOB OPPORTUNITIES COULD ATTRACT A TOTAL OF AT LEAST 850 MALE APPLICANTS. SOME 800-1000 FEMALES WOULD BE AVAILABLE FOR WORK IF NEW EMPLOYMENT OPPORTUNITIES WERE PROVIDED

IT IS THE OPINION OF BUSINESSMEN IN THE AREA THAT NEW EMPLOYERS SEEKING TO STAFF A PLANT WITH 300-500 PERSONS COULD EXERCISE A HIGH DEGREE OF SELECTION IN SCREENING CANDIDATES.

INDUSTRIAL LABOR UNIONS ARE NOT DEEPLY ENTRENCHED IN THE AREA. POOR WORK HABITS, CHARACTERISTIC OF MANY INDUSTRIAL MATURE COMMUNITIES, HAVE NOT BECOME INGRAINED IN THE HOBBS AND LEA COUNTY LABOR FORCE.

THE LOCAL LABOR OFFICE FEELS THAT FEMALES COULD BE ATTRACTED TO MANUFACTURING JOBS FOR EARNINGS OF $50 TO $60 PER WEEK.

PREVAILING MALE WAGE RATES, WHICH ARE MEANINGFUL TO POTENTIAL LEA COUNTY MANUFACTURING CONCERNS, VARY BETWEEN $1.25 TO $3.00 PER HOUR.

OCCUPATIONAL GROUP DISTRIBUTION OF JOB APPLICANTS IN HOBBS

TOTAL = 357 AS OF OCTOBER 25, 1968

PROFESSIONAL AND TECHNICAL = 16

CLERICAL = 67

SALES = 32

DOMESTIC = 23

SERVICE EXCEPT DOMESTIC = 40

FARMING FORESTRY = 8

PROCESSING = 4

MACHINE TRADES = 10

BENCH WORK = 5

STRUCTURAL WORK = 28

MISC = 44

ENTRY = 80

LEA COUNTY EMPLOYMENT

EMPLOYMENT TOTAL 1966 19,900

AGRICULTURE = 1000

NON-AGRICULTURE = 18,900

SELF-EMPLOYED = 1,940

WAGE AND SALARY = 17,050

MINING = 4,980

CONSTRUCTION = 1,010

MANUFACTURING = 710

TRANSPORTATION AND UTILITIES = 2,050

TRADE = 3,360

FIN., INS. AND R.E. = 470

SERVICES AND MISC. = 2,320

GOVERNMENT = 2,150

POPULATION

LEA COUNTY = 49,000

PROJECTED POPULATION YEAR 1980 = 75,000

PROJECTED POPULATION BY YEAR 2000 = 120,000

MINERAL	RESOURCES		
PRODUCT	PRODUCTION	PROVED RESERVES	LIFE INDEX
CRUDE PET	110,241,000 BBLS	856,000,000 BBLS	7.78 YEARS

009	ALLIED, PRO	45,000,000	ODLS	3%,000,000 ODLS 11.22 LABS 0.0
010				0.227
011				0.051
012				0.112
013				0.608
014				1500.000
015				3200.000
016				0.0
017				5700.000

```
1               IMPLICIT INTEGER(A-Z)
2               REAL LABNED,MANDAY,VALUE,SETLA,PRICE,PROPER,CAPINV,FAPRI,GROSS
               1RI,CAPAC
3               COMMON/ZERO/R000,A000,C000,H000
4               COMMON/FIRST/NAME,CODE,DATA,VALUE
5               COMMON/SECOND/GROSS,FAPRI,CAPINV
6               COMMON/THIRD/PROPER
7               COMMON/FORTH/MANDAY,LABNED,CAPAC
8               COMMON/SIXTH/PRICE
9               COMMON/EIGHT/SETLA
0               COMMON/ONE/R001,A001,C001,H001
1               COMMON/TWO/R002,A002,C002,H002
2               COMMON/THREE/R003,A003,C003,H003
3               COMMON/FOUR/R004,A004,C004,H004
4               COMMON/FIVE/R005,A005,C005,H005
5               COMMON/SIX/R006,A006,C006,H006
6               COMMON/NINE/R007,A007,C007,H007
7               COMMON/TEN/R008,A008,C008,H008
8               COMMON/EVEVEN/R009,A009,C009,H009
9               SETLA=(12550000./720000.)
0               LABNED=174.*360.
1               MANDAY=3500.
2               PRICE=13000.
3               PROPER=370.
4               CAPINV=.35E+10
5               FAPRI=13000.*720000.
6               GROSS=13000.*720000.
7               COPRI=19000.*72000.
8             200 CAPAC=2000.*360.
9               DIMENSION DATA(16)
0               1 READ(1,10,END=25) NAME,CODE,DATA,VALUE
1              10 FORMAT(1A4,I2,2X,16A4,F8.3)
2             100 IF(NAME.EQ.R000.OR.NAME.EQ.A000.OR.NAME.EQ.C000.OR.NAME.EQ.H00
                 1GO TO 500
3                GO TO 900
4             500 WRITE(6,300)
5             300 FORMAT('1')
6                GO TO 1
7             900 IF(NAME.EQ.R001.OR.NAME.EQ.A001.OR.NAME.EQ.C001.OR.NAME.EQ.H00
                 1GO TO 2
8                GO TO 3
9               2 CALL LOCA(&1)
0               3 IF(NAME.EQ.R002.OR.NAME.EQ.A002.OR.NAME.EQ.C002.OR.NAME.EQ.H00
                 1GO TO 4
1                GO TO 5
2               4 CALL CHAR(&1)
3               5 IF(NAME.EQ.R003.OR.NAME.EQ.A003.OR.NAME.EQ.C003.OR.NAME.EQ.H00
                 1GO TO 6
4                GO TO 7
5               6 CALL UTIL(&1)
6               7 IF(NAME.EQ.R004.OR.NAME.EQ.A004.OR.NAME.EQ.C004.OR.NAME.EQ.H00
                 1GO TO 8
7                GO TO 9
8               8 CALL TAX(&1)
9               9 IF(NAME.EQ.R005.OR.NAME.EQ.A005.OR.NAME.EQ.C005.OR.NAME.EQ.H00
                 1GO TO 12
0                GO TO 13
```

```
RTRAN IV     MODEL 44  PS        VERSION 3   LEVEL 1   DATE  69197       NEW MEXIC

051              12 CALL PROP(&1)
052              13 IF(NAME.EQ.R006.OR.NAME.EQ.A006.OR.NAME.EQ.C006.OR.NAME.EQ.HOC
                   1GO TO 14
053                 GO TO 15
054              14 CALL CLIM(&1)
055              15 IF(NAME.EQ.R007.OR.NAME.EQ.A007.OR.NAME.EQ.C007.OR.NAME.EQ.HOC
                   1GO TO 16
056                 GO TO 17
057              16 CALL TRAN(&1)
058              17 IF(NAME.EQ.R008.OR.NAME.EQ.A008.OR.NAME.EQ.C008.OR.NAME.EQ.HOO
                   1GO TO 18
059                 GO TO 19
060              18 CALL LABOR(&1)
061              19 IF(NAME.EQ.R009.OR.NAME.EQ.A009.OR.NAME.EQ.C009.OR.NAME.EQ.HOO
                   1GO TO 22
062                 GO TO 23
063              22 CALL POPU(&1)
064              23 IF(NAME.EQ.R010.OR.NAME.EQ.A010.OR.NAME.EQ.C010.OR.NAME.EQ.H01
                   1GO TO 24
065              24 CALL MINE(&1)
066              25 CALL AMOR
067                 CALL MAINT
068                 CALL COST
069                 CALL EVAL
070                 CALL TABLE
071                 STOP
072                 END


TAL MEMORY REQUIREMENTS 0009F8 BYTES
```

```
      SUBROUTINE LOCA(*)
      INTEGER CODE,DATA,R001,A001,C001,H001
      DIMENSION DATA(16)
      COMMON/FIRST/NAME,CODE,DATA,VALUE
      COMMON/ONE/R001,A001,C001,H001
      IF(NAME.EQ.R001) GO TO 4
      IF(NAME.EQ.A001) GO TO 5
      IF(NAME.EQ.C001) GO TO 6
      IF(NAME.EQ.H001) GO TO 7
    4 IF(CODE.EQ.00)GO TO 8
      GO TO 9
    8 WRITE(6,10)
   10 FORMAT(1X,'ROSWELL')
      WRITE(6,100)
  100 FORMAT(1X,100('-'))
    9 WRITE(6,12) DATA
   12 FORMAT(1X,16A4)
      RETURN 1
    5 IF(CODE.EQ.00)GO TO 18
      GO TO 19
   18 WRITE(6,13)
   13 FORMAT(1X,'ARTESIA')
      WRITE(6,100)
   19 WRITE(6,12) DATA
      RETURN 1
    6 IF(CODE.EQ.00)GO TO 20
      GO TO 21
   20 WRITE(6,15)
   15 FORMAT(1X,'CARLSBAD')
      WRITE(6,100)
   21 WRITE(6,12) DATA
      RETURN 1
    7 IF(CODE.EQ.00)GO TO 22
      GO TO 23
   22 WRITE(6,17)
   17 FORMAT(1X,'HOBBS')
      WRITE(6,100)
   23 WRITE(6,12) DATA
      RETURN 1
      END
```

TAL MEMORY REQUIREMENTS 000448 BYTES

```
      SUBROUTINE CHAR(*)
      INTEGER CODE,DATA,R002,A002,C002,H002
      DIMENSION DATA(16)
      COMMON/FIRST/NAME,CODE,DATA,VALUE
      COMMON/TWO/R002,A002,C002,H002
      IF(NAME.EQ.R002) GO TO 4
      IF(NAME.EQ.A002) GO TO 5
      IF(NAME.EQ.C002) GO TO 6
      IF(NAME.EQ.H002) GO TO 7
    4 IF(CODE.EQ.00)GO TO 8
      GO TO 9
    8 WRITE(6,10)
   10 FORMAT(1X,'ROSWELL')
      WRITE(6,100)
  100 FORMAT(1X,100('-'))
    9 WRITE(6,12) DATA
   12 FORMAT(1X,16A4)
      RETURN 1
    5 IF(CODE.EQ.00)GO TO 18
      GO TO 19
   18 WRITE(6,13)
   13 FORMAT(1X,'ARTESIA')
      WRITE(6,100)
   19 WRITE(6,12) DATA
      RETURN 1
    6 IF(CODE.EQ.00)GO TO 20
      GO TO 21
   20 WRITE(6,15)
   15 FORMAT(1X,'CARLSBAD')
      WRITE(6,100)
   21 WRITE(6,12) DATA
      RETURN 1
    7 IF(CODE.EQ.00)GO TO 22
      GO TO 23
   22 WRITE(6,17)
   17 FORMAT(1X,'HOBBS')
      WRITE(6,100)
   23 WRITE(6,12) DATA
      RETURN 1
      END
```

AL MEMORY REQUIREMENTS 000448 BYTES

```
01                SUBROUTINE UTIL(*)
02                INTEGER CODE,DATA,R003,A003,C003,H003
03                DIMENSION DATA(16)
04                COMMON/FIRST/NAME,CODE,DATA,VALUE
05                COMMON/UTILIT/TCOSR,TCOSA,TCOSC,TCOSH
06                COMMON/THREE/R003,A003,C003,H003
07                GAS=3.0*60000.
08                ELEC=18.*60000.
09                DEMA=10000.
10                WATE=270.*60000.
11                IF(NAME.EQ.R003) GO TO 2
12                IF(NAME.EQ.A003) GO TO 3
13                IF(NAME.EQ.C003) GO TO 4
14                IF(NAME.EQ.H003) GO TO 5
15              2 IF(CODE.EQ.05)GO TO 12
16                IF(CODE.EQ.10)GO TO 13
17                IF(CODE.EQ.12)GO TO 14
18                IF(CODE.EQ.15)GO TO 15
19                RETURN 1
20             12 WRITE(6,10)
21             10 FORMAT(1X,'TOTAL UTILITY COST AT ROSWELL')
22                GOST=VALUE
23                CGAS=GAS*GOST
24                RETURN 1
25             13 EOST=VALUE
26                CELE=EOST*ELEC
27                RETURN 1
28             14 DOST=VALUE
29                IF(NAME.EQ.H003)GO TO 160
30                CDEM=DOST*(DEMA-200.)+37000.
31                GO TO 170
32            160 CDEM=DOST*(DEMA-200.)+37500.
33            170 RETURN 1
34             15 WOST=VALUE/1000.
35                CWAT=300.+WOST*(WATE-3000.)
36                TCOSR=(CGAS+CELE+CDEM+CWAT)/60000.
37                WRITE(6,40)
38             40 FORMAT(//,1X,49('*'))
39                WRITE(6,20) TCOSR
40             20 FORMAT(1X,'*',F7.2,'CENTS - COST PER TON OF FINISHED PRODUCT*'
41                WRITE(6,60)
42             60 FORMAT(1X,49('*'),//)
43                RETURN 1
44              3 IF(CODE.EQ.05) GO TO 22
45                IF(CODE.EQ.10) GO TO 23
46                IF(CODE.EQ.12) GO TO 24
47                IF(CODE.EQ.15) GO TO 25
48                RETURN 1
49             22 WRITE(6,30)
50             30 FORMAT(1X,'TOTAL UTILITY COST AT ARTESIA')
51                GOST=VALUE
52                CGAS=GAS*GOST
53                RETURN 1
54             23 GO TO 13
55             24 GO TO 14
56             25 WOST=VALUE/1000.
57                CWAT=300.+WOST*(WATE-5000.)
```

```
                TCOSA=(CGAS+CELE+CDEM+CWAT)/60000.
                WRITE(6,40)
                WRITE(6,20) TCOSA
                WRITE(6,60)
                RETURN 1
              4 IF(CODE.EQ.05) GO TO 32
                IF(CODE.EQ.10) GO TO 33
                IF(CODE.EQ.12) GO TO 34
                IF(CODE.EQ.15) GO TO 35
                RETURN 1
             32 WRITE(6,50)
             50 FORMAT(1X,'TOTAL UTILITY COST AT CARLSBAD')
                GOST=VALUE
                CGAS=GAS*GOST
                RETURN 1
             33 GO TO 13
             34 GO TO 14
             35 WOST=VALUE/1000.
                CWAT=300.+WOST*(WATE-3000.)
                TCOSC=(CGAS+CELE+CDEM+CWAT)/60000.
                WRITE(6,40)
                WRITE(6,20) TCOSC
                WRITE(6,60)
                RETURN 1
              5 IF(CODE.EQ.05) GO TO 42
                IF(CODE.EQ.10) GO TO 43
                IF(CODE.EQ.12) GO TO 44
                IF(CODE.EQ.15) GO TO 45
                RETURN 1
             42 WRITE(6,70)
             70 FORMAT(1X,'TOTAL UTILITY COST AT HOBBS')
                GOST=VALUE
                CGAS=GAS*GOST
                RETURN 1
             43 GO TO 13
             44 GO TO 14
             45 WOST=VALUE/1000.
                CWAT=6949.+WOST*(WATE-320000.)
                TCOSH=(CGAS+CELE+CDEM+CWAT)/60000.
                WRITE(6,40)
                WRITE(6,20) TCOSH
                WRITE(6,60)
                RETURN 1
                END
```

TAL MEMORY REQUIREMENTS 000938 BYTES

```
      SUBROUTINE TAX(*)
      INTEGER CODE,DATA,R004,A004,C004,H004
      REAL NET,MUT,MUTSAL
      DIMENSION DATA(16)
      COMMON/FIRST/NAME,CODE,DATA,VALUE
      COMMON/SECOND/GROSS,FAPRI,CAPINV
      COMMON/TAXES/TTOTR,TTOTA,TTOTC,TTOTH
      COMMON/FOUR/R004,A004,C004,H004
      IF(NAME.EQ.R004)GO TO 100
      IF(NAME.EQ.A004)GO TO 200
      IF(NAME.EQ.C004)GO TO 300
      IF(NAME.EQ.H004)GO TO 400
  100 IF(CODE.EQ.05)GO TO 101
      IF(CODE.EQ.10)GO TO 102
      IF(CODE.EQ.12)GO TO 103
      IF(CODE.EQ.15)GO TO 104
      IF(CODE.EQ.16)GO TO 105
      IF(CODE.EQ.17)GO TO 106
      IF(CODE.EQ.18)GO TO 107
      IF(CODE.EQ.19)GO TO 108
      RETURN 1
  101 IF(NAME.EQ.R004)GO TO 94
      GO TO 109
   94 WRITE(6,500)
  500 FORMAT(1X,100('*'))
  109 TAVA=(CAPINV*1./3.)*VALUE
      RETURN 1
  102 NET=.375E+10
      FTAX=2500000.*.22+(NET-2500000.)*.48
      FED=FTAX+.1*FTAX
      GRORE=GROSS*.03
      CORIN=(GROSS-FED)*.03
      RETURN 1
  103 MUT=GROSS*VALUE
      RETURN 1
  104 MUTSAL=GROSS*VALUE
      RETURN 1
  105 SEVER=FAPRI*VALUE
      RETURN 1
  106 RESOUR=GROSS*VALUE
      RETURN 1
  107 PROT=GROSS*VALUE
      RETURN 1
  108 TTOTR=(TAVA+FED+GRORE+CORIN+MUT+MUTSAL+SEVER+RESOUR+PROT)/7200
      WRITE(6,10)
   10 FORMAT(1X,'TOTAL TAX FOR ROSWELL LOCATION')
      WRITE(6,40)
   40 FORMAT(//,1X,49('*'))
      WRITE(6,11)TTOTR
   11 FORMAT(1X,'*',F7.2,'CENTS - COST PER TON OF FINISHED PRODUCT*'
      WRITE(6,60)
   60 FORMAT(1X,49('*'),//)
      RETURN 1
  200 IF(CODE.EQ.05)GO TO 101
      IF(CODE.EQ.10)GO TO 102
      IF(CODE.EQ.12)GO TO 103
      IF(CODE.EQ.15)GO TO 104
```

```
58                IF(CODE.EQ.16)GO TO 105
59                IF(CODE.EQ.17)GO TO 106
60                IF(CODE.EQ.18)GO TO 107
61                IF(CODE.EQ.19)GO TO 208
62                RETURN 1
63              208 TTOTA=(TAVA+FED+GRORE+CORIN+MUT+MUTSAL+SEVER+RESOUR+PROT)/7200
64                WRITE(6,12)
65               12 FORMAT(1X,'TOTAL TAX FOR ARTESIA LOCATION')
66                WRITE(6,40)
67                WRITE(6,11)TTOTA
68                WRITE(6,60)
69                RETURN 1
70              300 IF(CODE.EQ.05)GO TO 101
71                IF(CODE.EQ.10)GO TO 102
72                IF(CODE.EQ.12)GO TO 103
73                IF(CODE.EQ.15)GO TO 104
74                IF(CODE.EQ.16)GO TO 105
75                IF(CODE.EQ.17)GO TO 106
76                IF(CODE.EQ.18)GO TO 107
77                IF(CODE.EQ.19)GO TO 308
78                RETURN 1
79              308 TTOTC=(TAVA+FED+GRORE+CORIN+MUT+MUTSAL+SEVER+RESOUR+PROT)/7200
80                WRITE(6,13)
81               13 FORMAT(1X,'TOTAL TAX FOR CARLSBAD LOCATION')
82                WRITE(6,40)
83                WRITE(6,11)TTOTC
84                WRITE(6,60)
85                RETURN 1
86              400 IF(CODE.EQ.05)GO TO 101
87                IF(CODE.EQ.10)GO TO 102
88                IF(CODE.EQ.15)GO TO 104
89                IF(CODE.EQ.16)GO TO 105
90                IF(CODE.EQ.17)GO TO 106
91                IF(CODE.EQ.18)GO TO 107
92                IF(CODE.EQ.19)GO TO 408
93                RETURN 1
94              408 TTOTH=(TAVA+FED+GRORE+CORIN+MUT+MUTSAL+SEVER+RESOUR+PROT)/7200
95                WRITE(6,14)
96               14 FORMAT(1X,'TOTAL TAX FOR HOBBS LOCATION')
97                WRITE(6,40)
98                WRITE(6,11)TTOTH
99                WRITE(6,60)
00                RETURN 1
01                END
```

TAL MEMORY REQUIREMENTS 000A0C BYTES

```
      SUBROUTINE PROP(*)
      INTEGER CODE,DATA,R005,A005,C005,H005
      DIMENSION DATA(16)
      COMMON/FIRST/NAME,CODE,DATA,VALUE
      COMMON/THIRD/PROPER
      COMMON/FIVE/R005,A005,C005,H005
      IF(NAME.EQ.R005)GO TO 2
      IF(NAME.EQ.A005)GO TO 3
      IF(NAME.EQ.C005)GO TO 4
      IF(NAME.EQ.H006)GO TO 5
    2 WRITE(6,10)DATA
   10 FORMAT(1X,16A4)
      IF(CODE.EQ.03)GO TO 11
      RETURN 1
   11 IF(NAME.EQ.R005)GO TO 40
      IF(NAME.EQ.A005)GO TO 50
      IF(NAME.EQ.C005)GO TO 60
      IF(NAME.EQ.H005)GO TO 70
   40 WRITE(6,80)
   80 FORMAT(1X,'ROSWELL LOCATION')
      WRITE(6,500)
  500 FORMAT(1X,100('*'))
      GO TO 111
   50 WRITE(6,90)
   90 FORMAT(1X,'ARTESIA LOCATION')
      WRITE(6,500)
      GO TO 111
   60 WRITE(6,100)
  100 FORMAT(1X,'CARLSBAD LOCATION')
      WRITE(6,500)
      GO TO 111
   70 WRITE(6,110)
  110 FORMAT(1X,'HOBBS LOCATION')
      WRITE(6,500)
  111 IF(VALUE-PROPER)12,13,13
   12 WRITE(6,20)
   20 FORMAT(1X,'AVAILABLE PROPERTY DOES NOT MEET ACREAGE REQUIREMEN
      WRITE(6,25)
   25 FORMAT(//,1X,12('*'))
      WRITE(6,200) VALUE
  200 FORMAT(1X,'*',F5.0,'ACRES*')
      WRITE(6,35)
   35 FORMAT(1X,12('*'),//)
      RETURN 1
   13 WRITE(6,30)
   30 FORMAT(1X,'AVAILABLE PROPERTY DOES MEET ACREAGE REQUIREMENTS')
      WRITE(6,25)
      WRITE(6,200) VALUE
      WRITE(6,35)
   15 RETURN 1
    3 WRITE(6,10)DATA
      IF(CODE.EQ.03)GO TO 11
      RETURN 1
    4 WRITE(6,10)DATA
      IF(CODE.EQ.03)GO TO 11
      RETURN 1
    5 WRITE(6,10)DATA
```

```
      IF(CODE.EQ.03)GO TO 11
      RETURN 1
      END
```

TAL MEMORY REQUIREMENTS 00069C BYTES

```
RTRAN IV     MODEL 44  PS        VERSION 3   LEVEL 1   DATE  69197       NEW MEXIC

001                SUBROUTINE CLIM(*)
002                INTEGER CODE,DATA,R006,A006,C006,H006
003                DIMENSION DATA(16)
004                COMMON/FIRST/NAME,CODE,DATA,VALUE
005                COMMON/SIX/R006,A006,C006,H006
006                IF(NAME.EQ.R006)GO TO 2
007                IF(NAME.EQ.A006)GO TO 3
008                IF(NAME.EQ.C006)GO TO 4
009                IF(NAME.EQ.H006)GO TO 5
010              2 IF(CODE.EQ.00)GO TO 102
011                GO TO 100
012            102 WRITE(6,10)
013             10 FORMAT(1X,'CLIMATE IN ROSWELL AREA')
014                WRITE(6,200)
015            200 FORMAT(1X,100('*'))
016            100 WRITE(6,11)DATA
017             11 FORMAT(1X,16A4)
018                RETURN 1
019              3 IF(CODE.EQ.00)GO TO 103
020                GO TO 100
021            103 WRITE(6,15)
022             15 FORMAT(1X,'CLIMATE IN ARTESIA AREA')
023                GO TO 100
024              4 IF(CODE.EQ.00)GO TO 104
025                GO TO 100
026            104 WRITE(6,20)
027             20 FORMAT(1X,'CLIMATE IN CARLSBAD AREA')
028                GO TO 100
029              5 IF(CODE.EQ.00)GO TO 105
030                GO TO 100
031            105 WRITE(6,25)
032             25 FORMAT(1X,'CLIMATE IN HOBBS AREA')
033                GO TO 100
034                END


OTAL MEMORY REQUIREMENTS 0003B8 BYTES
```

```
      SUBROUTINE TRAN(*)
      INTEGER CODE,DATA,R007,A007,C007,H007
      DIMENSION DATA(16)
      COMMON/FIRST/NAME,CODE,DATA,VALUE
      COMMON/TRANSP/TRPOTR,TRSULR,TRNHFR,TRPHOR,TRPOTA,TRSULA,TRNHFA
     1HOA,TRPOTC,TRSULC,TRNHFC,TRPHOC,TRPOTH,TRSULH,TRNHFH,TRPHOH
      COMMON/NINE/R007,A007,C007,H007
      IF(NAME.EQ.R007)GO TO 2
      IF(NAME.EQ.A007)GO TO 3
      IF(NAME.EQ.C007)GO TO 4
      IF(NAME.EQ.H007)GO TO 5
    2 IF(CODE.EQ.35)GO TO 35
      IF(CODE.EQ.36)GO TO 36
      IF(CODE.EQ.37)GO TO 37
      IF(CODE.EQ.38)GO TO 38
      RETURN 1
    3 IF(CODE.EQ.35)GO TO 45
      IF(CODE.EQ.36)GO TO 46
      IF(CODE.EQ.37)GO TO 47
      IF(CODE.EQ.38)GO TO 48
      RETURN 1
    4 IF(CODE.EQ.35)GO TO 55
      IF(CODE.EQ.36)GO TO 56
      IF(CODE.EQ.37)GO TO 57
      IF(CODE.EQ.38)GO TO 58
      RETURN 1
    5 IF(CODE.EQ.35)GO TO 65
      IF(CODE.EQ.36)GO TO 66
      IF(CODE.EQ.37)GO TO 67
      IF(CODE.EQ.38)GO TO 68
      RETURN 1
   35 TRPOTR=VALUE
      RETURN 1
   36 TRSULR=VALUE
      RETURN 1
   37 TRNHFR=VALUE
      RETURN 1
   38 TRPHOR=VALUE
      RETURN 1
   45 TRPOTA=VALUE
      RETURN 1
   46 TRSULA=VALUE
      RETURN 1
   47 TRNHFA=VALUE
      RETURN 1
   48 TRPHOA=VALUE
      RETURN 1
   55 TRPOTC=VALUE
      RETURN 1
   56 TRSULC=VALUE
      RETURN 1
   57 TRNHFC=VALUE
      RETURN 1
   58 TRPHOC=VALUE
      RETURN 1
   65 TRPOTH=VALUE
      RETURN 1
```

```
      SUBROUTINE LABOR(*)
      INTEGER CODE,DATA,R008,A008,C008,H008
      REAL LABCOS,MANDAY,LABNED
      DIMENSION DATA(16)
      COMMON/FIRST/NAME,CODE,DATA,VALUE
      COMMON/FORTH/MANDAY,LABNED,CAPAC
      COMMON/LABO/LABCOS
      COMMON/TEN/R008,A008,C008,H008
      LABCOS=MANDAY*LABNED/CAPAC
      IF(NAME.EQ.R008)GO TO 2
      IF(NAME.EQ.A008)GO TO 3
      IF(NAME.EQ.C008)GO TO 4
      IF(NAME.EQ.H008)GO TO 5
    2 IF(CODE.EQ.01)GO TO 6
      GO TO 7
    6 WRITE(6,10)
   10 FORMAT(1X,'ROSWELL LABOR DRAWING AREA')
      WRITE(6,30)
   30 FORMAT(///,1X,56('*'))
      WRITE(6,20) LABCOS
   20 FORMAT(1X,'*',F8.2,'CENTS - LABOR COST PER TON OF FINISHED PRO
     *')
      WRITE(6,40)
   40 FORMAT(1X,56('*'),///)
    7 WRITE(6,11)DATA
   11 FORMAT(1X,16A4)
      RETURN 1
    3 IF(CODE.EQ.00)GO TO 8
      GO TO 9
    8 WRITE(6,12)
   12 FORMAT(1X,'ARTESIA LABOR DRAWING AREA')
      WRITE(6,30)
      WRITE(6,20) LABCOS
      WRITE(6,40)
    9 WRITE(6,11)DATA
      RETURN 1
    4 IF(CODE.EQ.00)GO TO 14
      GO TO 15
   14 WRITE(6,16)
   16 FORMAT(1X,'CARLSBAD LABOR DRAWING AREA')
      WRITE(6,30)
      WRITE(6,20) LABCOS
      WRITE(6,40)
   15 WRITE(6,11)DATA
      RETURN 1
    5 IF(CODE.EQ.00)GO TO 17
      GO TO 18
   17 WRITE(6,19)
   19 FORMAT(1X,'HOBBS LABOR DRAWING AREA')
      WRITE(6,30)
      WRITE(6,20) LABCOS
      WRITE(6,40)
   18 WRITE(6,11)DATA
      RETURN 1
      END
```

MEMORY REQUIREMENTS 0005EC BYTES

```
      SUBROUTINE POPU(*)
      INTEGER CODE,DATA,R009,A009,C009,H009
      DIMENSION DATA(16)
      COMMON/FIRST/NAME,CODE,DATA,VALUE
      COMMON/EVEVEN/R009,A009,C009,H009
      IF(NAME.EQ.R009)GO TO 2
      IF(NAME.EQ.A009)GO TO 3
      IF(NAME.EQ.C009)GO TO 4
      IF(NAME.EQ.H009)GO TO 5
    2 IF(CODE.EQ.00)GO TO 20
      GO TO 40
   20 WRITE(6,100)
  100 FORMAT(1X,100('*'))
   40 WRITE(6,10)DATA
   10 FORMAT(1X,16A4)
      RETURN 1
    3 WRITE(6,10)DATA
      RETURN 1
    4 WRITE(6,10)DATA
      RETURN 1
    5 WRITE(6,10)DATA
      RETURN 1
      END
```

AL MEMORY REQUIREMENTS 000200 BYTES

```
01                SUBROUTINE MINE(*)
02                INTEGER CODE,DATA,RO10,AO10,CO10,HO10
03                DIMENSION DATA(16)
04                REAL NHFOUR
05                COMMON/FIRST/NAME,CODE,DATA,VALUE
06                COMMON/FORTH/MANDAY,LABNED,CAPAC
07                COMMON/TRANSP/TRPOTR,TRSULR,TRNHFR,TRPHOR,TRPOTA,TRSULA,TRNHFA
                 1HOA,TRPOTC,TRSULC,TRNHFC,TRPHOC,TRPOTH,TRSULH,TRNHFH,TRPHOH
08                COMMON/MINER/TMINCR,TMINCA,TMINCC,TMINCH
09                COMMON/TWELVE/RO10,AO10,CO10,HO10
10                IF(NAME.EQ.RO10)GO TO 2
11                IF(NAME.EQ.AO10)GO TO 3
12                IF(NAME.EQ.CO10)GO TO 4
13                IF(NAME.EQ.HO10)GO TO 6
14              2 IF(CODE.EQ.10)GO TO 7
15                IF(CODE.EQ.11)GO TO 8
16                IF(CODE.EQ.12)GO TO 9
17                IF(CODE.EQ.13)GO TO 11
18                IF(CODE.EQ.14)GO TO 12
19                IF(CODE.EQ.15)GO TO 13
20                IF(CODE.EQ.16)GO TO 14
21                IF(CODE.EQ.17)GO TO 16
22                RETURN 1
23              7 WRITE(6,5)
24              5 FORMAT(1X,'ROSWELL-MINERALS THAT ARE NEEDED FOR FINISHED PRODU
25                WRITE(6,200)
26            200 FORMAT(1X,100('*'))
27             31 POTASH=VALUE
28                WRITE(6,10)POTASH
29             10 FORMAT(1X,F5.3,'TON POTASH NEEDED PER TON OF FINISHED PRODUCT'
30                RETURN 1
31              8 SULFUR=VALUE
32                WRITE(6,15)SULFUR
33             15 FORMAT(1X,F5.3,'TON SULFUR NEEDED PER TON OF FINISHED PRODUCT'
34                RETURN 1
35              9 NHFOUR=VALUE
036               WRITE(6,20)NHFOUR
37             20 FORMAT(1X,F5.3,'TON AMMONIA NEEDED PER TON OF FINISHED PRODUCT
38                RETURN 1
39             11 PHOS=VALUE
040               WRITE(6,25)PHOS
41             25 FORMAT(1X,F5.3,'TON PHOSPHORIC ACID NEEDED PER TON OF FINISHED
                 1DUCT')
42                RETURN 1
043            12 COPOTR=POTASH*VALUE+POTASH*TRPOTR
44                RETURN 1
045            13 COSULR=SULFUR*VALUE+SULFUR*TRSULR
046               RETURN 1
047            14 CONHR=NHFOUR*VALUE+NHFOUR*TRNHFR
048               RETURN 1
049            16 COPHOR=PHOS*VALUE+PHOS*TRPHOR
050               TMINCR=(COPOTR+COSULR+CONHFR+COPHOR)*100./90.
051               WRITE(6,30)
052            30 FORMAT(1X,'TOTAL RAW MINERAL COSTS AT ROSWELL')
053               WRITE(6,100)
054           100 FORMAT(////,1X,51('*'))
055               WRITE(6,35)TMINCR
```

```
ITRAN IV    MODEL 44  PS       VERSION 3   LEVEL 1   DATE  69197      NEW MEXIC
0056          35 FORMAT(1X,'*',F9.2,'CENTS - COST PER TON OF FINISHED PRODUCT*'
0057             WRITE(6,110)
0058         110 FORMAT(1X,51('*'),////)
0059             RETURN 1
0060           3 IF(CODE.EQ.10)GO TO 21
0061             IF(CODE.EQ.11)GO TO 8
0062             IF(CODE.EQ.12)GO TO 9
0063             IF(CODE.EQ.13)GO TO 11
0064             IF(CODE.EQ.14)GO TO 26
0065             IF(CODE.EQ.15)GO TO 27
0066             IF(CODE.EQ.16)GO TO 28
0067             IF(CODE.EQ.17)GO TO 29
0068             RETURN 1
0069          21 WRITE(6,40)
0070          40 FORMAT(1X,'ARTESIA-MINERALS THAT ARE NEEDED FOR FINISHED PRODU
0071             WRITE(6,200)
0072             GO TO 31
0073          26 COPOTA=POTASH*VALUE+POTASH*TRPOTA
0074             RETURN 1
0075          27 COSULA=SULFUR*VALUE+SULFUR*TRSULA
0076             RETURN 1
0077          28 CONHFA=NHFOUR*VALUE+NHFOUR*TRNHFA
0078             RETURN 1
0079          29 COPHOA=PHOS*VALUE+PHOS*TRPHOA
0080             TMINCA=(COPOTA+COSULA+CONHFA+COPHOA)*100./90.
0081             WRITE(6,45)
0082          45 FORMAT(1X,'TOTAL RAW MINERAL COSTS AT ARTESIA')
0083             WRITE(6,100)
0084             WRITE(6,35) TMINCA
0085             WRITE(6,110)
0086             RETURN 1
0087           4 IF(CODE.EQ.10)GO TO 131
0088             IF(CODE.EQ.11)GO TO 8
0089             IF(CODE.EQ.12)GO TO 9
0090             IF(CODE.EQ.13)GO TO 11
0091             IF(CODE.EQ.14)GO TO 36
0092             IF(CODE.EQ.15)GO TO 37
0093             IF(CODE.EQ.16)GO TO 38
0094             IF(CODE.EQ.17)GO TO 39
0095             RETURN 1
0096         131 WRITE(6,55)
0097          55 FORMAT(1X,'CARLSBAD-MINERALS THAT ARE NEEDED FOR FINISHED PROD
               1)
0098             WRITE(6,200)
0099             GO TO 31
0100          36 COPOTC=POTASH*VALUE+POTASH*TRPOTC
0101             RETURN 1
0102          37 COSULC=SULFUR*VALUE+SULFUR*TRSULC
0103             RETURN 1
0104          38 CONHFC=NHFOUR*VALUE+HNFOUR*TRNHFC
0105             RETURN 1
0106          39 COPHOC=PHOS*VALUE+PHOS*TRPHOC
0107             TMINCC=(COPOTC+COSULC+CONHFC+COPHOC)*100./90.
0108             WRITE(6,60)
0109          60 FORMAT(1X,'TOTAL RAW MINERAL COSTS AT CARLSBAD')
0110             WRITE(6,100)
0111             WRITE(6,35) TMINCC
```

```
112               WRITE(6,110)
113               RETURN 1
114             6 IF(CODE.EQ.10)GO TO 41
115               IF(CODE.EQ.11)GO TO 8
116               IF(CODE.EQ.12)GO TO 9
117               IF(CODE.EQ.13)GO TO 11
118               IF(CODE.EQ.14)GO TO 46
119               IF(CODE.EQ.15)GO TO 47
120               IF(CODE.EQ.16)GO TO 48
121               IF(CODE.EQ.17)GO TO 49
122               RETURN 1
123            41 WRITE(6,70)
124            70 FORMAT(1X,'HOBBS-MINERALS THAT ARE NEEDED FOR FINISHED PRODUCT
125               WRITE(6,200)
126               GO TO 31
127            46 COPOTH=POTASH*VALUE+POTASH*TRPOTH
128               RETURN 1
129            47 COSULH=SULFUR*VALUE+SULFUR*TRSULH
130               RETURN 1
131            48 CONHFH=NHFOUR*VALUE+NHFOUR*TRNHFH
132               RETURN 1
133            49 COPHOH=PHOS*VALUE+PHOS*TRPHOH
134               TMINCH=(COPOTH+COSULH+CONHFH+COPHOH)*100./90.
135               WRITE(6,100)
136               WRITE(6,35) TMINCH
137               WRITE(6,110)
138               RETURN
139               END
```

TAL MEMORY REQUIREMENTS 000EB8 BYTES

```
      SUBROUTINE AMOR
      REAL MANDAY,LABNED
      COMMON/SECOND/GROSS,FAPRI,CAPINV
      COMMON/FORTH/MANDAY,LABNED,CAPAC
      COMMON/AMORTI/AMORT
      AMORT=CAPINV*(1./15.)/CAPAC
      WRITE(6,888)
  888 FORMAT(/,1X,'AMORTIZATION COST PER TON OF FINISHED PRODUCT IN
     1S',/)
      WRITE(6,30)
   30 FORMAT(//,1X,10('*'))
      WRITE(6,100)AMORT
  100 FORMAT(1X,'*',F8.3,'*')
      WRITE(6,40)
   40 FORMAT(1X,10('*'),//)
      RETURN
      END
```

AL MEMORY REQUIREMENTS 000278 BYTES

```
1               SUBROUTINE MAINT
2               REAL MAINTE,INSUR
3               COMMON/SECOND/GROSS,FAPRI,CAPINV
4               COMMON/MORCOS/ADCOS
5               MAINTE=.05*CAPINV
6               SUPPLY=.15*MAINTE
7               INSUR=.01*CAPINV
8               ADCOS=(MAINTE+SUPPLY+INSUR)/720000.
9               RETURN
0               END
```

IAL MEMORY REQUIREMENTS 0001B0 BYTES

```
      SUBROUTINE COST
      REAL LABCOS
      COMMON/UTILIT/TCOSR,TCOSA,TCOSC,TCOSH
      COMMON/TAXES/TTOTR,TTOTA,TTOTC,TTOTH
      COMMON/LABO/LABCOS
      COMMON/MINER/TMINCR,TMINCA,TMINCC,TMINCH
      COMMON/EIGHT/SETLA
      COMMON/AMORTI/AMORT
      COMMON/MORCOS/ADCOS
      COMMON/COSTS/PTCOSR,PTCOSA,PTCOSC,PTCOSH
      PTCOSR=(TCOSR+TTOTR+LABCOS+SETLA+TMINCR+AMORT+ADCOS)
      PTCOSA=(TCOSA+TTOTA+LABCOS+SETLA+TMINCA+AMORT+ADCOS)
      PTCOSC=(TCOSC+TTOTC+LABCOS+SETLA+TMINCC+AMORT+ADCOS)
      PTCOSH=(TCOSH+TTOTH+LABCOS+SETLA+TMINCH+AMORT+ADCOS)
      WRITE(6,50)
   50 FORMAT('1')
      WRITE(6,5)
    5 FORMAT(1X,'TOTAL COST FOR FACTORS EVALUATED IN ROSWELL')
      WRITE(6,30)
   30 FORMAT(////,1X,51('*'))
      WRITE(6,10)PTCOSR
   10 FORMAT(1X,'*',F9.2,'CENTS - COST PER TON OF FINISHED PRODUCT*'
      WRITE(6,40)
   40 FORMAT(1X,51('*'),////)
      WRITE(6,15)
   15 FORMAT(1X,'TOTAL COST FOR FACTORS EVALUATED IN ARTESIA')
      WRITE(6,30)
      WRITE(6,10)PTCOSA
      WRITE(6,40)
      WRITE(6,20)
   20 FORMAT(1X,'TOTAL COST FOR FACTORS EVALUATED IN CARLSBAD')
      WRITE(6,30)
      WRITE(6,10)PTCOSC
      WRITE(6,40)
      WRITE(6,25)
   25 FORMAT(1X,'TOTAL COST FOR FACTORS EVALUATED IN HOBBS')
      WRITE(6,30)
      WRITE(6,10)PTCOSH
      WRITE(6,40)
      RETURN
      END
```

TAL MEMORY REQUIREMENTS 000570 BYTES

```
      SUBROUTINE EVAL
      COMMON/SECOND/GROSS,FAPRI,CAPINV
      COMMON/FORTH/MANDAY,LABNED,CAPAC
      COMMON/SIXTH/PRICE
      COMMON/COSTS/PTCOSR,PTCOSA,PTCOSC,PTCOSH
      COMMON/PERCEN/PECEPR,PECEPA,PECEPC,PECEPH
      PROFIR=PRICE-PTCOSR
      PROFIA=PRICE-PTCOSA
      PROFIC=PRICE-PTCOSC
      PROFIH=PRICE-PTCOSH
      TOPROR=PROFIR*CAPAC
      TOPROA=PROFIA*CAPAC
      TOPROC=PROFIC*CAPAC
      TOPROH=PROFIH*CAPAC
      WRITE(6,50)
   50 FORMAT('1')
      IF(TOPROR-.45*CAPINV)2,3,3
    2 WRITE(6,205)
  205 FORMAT(//,1X,50('*'))
      WRITE(6,200)
  200 FORMAT(1X,'ROSWELL DOES NOT SATISFY THE NEEDED PROFIT MARGIN')
      WRITE(6,206)
  206 FORMAT(1X,50('*'),//)
   10 PECEPR=(TOPROR/CAPINV)*100
      WRITE(6,202)
  202 FORMAT(////,1X,33('*'))
      WRITE(6,201)PECEPR
  201 FORMAT(1X,'*',F4.1,'% - PROFIT AT THIS LOCATION*')
      WRITE(6,203)
  203 FORMAT(1X,33('*'),////)
      GO TO 101
    3 WRITE(6,205)
      WRITE(6,300)
  300 FORMAT(1X,'ROSWELL DOES SATISFY THE NEEDED PROFIT MARGIN')
      WRITE(6,206)
      GO TO 10
  101 IF(TOPROA-.45*CAPINV)4,5,5
    4 WRITE(6,205)
      WRITE(6,400)
  400 FORMAT(1X,'ARTESIA DOES NOT SATISFY THE NEEDED PROFIT MARGIN')
      WRITE(6,206)
   20 PECEPA=(TOPROA/CAPINV)*100
      WRITE(6,202)
      WRITE(6,201)PECEPA
      WRITE(6,203)
      GO TO 102
    5 WRITE(6,205)
      WRITE(6,500)
  500 FORMAT(1X,'ARTESIA DOES SATISFY THE NEEDED PROFIT MARGIN')
      WRITE(6,206)
      GO TO 20
  102 IF(TOPROC-.45*CAPINV)6,7,7
    6 WRITE(6,205)
      WRITE(6,600)
  600 FORMAT(1X,'CARLSBAD DOES NOT SATISFY THE NEEDED PROFIT MARGIN'
      WRITE(6,206)
   30 PECEPC=(TOPROC/CAPINV)*100
```

```
58              WRITE(6,202)
59              WRITE(6,201)PECEPC
60              WRITE(6,203)
61              GO TO 103
62            7 WRITE(6,205)
63              WRITE(6,700)
64          700 FORMAT(1X,'CARLSBAD DOES SATISFY THE NEEDED PROFIT MARGIN')
65              WRITE(6,206)
66              GO TO 30
67          103 IF(TOPROH-.45*CAPINV)8,9,9
68            8 WRITE(6,205)
69              WRITE(6,800)
70          800 FORMAT(1X,'HOBBS DOES NOT SATISFY THE NEEDED PROFIT MARGIN')
71              WRITE(6,206)
72           40 PECEPH=(TOPROH/CAPINV)*100
73              WRITE(6,202)
74              WRITE(6,201)PECEPH
75              WRITE(6,203)
76              GO TO 105
77            9 WRITE(6,205)
78              WRITE(6,900)
79          900 FORMAT(1X,'HOBBS DOES SATISFY THE NEEDED PROFIT MARGIN')
80              WRITE(6,206)
81              GO TO 40
82          105 WRITE(6,950)
83          950 FORMAT (/,4X,52('-'))
84              WRITE(6,951)
85          951 FORMAT(3X,'/THE ABOVE PROFIT MARGINS ARE CALCULATED USING ONLY
               1,/,2X,'/ DIRECT COSTS AS A BASIS OF COST DETERMINATION     /')
86              WRITE(6,952)
87          952 FORMAT(2X,52('-'),//)
88              RETURN
89              END
```

TAL MEMORY REQUIREMENTS 000A08 BYTES

```
001              SUBROUTINE TABLE
002              COMMON/UTILIT/TCOSR,TCOSA,TCOSC,TCOSH
003              COMMON/TAXES/TTOTR,TTOTA,TTOTC,TTOTH
004              COMMON/EIGHT/SETLA
005              COMMON/LABO/LABCOS
006              COMMON/THIRD/PROPER
007              COMMON/MINER/TMINCR,TMINCA,TMINCC,TMINCH
008              COMMON/AMORTI/AMORT
009              COMMON/MORCOS/ADCOS
010              COMMON/PERCEN/PECEPR,PECEPA,PECEPC,PECEPH
011              COMMON/COSTS/PTCOSR,PTCOSA,PTCOSC,PTCOSH
012              WRITE(6,5)
013            5 FORMAT('1')
014              WRITE(6,1)
015            1 FORMAT(37X,'TABLE')
016              WRITE(6,2)
017            2 FORMAT(/,26X,'COSTS AND EVALUATION SUMMARY')
018              WRITE(6,3)
019            3 FORMAT(/,19X,'COSTS PER TON OF FINISHED PRODUCT IN CENTS',/)
020              WRITE(6,10)
021           10 FORMAT(///,1X,80('*'))
022              WRITE(6,15)
023           15 FORMAT(1X,'*',11X,'ROSWELL',12X,'ARTESIA',12X,'CARLSBAD',12X,'
                 1S     *')
024              WRITE(6,20)
025           20 FORMAT(1X,'*',78('-'),'*')
026              WRITE(6,25)
027           25 FORMAT(1X,'* UTILITY',70X,'*')
028              WRITE(6,30)TCOSR,TCOSA,TCOSC,TCOSH
029           30 FORMAT(1X,'* COST',6X,F8.2,11X,F8.2,11X,F8.2,12X,F8.2,1X,'*')
030              WRITE(6,20)
031              WRITE(6,35)
032           35 FORMAT(1X,'* TAX',74X,'*')
033              WRITE(6,30)TTOTR,TTOTA,TTOTC,TTOTH
034              WRITE(6,20)
035              WRITE(6,40)
036           40 FORMAT(1X,'* SET LABOR',68X,'*')
037              WRITE(6,30)SETLA,SETLA,SETLA,SETLA
038              WRITE(6,20)
039              WRITE(6,45)
040           45 FORMAT(1X,'* LABOR',72X,'*')
041              WRITE(6,30)LABCOS,LABCOS,LABCOS,LABCOS
042              WRITE(6,20)
043              WRITE(6,50)
044           50 FORMAT(1X,'* PROPER',71X,'*')
045              WRITE(6,55)
046           55 FORMAT(1X,'* AVAILABLE',3X,'YES',16X,'NO',17X,'YES',17X,'YES',
                 1*')
047              WRITE(6,20)
048              WRITE(6,60)
049           60 FORMAT(1X,'* MINERAL',70X,'*')
050              WRITE(6,30)TMINCR,TMINCA,TMINCC,TMINCH
051              WRITE(6,20)
052              WRITE(6,65)
053           65 FORMAT(1X,'* AMORTIZATION',65X,'*')
054              WRITE(6,30)AMORT,AMORT,AMORT,AMORT
055              WRITE(6,20)
```

```
0056              WRITE(6,70)
0057           70 FORMAT(1X,'* ADDITIONAL',67X,'*')
0058              WRITE(6,30)ADCOS,ADCOS,ADCOS,ADCOS
0059              WRITE(6,20)
0060              WRITE(6,75)
0061           75 FORMAT(1X,'* TOTAL DIRECT',65X,'*')
0062              WRITE(6,30)PTCOSR,PTCOSA,PTCOSC,PTCOSH
0063              WRITE(6,20)
0064              WRITE(6,80)PECEPR,PECEPA,PECEPC,PECEPH
0065           80 FORMAT(1X,'* PROFIT',4X,F5.1,14X,F5.1,14X,F5.1,15X,F5.1,6X,'*'
0066              WRITE(6,85)
0067           85 FORMAT(1X,80('*'),////////////////////////////////)
0068              RETURN
0069              END
```

TOTAL MEMORY REQUIREMENTS 0008B8 BYTES

ELL

RAPHIC LOCATION = SOUTHEASTERN NEW MEXICO, CHAVES COUNTY
ACTER OF SURROUNDING AREA
ATION = 3600
AIN = RELATIVELY FLAT PERMIAN
D HAZARDS SLIGHT = ONE HUNDRED YEAR FLOOD IN 0.7 YEARS

L UTILITY COST AT ROSWELL

****
0.89CENTS = COST PER KWH FOR PURCHASED PRODUCT*
****

****
L TAX FOR ROSWELL LOCATION

****
5.94CENTS = COST PER KWH FOR PURCHASED PRODUCT*
****

LABLE INDUSTRIAL PROPERTY
EAGE = 5 LARGE PLOTS PLOT NO. 1=710 ACRES, PLOT NO. 2= 540
ES, PLOT NO. 3=170 ACRES, PLOT NO. 4=200 ACRES, AND PLOT
5=210 ACRES
XIMITY TO RAILROAD = PLOTS 1, 3, 4 ARE IMMEDIATELY ADJACENT
RAILROAD FACILITIES, PLOT NO 4 IS NOT LOCATED CONVENIENTLY NEAR
SENT TRACKAGE.
VATION = 3567 TO 3600 FEET ON ALL SITES
NDATION = SITES NO. 1, 2, AND 4 ON CLAYEY SEDIMENTS ALLUVIAL
LS, AND SITE NO. 5 ON BEDROCK OUTCROP.
ESSIBILITY TO UTILITIES = ALL SITES ARE ALREADY PROVIDED
PROVISIONS FOR ELECTRICITY, GAS AND WATER.
XIMITY TO TRANSPORTATION = PLOTS 1, 2, AND 3 ARE WITHIN 1 MILE
Y ACCESS TO HIGHWAY SYSTEMS.

WELL LOCATION
****
LABLE PROPERTY DOES NOT MEET REQUIREMENTS

****
40 ACRES*
****

MATE IN ROSWELL AREA
****
MATE = GENERAL DESCRIPTION
TINCT SUMMER AND WINTER SEASONS, COOLER AT NIGHT, WINTERS = COLD.
NDANT SUNSHINE = APPROXIMATELY THREE HUNDRED
ERAGE ANNUAL RAINFALL
ING WATER SUPPLY AVAILABLE
GH TEMPERATURE RECORD FOR JULY
NUARY AVERAGE
RING MID-SUMMER AGRICULTURAL OPERATIONS OF THE UNITED STATES
NDINGS

. LABOR MARKET AREA

****

.90CENTS = LABOR COST PER HOUR

****

SKILLED LABOR AS OF OCTOBER 25, 1966 = 979

CAL AND MANAGERIAL = 92

AL = 96

= 49

IC = 36

E EXCEPT DOMESTIC = 93

G AND FORESTRY = 12

SSING = 10

E TRADES = 12

WORK = 17

URAL WORK = 62

= 50

= 103

L EMPLOYMENT DRAWING AREA

S COUNTY TOTAL EMPLOYMENT = 20,000

ULTURAL = 1,500

MPLOYED = 1,946

AND SALARY = 17,500

S = 430

RUCTION = 810

AC TURING = 920

PORTATION AND UTILITIES = 850

= 2,900

INS. AND REAL ESTATE = 670

CES AND MISC. = 2,640

RNMENT = 3,060

****

ATION CHAVES = 51,000

RUN POPULATION FIGURES CHAVES COUNTY = 30,000 BY 1990

000 BY 2030

RUN STATE POPULATION YEAR 2000 = 5,000,000

ELL-MINERALS THAT ARE NEEDED PER FINISHED PRODUCT

****

7TON POTASH NEEDED PER TON OF FINISHED PRODUCT

LTON SULFUR NEEDED PER TON OF FINISHED PRODUCT

2TON AMMONIA NEEDED PER TON OF FINISHED PRODUCT

8TON PHOSPHORIC ACID NEEDED PER TON OF FINISHED PRODUCT

L RAW MINERAL COSTS AT MARKET

****

661.25CENTS = COST PER TON OF FINISHED PRODUCTS

****

ESIA

GRAPHIC LOCATION = SOUTHEASTERN NEW MEXICO EDDY COUNTY
RACTER OF SURROUNDING TERRITORY
VATION = 3400
RAIN = RELATIVELY FLAT FARM LAND
OD HAZARDS SLIGHT = ONE MINOR FLOOD IN 47 YEARS

ES OUTSIDE CITY LIMITS
AL UTILITY COST AT ARTESIA

****
08.28CENTS = COST PER TON OF FINISHED PRODUCT*
****

AL TAX FOR ARTESIA LOCATION

****
95.94CENTS = COST PER TON OF FINISHED PRODUCT*
****

ILABLE INDUSTRIAL PROPERTIES

LOTS
ACRES 104 ACRES
CTRIC POWER AND NATURAL GAS FACILITIES PROVIDED

ESIA LOCATION

ILABLE PROPERTY DOES NOT MEET ACREAGE REQUIREMENTS

****
04.ACRES*
****

MATE IN ARTESIA AREA

MATE
ERAL DESIGNATION SEMI-ARID CONTINENTAL WITH A DRY HOT SUMMER
NFALL MAXIMA. SUMMERS OFF DATA AND WINTERS ARE MILD.
NDANT SUNSHINE, GENERALLY LOW HUMIDITY.
RAGE ANNUAL RAINFALL -
ING WINTER SOME PRECIPITATION FALL AS SNOW
H TEMPERATURE MID-MAY TO MID-SEPTEMBER 90-100.
UARY AVERAGE MINIMUM TEMPERATURE
ING MID-WINTER ABOUT 100 DEGREES OF THE HEIGHTS SHOW LOW
DINGS BELOW THE FREEZING POINT.
RAGE HOURLY WIND VELOCITY

MORNING TO LOS ANGELES, CALIFORNIA, PHOENIX, ARIZONA,
ESIA LABOR MARKET AREA

****
304.50CENTS = LABOR COST PER TON OF FINISHED PRODUCT*
****

IOR
TAL SKILLED LABOR AS OF OCTOBER 25, 1968 = 151
OFESSIONAL, TECHNICAL AND MANAGERIAL = 7
RICAL = 21
ES = 11
ESTIC = 9
VICE EXCEPT DOMESTIC = 23
RMING AND FORESTRY = 7
HINE TRADES = 4
NCH WORK = 3
RUCTURAL = 23
SC. = 16
TRY = 23
SKILLED LABOR =
DY COUNTY TOTAL EMPLOYMENT = 16,000

PULATION EDDY COUNTY = 40,000
NG-RUN COUNTY POPULATION YEAR 1980 = 50,000
AR 2000 = 90,000

TESIA-MINERALS THAT ARE NEEDED FOR FINISHED PRODUCT
****
227TON POTASH NEEDED PER TON OF FINISHED PRODUCT
031TON SULFUR NEEDED PER TON OF FINISHED PRODUCT
112TON AMMONIA NEEDED PER TON OF FINISHED PRODUCT
508TON PHOSPHORIC ACID NEEDED PER TON OF FINISHED PRODUCT
TAL RAW MINERAL COSTS PER TON

****
5661.23COSTS = COST PER TON OF FINISHED PRODUCTS
****

SBAD

RAPHIC LOCATION = SOUTHEASTERN NEW MEXICO, EDDY COUNTY
ACTER OF SURROUNDING TERRITORY
ATION = 3100 FEET
AIN = RELATIVELY FLAT FARM LAND.
) HAZARDS VERY SLIGHT

UTILITY COST AT CARLSBAD

****
7.62CENTS - COST PER TON OF FINISHED PRODUCT*
****

TAX FOR CARLSBAD LOCATION

****
5.94CENTS - COST PER TON OF FINISHED PRODUCT*
****

LABLE INDUSTRIAL PROPERTIES
MAJOR AREAS ARE AVAILABLE
SITE CONTAINS A TOTAL OF 105 ACRES. IT IS OWNED BY THE
SBAD DEVELOPMENT FOUNDATION. UTILITIES INCLUDING WATER ARE
LABLE IN THE AREA. SITE IS ADJACENT TO THE SANTA FE RAIL-
TRACK.
SECOND SITE IS 496 ACRES LOCATED ADJACENT TO THE CARLSBAD
CIPAL AIRPORT. THE AREA IS [illegible] OF THE CITY. IT HAS 16
WATER WELLS WITH A CAPACITY OF 1.5 MILLION GPD. THERE IS A
R SYSTEM WITH A CAPACITY OF MORE THAN 600,000 GPD.

SBAD LOCATION
****
LABLE PROPERTY [illegible] ACREAGE REQUIREMENTS

****
0 ACRES*
****

ATE IN CARLSBAD AREA
IATE
RAL DESCRIPTION - SEMI-ARID CONTINENTAL WITH SUMMER RAINFALL
MA.
IERS ARE WARM, WINTERS ARE MILD
IDANT SUNSHINE WITH GENERALLY LOW RELATIVE HUMIDITIES.
AGE ANNUAL RAINFALL = 12 IN.
ING WINTER SNOWS, PRECIPITATION FALLS AS RAIN OCCASIONALLY
EEDING 6 INCHES IN 24 HOURS.
TEMPERATURE [illegible]
IARY AVERAGE DAYTIME SHADE TEMPERATURE = 60 DEGREES F.
ING MID-WINTER ABOUT [illegible] NIGHTS SHOW LOW
AGE HOURLY WIND VELOCITY = 11.2 MPH
OCITY OF WIND [illegible]

SBAD LABOR [illegible]

****
04.50CENTS - LABOR COST PER TON OF FINISHED PRODUCT
****

R
L SKILLED LABOR AS OF OCTOBER 25, 1968 = 465
INICAL AND MANAGERIAL 17
ICAL 43
S 27
STIC 18
ICE EXCEPT DOMESTIC 107
ING AND FORESTRY 18
ESSING 14
INE TRADES 25
SH WORK 4
JCTURAL WORK 79
G. 59
RY 54
KILLED
Y COUNTY TOTAL EMPLOYMENT (1966) 16,800
ICULTURAL = 1200
-AGRICULTURAL = 15,600
E-EMPLOYED = 1,744
E AND SALARY = 13,960
ING = 1,200
STRUCTION = 610
NUFACTURING = 660
NSPORTATION = 750
DE = 2,400
., INS. AND REAL ESTATE = 450
VICES AND MISC. = 2,400
ERNMENT = 2,150

PULATION
DY COUNTY = 49,900 (1967)
NG-RUN POPULATION FIGURES FOR FUDY COUNTY YEAR 1980 = 60,600
PULATION BY YEAR 2000 = 70,000

RLSBAD-MINERALS THAT ARE NEEDED FOR FINISHED PRODUCT
****
227TON POTASH NEEDED PER TON OF FINISHED PRODUCT
031TON SULFUR NEEDED PER TON OF FINISHED PRODUCT
112TON AMONIA NEEDED PER TON OF FINISHED PRODUCT
608TON PHOSPHORIC ACID NEEDED PER TON OF FINISHED PRODUCT
TAL RAW MINERAL COSTS AT CARLSBAD

****
5590.42CENTS = COST PER TON OF FINISHED PRODUCT
****

S

RAPHIC LOCATION = SOUTHEASTERN NEW MEXICO, LEA COUNTY.
~~ACTER OF SURROUNDING TERRITORY.~~
ATION = 3600 FEET.
~~AIN = RELATIVELY FLAT FARM LAND.~~
D HAZARDS VERY SLIGHT BUT SOME NOAH.

L UTILITY COST AT HOBBS

****
07.18CENTS = COST PER TON OF FINISHED PRODUCT*
****

L TAX FOR HOBBS LOCATION

****
25.94CENTS = COST PER TON OF FINISHED PRODUCT*
****

ILABLE INDUSTRIAL PROPERTIES

~~HOBBS AREA HAS SEVERAL INDUSTRIAL PROPERTIES WHICH~~
HIGHLY FAVORABLE PLANT SITE FOR NEW INDUSTRY
~~E 5,000 ACRES ARE INCLUDED~~
ORTUNITY FOR LOCAL PLANT EXPANSION AND SITES FOR NEW
~~USTRIES ARE READILY AVAILABLE IN SEVERAL LOCATIONS NEAR~~
LROADS, ALONG MAJOR HIGHWAYS, OUTSIDE AND INSIDE THE CITY
~~ITS, AND AT THE HOBBS AIR BASE INDUSTRIAL DISTRICT, 5 MILES~~
THWEST OF THE HOBBS CITY LIMITS.
~~AIR BASE INDUSTRIAL SITE~~
PERTY DEEDED TO THE CITY OF HOBBS
~~60 ACRES.~~
ORABLE PURCHASING OR LEASING ARRANGEMENTS CAN BE OBTAINED
~~HT THOUSAND ACRE FEET PER YEAR IN THE HOBBS AREA ARE AVAILABLE~~
LROAD SPUR LINES IN PLACE
~~ER MAINS ARE IN PLACE AND A GENERAL ELECTRICAL PLANT WITH~~
LECTION DATES ARE PRESENT
~~5 KV LINES ARE IN PLACE~~
8 INCHES HIGH PRESSURE NATURAL GAS LINE IS IN PLACE
~~PERTY ERECTS ON A BASIC SITE~~

~~BS LOCATION~~
~~ILABLE PROPERTY HOBBS HAS SEVERAL BENEFITS~~

****
000 ACRES*
****

IMATE IN HOBBS AREA

IMATE

41-ARID CONTINENTAL TO OF SEMI-ARID EXTREMES MAXIMA

~~ERAGE ANNUAL RAINFALL~~

ERAGE TEMPERATURE 60 DEGREES DAYTIME AND 45 DEGREES NIGHT

NSPORTATION COSTS PER TON PER HUNDRED MILES, IN CENTS

	Russell	Arcadia	Carlsbad	Hobbs
ASH-62%	800.000	800.000	500.000	500.000
FUR-90%	750.000	750.000	525.000	525.000
ONIA	0.0	0.0	0.0	0.0
SPHURIC ACID-57%	1620.00	1620.00	1620.00	1620.00

AS LABOR DRAWING AREA

304.SOCIETIES - LABOR USED PER TON OF PROCESSED PRODUCTS

HOR
E HOBBS AND LEA COUNTY LABOR DISTRICT SAYS A SURPLUS OF HAS A
ULATION OF APPROXIMATELY
ENT STUDIES ESTIMATE THAT JOB OPPORTUNITIES SHOULD ATTRACT
TOTAL OF
RE 800-1000 FEMALES TODAY IF AVAILABLE FOR WORK OF NEW
LOYMENT OPPORTUNITIES WERE PROVIDED
IS THE DIFFICULTY OF POSITIVELY IN THE U.S. THAT NEW EMPLOYERS
KING TO TAKE A PLANT WHERE SUFFICIENT QUALIFIED LABOR EXISTS A
GH DEGREE OF SELECTION OF SKILLED CANDIDATES.
DUSTRIAL LABOR OPERATIONS IN THE AREA.
JR WORK HABITS, CHARACTERISTIC OF MANY INDUSTRIAL GROUPS
AMORITTES, HAVE NOT BEEN TESTED IN THE HOBBS AND LEA
UNTY LABOR FORCE.
E LOCAL LABOR OF FULL TIME SKILLED MEN CAN BE ATTRACTED TO
NUFACTURING JOBS FOR A PERIOD OF 5 TO 10 PER CENT.
VAILING RATE HAS BEEN FOR GENERAL
A COUNTY MANUFACTURING CONCERN, WHICH EMPLOYS TO 2,000
E HOBBS.
UPATIONAL GROUP DISTRIBUTION OF LABOR AREA OF HOBBS
TAL
OFESSIONAL AND TECHNICAL
ERICAL
ERS
RVICE EXCEPT DOMESTIC
RMING, FISHERY
OCESSING
FT WORK
RUCTURAL WORK
SC
TRY
A COUNTY
PLOYMENT TOTAL
RICAN POPULATION

AND SALARY = 17,050
NG = 4,910
TRUCTION = 1,010
FACTURING = 71,
SPORTATION AND UTILITIES = 7,050
E = 3,360
, INS. AND R.E. = 470
IGES AND MISC. = 2,320
RNMENT = 2,150

LATION
COUNTY = 49,000
ECTED POPULATION YEAR 1980 = 75,000
ATION BY YEAR 2000 = 120,000

S-MINERALS THAT ARE NEEDED FOR FINISHED PRODUCT
****
7TON POTASH NEEDED PER TON OF FINISHED PRODUCT
1TON SULFUR NEEDED PER TON OF FINISHED PRODUCT
2TON AMMONIA NEEDED PER TON OF FINISHED PRODUCT
8TON PHOSPHORIC ACID NEEDED PER TON OF FINISHED PRODUCT

****
590.42CENTS = COST PER TON OF FINISHED PRODUCT*
****

ZATION COST PER TON OF FINISHED PRODUCT IN CENTS

****
24.074*
****

COST FOR FACTORS EVALUATED IN ROSWELL

****
2.18CENTS - COST PER TON OF FINISHED PRODUCT*
****

COST FOR FACTORS EVALUATED IN ARTESIA

****
39.57CENTS - COST PER TON OF FINISHED PRODUCT*
****

COST FOR FACTORS EVALUATED IN CARLSBAD

****
398.10CENTS - COST PER TON OF FINISHED PRODUCT*
****

COST FOR FACTORS EVALUATED IN TOBOSA

****
397.67CENTS - COST PER TON OF FINISHED PRODUCT*
****

****
ELL DOES SATISFY THE REQUIREMENT THAT IT MAKE A
****

****
.0% - PROFIT AT THIS LOCATION*
****

****
ESIA DOES SATISFY THE REQUIREMENT THAT IT MAKE A
****

****
.7% - PROFIT AT THIS LOCATION*
****

****
LSBAD DOES SATISFY THE REQUIREMENT THAT IT MAKE A
****

****
3.5% - PROFIT AT THIS LOCATION*
****

****
BBS DOES SATISFY THE REQUIREMENT THAT IT MAKE A
****

% - PROFIT AT THIS LOCATION*

E ABOVE PROFIT MARGINS ARE CALCULATED USING ONLY /
IRECT COSTS AS A BASIS OF COST DETERMINATION

TABLE

COSTS AND EVALUATION SUMMARY

COSTS PER TON OF FINISHED PRODUCT IN CENTS

	ROSWELL	ARTESIA	CARLSBAD	HOBBS
LITY				
T	110.89	104.24	107.62	10[illegible]
T	3725.94	3695.94	3725.94	372[illegible].96
LABOR				
T	17.43	17.43	17.43	17.43
OR				
T	304.50	304.50	304.50	304.50
PER				
ILABLE	[illegible]	[illegible]	[illegible]	[illegible]
NERAL				
ST	5661.23	5661.23	5690.42	5[illegible].42
ORTIZATION				
ST	324.07	324.07	324.07	[illegible].07
DITIONAL				
ST	328.12	328.12	328.12	328.12
TAL DIRECT				
ST	10472.18	[illegible]	10498.10	[illegible]
OFIT	52.0	[illegible]	[illegible]	[illegible]

This thesis is accepted on behalf of the faculty of the Institute by the following committee:

Date: July 31, 1969