Information and Statistical Facts on Coal and Uranium Mining in Texas

Railroad Commission of Texas

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INFORMATION AND STATISTICAL FACTS ON COAL AND URANIUM MINING IN TEXAS

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Foreword

This document is meant to provide a brief overview of the surface mining activities in the State of Texas. Regulation of the exploration and surface mining of coal and uranium in the State is under the jurisdiction of the Railroad Commission of Texas. The Surface Mining and Reclamation Division of this agency was created in 1975 in accordance with legislative directive.

Authority for the regulation of this industry was granted pursuant to the adoption of the **Texas Surface Coal Mining and Reclamation Act,** TEX. REV. CIV. STAT. ANN. art. 5290-11, and the **Texas Uranium Surface Mining and Reclamation Act,** TITLE IV, Chapter 131, **Natural Resources Code.** Permitting, enforcement, and oversight of surface mining operations are conducted in accordance with the State "Coal Mining Regulations" and "Uranium Mining Regulations".

The coal and uranium mining industry in Texas has undergone a rapid expansion in recent years. Due to the nature of this industry, the materials presented in this publication are accurate, up to the date of printing.

The information presented was compiled by members of the staff of the Surface Mining and Reclamation Division. Valuable information and timely suggestions were also contributed by the following individuals:

Dr. William R. Kaiser,
Bureau of Economic Geology;

Milton Lee,
Public Utilities Commission; and

C. D. Rao,
Texas Energy and Natural Resources Advisory Council

Their assistance and expertise is greatly appreciated.

Energy Resource Comparisons

1 lb. of lignite = 6700 Btu's 1/
1 ton of lignite = 13.4 M Btu's
= 2.3 BBL of oil
= 96.6 gals. of oil
= 12,984.5 cu. ft. of natural gas
= 0.09 lb. of U_3O_8 (Enriched)

1 lb. of U_3O_8 (Enriched) 2/ = 147.6 M Btu's
= 11 tons of lignite
= 25.5 BBL of oil
= 1071 gals. of oil
= 143,023.25 cu. ft. of natural gas

1 BBL of oil = 5.8 M. Btu's
= 42 gals.
= 0.433 tons of lignite
= 0.039 lb. of U_3O_8 (Enriched)
= 5620.16 cu ft. of natural gas

1 cu ft. of natural gas (from "in situ") = 105 Btu's
1 cu. ft. of natural gas = 1032 Btu's
= 0.00018 BBL of oil
= 0.000077 tons of lignite
= 0.000007 lb. of U_3O_8 (Enriched)

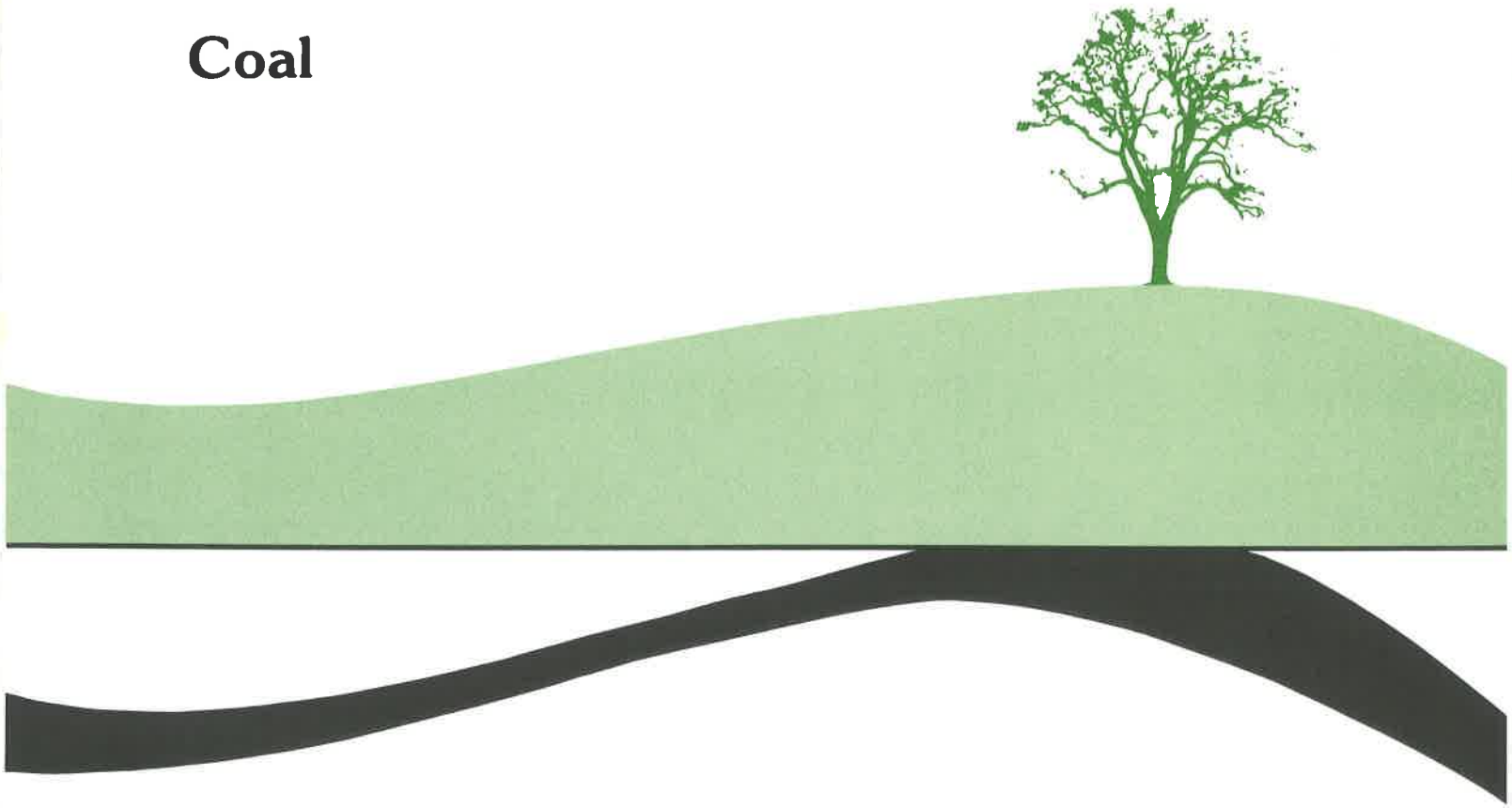
Requirements to operate a 1000 MW capacity electrical output facility at a 75% capacity factor:

Uranium = 33 metric tons/yr.
Coal = 2.3 million tons/yr.
Residual fuel oil = 10 million barrels/yr.
Natural gas = 64 million cu. ft./yr.
Solar cells = 25,000 acres

1/ Btu value is dependent upon the quality of lignite; however, this is an average for Texas.

2/ Enriched uranium has 3.5% U_{235} whereas unenriched is 1% or less U_{235}.

Coal



Information on Coal and Lignite in Texas

I. From: *Kaiser, W.R.; W.B. Ayers, Jr.; and L.W. LaBrie. 1980. *Lignite Resources in Texas*. Bureau of Economic Geology, The University of Texas at Austin, and Texas Energy and Natural Resources Advisory Council. 52 pp.

and

*White, D.M.; W.R. Kaiser; and C.G. Groat. 1981. *Status of Gulf Coast Lignite Activity*. Presented at the Eleventh Biennial Lignite Symposium; June 15-17, 1981; San Antonio, Texas.

Texas lignite occurs in three Eocene (lower Tertiary) geologic units—The Wilcox Group, Jackson Group, and Yegua Formation. Wilcox lignite is the best grade (6500 Btu/lb.; 3,612 Kcal./kg.), Yegua is intermediate (5800 Btu/lb.; 3,223 Kcal./kg., and Jackson is the poorest grade (4500 Btu/lb.; 2,501 Kcal./kg.) lignite in Texas.

Near-surface lignite resources in Texas are found at depths between 20 and 200 ft. (6.1 and 61 m.). Seams that are 3 ft. (0.9 m.) or thicker contain approximately 23,377 million short tons (21,208 million metric tons). More than 90 percent of these resources occur in the Wilcox and Jackson Groups north of the Colorado River. The size of individual deposits ranges from 50 to 500 million tons (45 to 450 million metric tons). The average seam thickness is less than 5 ft. (1.5 m.); a 10 ft. seam is exceptional. Depending upon mining depth, reserves are estimated to be 8,635 to 11,102 million tons (7,834 to 10,072 million metric tons). Deep-basin resources at depths between 200 and 2,000 ft. (61 and 610 m.) in seams 5 ft. (1.5 m.) or thicker amount to approximately 34,819 million tons (31,588 million metric tons). Approximately 70 percent of these deep-basin resources are in the Wilcox Group and 30 percent in the Jackson Group. Approximately 2.7 million acres (1.1 million ha.) are leased for lignite which accounts for approximately 60% of the total lignite lease acreage for the U.S. Gulf Coast Province.

Today lignite is being used to generate approximately 20 percent of the State's electricity. Texas is now the Nation's ninth largest coal producing state and is expected to move up in the rankings (8th by 1985) as production increases in the 1980's to an estimated 44 million tons in 1985.

The shift to lignite has been triggered by the higher prices of energy alternatives. For comparison, energy costs per million Btu are: Texas Lignite, $.80; Western subbituminous coal, $2.00; natural gas, $2.83; and oil at the world price, $5.68 (these prices are an update from the original to reflect the 1981 average for Texas). The economic impacts of Federal legislation and regulation stimulate additional demand for lignite: a) Railroad rate increases granted by the Interstate Commerce Commission under the Railroad Revitalization and Regulatory Reform Act of 1976 (4R Act) have dramatically increased the cost of Western coal in Texas (about two-thirds of the cost of Western coal delivered to San Antonio is for rail transport cost); b) universal scrubbing as required by the Clean Air Act Amendments means that scrubbers must be placed on all new coal-fired power plants irrespective of sulfur content which offsets the advantage of low-sulfur Western coal; and c) the Power Plant and Industrial Fuel Use Act of 1978 and the Natural Gas Policy Act of 1978 will ultimately force the conversion to coal in the industrial sector.

Decisions by planners to use Western subbituminous coal or Texas lignite ultimately depend on reserves (economically recoverable resources) and involve hundreds of millions

of dollars for Texas consumers. Some projections based on present reserve etimates indicate that by the year 2000, lignite will be supply limited rather than demand limited. If indeed this is the case, then research and development priority should be given to technology for recovering lignite at increasingly greater depths.

Reserves

Reserves are that part of the demonstrated resources that can be economically and legally extracted at the time of determination. Reserves are dynamic and change with the times, being affected by mining depth, stripping ratio, minimum seam thickness, mining method, recovery factor, multiseam versus single-seam deposit, illegal fraction, air quality regulations, price and availability of competing fuels, ultimate use, and advancing technology.

Mining Factors

Most of the mining in Texas is done by the area surface mining method. This mining is done by dragline sidecasting or the use of scrapers. Area mining is commonly done to depths of less than 120 ft. (37 m.); however, at times mining reaches a current economic cutoff depth of 150 ft. (46 m.). Average stripping ratios per mine currently are less than 8 to 1 (cu. yd. of overburden per ton of lignite mined) with the average maximum stripping ratio currently about 15 to 1 and expected to increase to 20 to 1. Recovery factors of 80 to 95 percent of the seam deposit are being achieved. Dragline sidecasting when mining single- or double-seam deposits at less than 120 ft. (37 m.) is the least expensive method. However, the dragline is inefficient in multiseam mining and no more than two overlying seams can be efficiently mined on the way down to the main seam.

Scrapers are suitable for multi, thinseam mining where output is small, 1 to 2 million tons (0.9 to 1.8 million short tons) per year. Multiseam mines may require a combination of different types of equipment. The same equipment is often used for coal loading, haulage, and reclamation, resulting in multiple assignments for specific pieces of equipment. Overburden removal and reclamation may be conducted simultaneously with the same machine. Sequencing and scheduling of equipment is most important in this type of system. Scrapers are being used at Texas Utilities' Thermo Mine (Hopkins County) and Amistad's Little Bull Creek Mine (Coleman County); all other mines in Texas use draglines.

Illegal Fraction

Mining will not be permitted in illegal fractions or "Land Unsuitable". The illegal fraction is that portion of productive acreage which is under populated areas, highways, pipelines, railroads, rivers, and reservoirs.

Market Factors

Currently, growth in electricity demand is the most important factor affecting the demand for lignite. Of major importance to potential industrial users is the price and availability of alternate fuels. As long as natural gas is available under long-term contract for less than the estimated cost of lignite from future mines, there will be little incentive to convert to lignite. Furthermore, capital and operating costs required to use lignite compared with those of alternative fuels affect all decisions on conversion. Lignite reserves are adequate to meet the projected needs [6 to 7 billion short tons (5.4 to 6.3 billion metric tons)] of the electric utility and industrial sectors into the next century. Most of the lignite will continue to be used to

generate electric power; however, lignite could be used in the future to produce synthetic fuels and chemicals.

*Reprinted by permission of Dr. William R. Kaiser, Bureau of Economic Geology, The University of Texas at Austin.

II. Additional Facts

A. The growth of Texas' coal industry is indicated by an increase in its national ranking from 18th in 1970 to 9th in 1980 and 1981.

B. In 1980, 830 million tons of coal were produced in the United States with Texas accounting for 30.2 million tons of this production. In 1981, Texas accounted for 32.8 million of the 820 million tons produced in the United States.

C. Texas is presently the No. 1 state in the nation in **lignite** production.

D. There are three operations in the State which are permitted for the extraction of subbituminous coal.

(1) Near surface (0 to 200 feet) resources of subbituminous coal in the State are estimated to be 790 million tons with the recoverable reserve component estimated at 330 million tons. The deep-basin resource is estimated at 4,700 million tons with a recoverable reserve of 2,350 million tons.**

(2) This resource has an energy value of approximately 9000 Btu/lb.

(3) Subbituminous deposits are located in the North-Central, Rio Grande, and Trans-Pecos Regions of the State.**

(4) This resource is primarily being used in cement factories and a small percentage is being exported.

E. Most lignite in Texas was deposited approximately 45 million years ago under differing depositional environments.

F. Proven and recoverable oil reserves in Texas are estimated at 7.6 billion barrels. Twenty-three billion tons of lignite are estimated to be within 200 ft. of the surface in Texas. This is equivalent in Btu production to over 50 billion barrels of oil.

G. Texas lignite exclusively powers the largest aluminum plant in the United States. The ALCOA Operation near Rockdale has the capacity to produce 310,000 tons of primary aluminum per year.

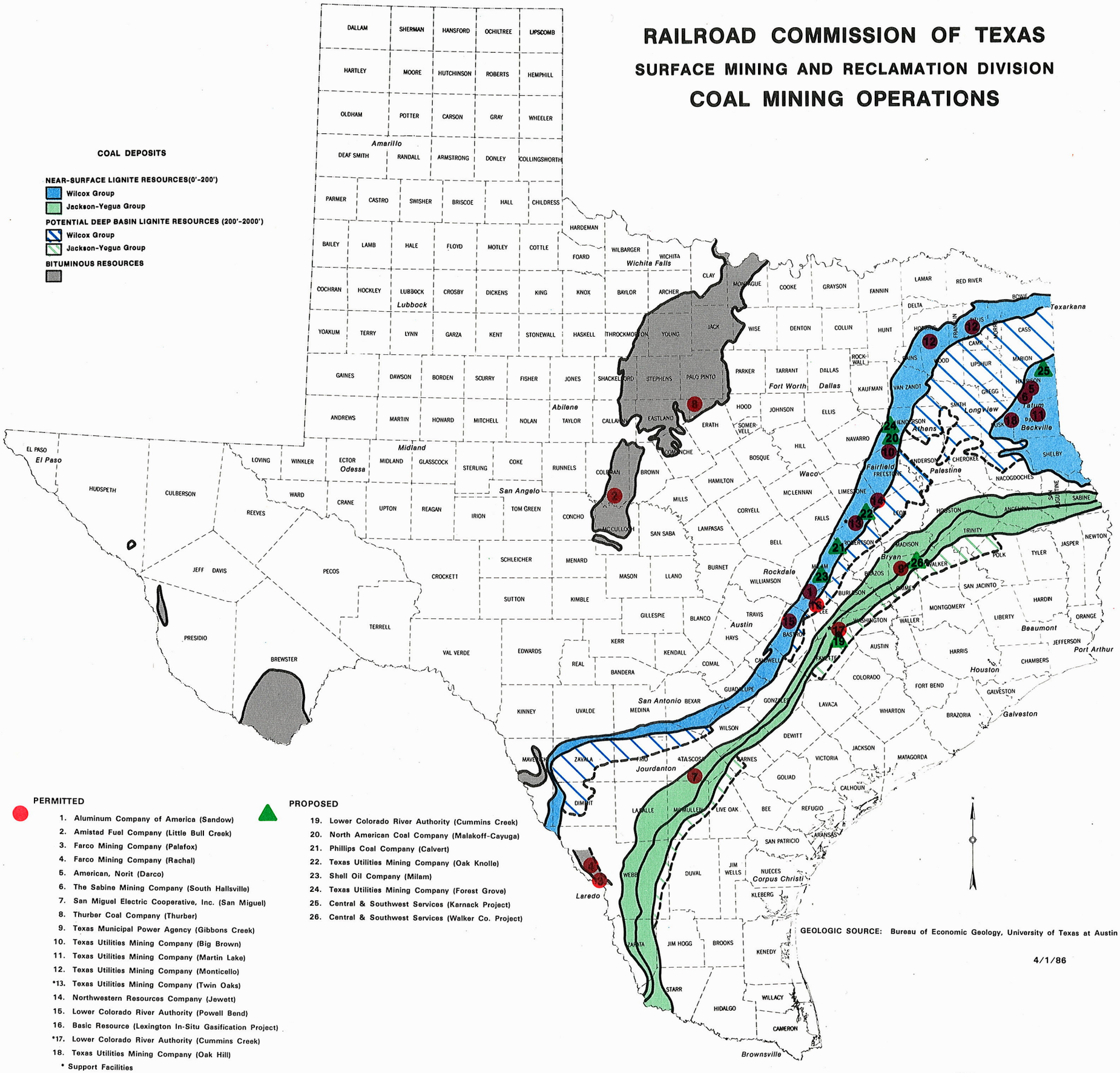
H. Texas utilities is the largest operation in the State. It presently operates three electrical power generation facilities (Martin Lake, Monticello, and Big Brown) and had a combined production of 27.9 million, 27 million, and 24.7 million tons in 1981, 1980, and 1979, respectively.

**Fisher, W. L. 1978. *Texas Energy Reserves and Resources.* Geological Circular 78-5. Bureau of Economic Geology, University of Texas at Austin. 30 pp.

RAILROAD COMMISSION OF TEXAS

SURFACE MINING AND RECLAMATION DIVISION

COAL MINING OPERATIONS



GEOLOGIC SOURCE: Bureau of Economic Geology, University of Texas at Austin

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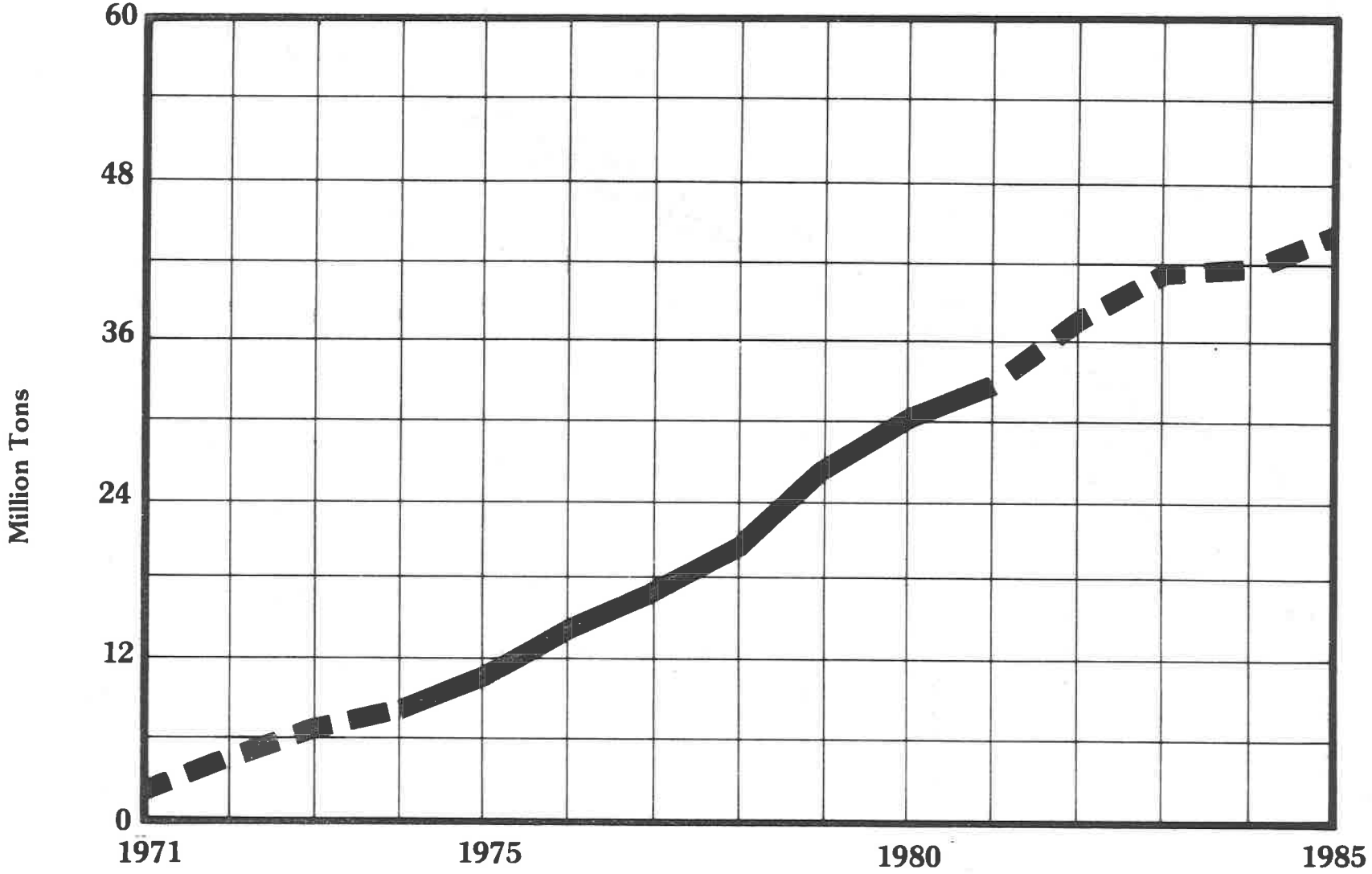
Railroad Commission of Texas

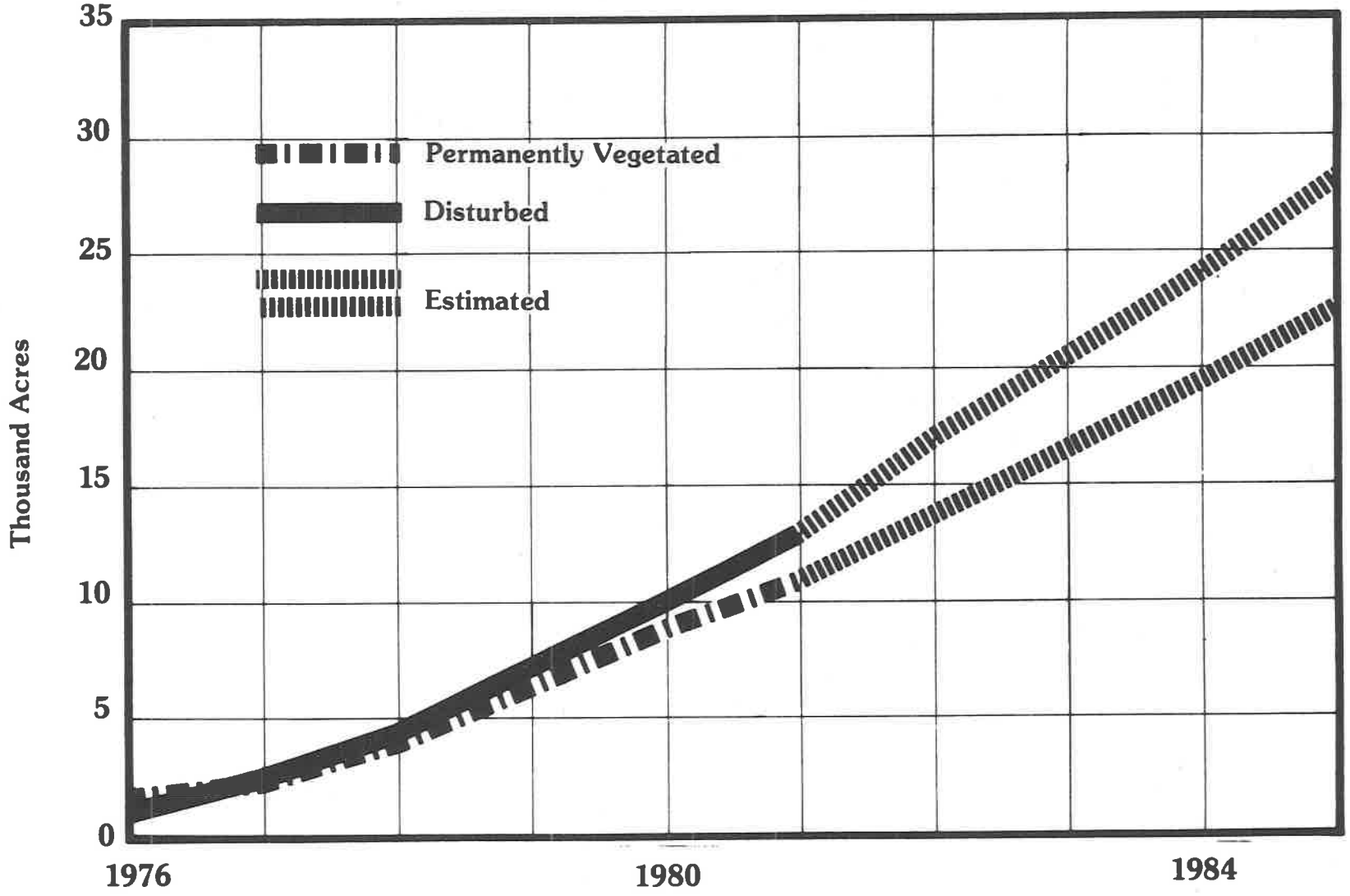
Texas Coal Production



Railroad Commission of Texas

Acreage Disturbed and Permanently Vegetated by Coal Mining

(Cumulative Total)



Coal Production for the State of Texas

Year	Amount (Tons)*	Year	Amount (Tons)*
late 1880's	<15,000	1930.....	750,000
1890.....	15,000	1935.....	722,000
1895.....	124,000	1940.....	606,000
1900.....	253,000	1945.....	80,000
1905.....	392,000	1950.....	18,000
1910.....	881,000	1960.....	2,000,000
1913.....	1,181,000	1970.....	2,250,000
1915.....	891,000	1971.....	2,200,000
1918.....	1,187,000	1972.....	4,545,000
1920.....	1,070,000	1973.....	6,944,000
1925.....	826,000	1974.....	8,000,000
1927.....	1,169,000	1975.....	11,002,000

*Estimated

Year	County	Type of Coal	Type of Operation		Amount (Tons)
1976	Milam	lignite	surface		2,065,100
	Freestone	lignite	surface		5,300,672
	Harrison	lignite	surface		282,671
	Panola	lignite	surface		40,202
	Titus & Hopkins (combined)	lignite	surface		6,602,335
				TOTAL	14,290,980
1977	Milam	lignite	surface		1,979,691
	Freestone	lignite	surface		5,288,041
	Harrison	lignite	surface		254,709
	Panola	lignite	surface		3,147,693
	Titus & Hopkins (combined)	lignite	surface		6,229,307
				TOTAL	16,899,441
1978	Milam	lignite	surface		2,008,198
	Freestone	lignite	surface		5,298,285
	Harrison	lignite	surface		271,381
	Panola	lignite	surface		5,971,750
	Titus	lignite	surface		5,767,561
	Hopkins	lignite	surface		1,198,907
	Anderson	lignite	underground (gasif)		2,353
				TOTAL	20,518,435

Year	County	Type of Coal	Type of Operation	Amount (Tons)
1979	Milam	lignite	surface	1,814,739
	Freestone	lignite	surface	5,165,452
	Harrison	lignite	surface	353,734
	Panola	lignite	surface	10,319,707
	Titus	lignite	surface	7,500,000
	Hopkins	lignite	surface	1,700,000
	Anderson	lignite	underground (gasif)	518
	Erath	bituminous	surface	13,046
	Coleman	bituminous	surface	46
	Webb	bituminous	surface	76,676
			TOTAL	26,943,918
1980	Milam	lignite	surface	2,137,776
	Freestone	lignite	surface	5,498,170
	Harrison	lignite	surface	299,863
	Panola	lignite	surface	10,823,664
	Titus	lignite	surface	8,556,278
	Hopkins	lignite	surface	2,112,000
	Atascosa	lignite	surface	478,428
	Erath	bituminous	surface	77,437
	Coleman	bituminous	surface	35,000
	Webb	bituminous	surface	159,604
			TOTAL	30,178,220
1981	Milam	lignite	surface	3,414,742
	Freestone	lignite	surface	5,908,910
	Harrison	lignite	surface	286,671
	Panola	lignite	surface	9,922,390
	Titus	lignite	surface	9,928,639
	Hopkins	lignite	surface	2,123,700
	Atascosa	lignite	surface	717,587
	Erath	bituminous	surface	108,544
	Coleman	bituminous	surface	76,119
	Webb	bituminous	surface	276,633
			TOTAL	32,763,935

Top Ten Coal Producing States

1981

	(Millions of Tons)
1. Kentucky	156.0
2. West Virginia	112.8
3. Wyoming	102.7
4. Pennsylvania	78.1
5. Illinois	51.7
6. Virginia	42.0
7. Ohio	37.4
8. Montana	33.4
9. Texas	32.8
10. Indiana	29.4

Source: Energy Information Administration — Department of Energy

1980

	(Millions of Tons)
1. Kentucky	149.2
2. West Virginia	120.0
3. Wyoming	94.0
4. Pennsylvania	86.2
5. Illinois	63.2
6. Virginia	49.0
7. Ohio	39.5
8. Montana	31.1
9. Texas	30.2
10. Indiana	29.9

Source: Energy Information Administration — Department of Energy

1979

	(Millions of Tons)
1. Kentucky	149.8
2. West Virginia	112.8
3. Pennsylvania	89.2
4. Wyoming	71.8
5. Illinois	59.5
6. Ohio	43.5
7. Virginia	37.0
8. Montana	32.4
9. Indiana	27.5
10. Texas	26.9

Source: *Keystone News Bulletin*

Energy Price Comparison

(Based on 1979 dollars)

Dollar Cost per Million Btu

Year	Natural Gas	Domestic Crude	Imported Crude	Texas Coal	Imported Bituminous Coal
1977	1.01	1.75	2.89	.41	1.54
1978	1.04	1.72	2.69	.45	1.63
1979	1.06	2.28	4.03	.68	1.79
1980	1.09	3.29	5.18	.72	1.85
1981	1.24	4.62	5.25	.77	1.91
1982	1.37	5.52	5.52	.82	1.97
1983	1.56	5.69	5.69	.87	2.04
1984	1.79	5.84	5.84	.92	2.10
1985	2.09	6.01	6.01	.98	2.17
1990	4.76	7.08	7.08	1.32	2.54
1995	5.99	8.50	8.50	1.79	2.97
2000	7.26	10.42	10.43	2.42	3.48

FROM: *Texas Energy Outlook; 1980 - 2000.* June, 1980. Texas Energy and Natural Resources Advisory Council. 142 pp.

1981 Fuel Cost for Electrical Utilities in Texas

(Average Cost per Million Btu)

	Lignite	Western Coal	Oil	Gas
January	$ .58	$ 1.87	$ 5.04	$ 2.53
February	.72	1.89	5.84	2.72
March	.75	1.90	5.42	2.66
April	.70	1.90	5.57	2.66
May	.69	1.96	5.97	2.71
June	.87	1.99	5.84	2.80
July	.90	2.01	5.53	2.83
August	.92	2.02	5.18	2.88
September	.93	2.04	6.26	2.95
October	.79	2.09	5.99	3.05
November	.85	2.14	5.61	3.05
December	.91	2.13	5.92	3.17
TOTAL	$ 9.61	$23.94	$68.17	$34.01
AVERAGE COST FOR YEAR	**$ 0.80**	**$ 2.00**	**$ 5.68**	**$ 2.83**
High	$ 0.93	$ 2.14	$ 6.26	$ 3.17
Low	$ 0.58	$ 1.87	$ 5.04	$ 2.53

Source: *Cost and Quality of Fuels for Electric Utility Plants* — (Monthly Reports). U.S. Department of Energy, Energy Information Administration, Assistant Administrator for Energy Data Operations. DOE/EIA-0075.

1981 - Cost of Coal for Electrical Utilities in Texas

(Average Cost per Ton)

	Lignite	Western Coal
January	$ 8.06	$ 34.15
February	10.02	34.65
March	10.33	34.87
April	9.26	34.80
May	8.78	35.85
June	10.78	36.61
July	10.94	37.06
August	12.18	37.23
September	12.23	37.08
October	10.37	38.08
November	11.00	38.55
December	12.04	38.27
TOTAL	$125.99	$437.20
AVERAGE COST FOR YEAR	**$ 10.50**	**$ 36.43**
High	$ 12.23	$ 38.55
Low	$ 8.06	$ 34.15

Source: *Cost and Quality of Fuels for Electric Utility Plants* — (Monthly Reports). U.S. Department of Energy, Energy Information Administration, Assistant Administrator for Energy Data Operations. DOE/EIA-0075.

Power Plants fired by Texas Coal

(Current As Of August 9, 1982)

Year	Plant Name	*Operator	County	MW
1980 and Earlier	Big Brown # 1	TU	Freestone	575
	Big Brown # 2	TU	Freestone	575
	Martin Lake # 1	TU	Rusk	750
	Martin Lake # 2	TU	Rusk	750
	Martin Lake # 3	TU	Rusk	750
	Monticello # 1	TU	Titus	575
	Monticello # 2	TU	Titus	575
	Monticello # 3	TU	Titus	750
	Sandow # 1	ALCOA	Milam	120
	Sandow # 2	ALCOA	Milam	120
	Sandow # 3	ALCOA	Milam	120
1981	Sandow # 4	TU	Milam	545
	San Miguel # 1	SMEC	Atascosa	400
1982	————————			
1983	Gibbons Creek # 1	TMPA	Grimes	400
1984	————————			
1985	Pirkey # 1	C&SW	Harrison	640
1986	Limestone # 1	HLP	Limestone	700
	Twin Oak # 1	TU	Robertson	750
1987	Limestone # 2	HLP	Limestone	700
1988	Twin Oak # 2	TU	Robertson	750
	Malakoff # 1	HLP	Henderson	600
	Seymour # 3	LCRA	Fayette	400
1989	Malakoff # 2	HLP	Henderson	600
	Forest Grove # 1	TU	Henderson	750
	Martin Lake # 4	TU	Rusk	750
1990	Undetermined	SAPS	Unsited	500

Year	Plant Name	*Operator	County	MW
1991	————————			
1992	Karnack # 1	C&SW	Harrison	640
Mid 1990's	Seymour # 4	LCRA	Fayette	400
	Walker County # 1	C&SW	Walker	640
	Lovelady # 1	GSU	Houston	300

*See Enclosed Operator Abbreviations

Imported Coal Fired Power Plants

(Current As Of August 9, 1982)

Year	Plant Name	*Operator	County	MW
1980 and Earlier	Seymour # 1	LCRA	Fayette	550
	Seymour # 2	LCRA	Fayette	550
	Coleto Creek # 1	CPL	Goliad	550
	W. A. Parish # 5	HLP	Fort Bend	660
	W. A. Parish # 6	HLP	Fort Bend	660
	W. A. Parish # 7	HLP	Fort Bend	570
	J. T. Deely # 1	SAPS	Bexar	418
	J. T. Dely # 2	SAPS	Bexar	418
	Welsh # 1	SWEPCO	Titus	528
	Welsh # 2	SWEPCO	Titus	528
	Harrington # 1	SWPSC	Potter	336
	Harrington # 2	SWPSC	Potter	336
	Harrington # 3	SWPSC	Potter	338
	Celanese # 2	SWPSC	Hutchinson	30
1981	————————			
1982	Welsh # 3	SWEPCO	Titus	528
	Tolk Station # 1	SWPSC	Lamb	528
1983	W. A. Parrish # 8	HLP	Fort Bend	540
1984	————————			
1985	Tolk Station # 2	SWPSC	Lamb	528
1986	————————			
1987	Oklaunion # 1	C&SW	Wilbarger	640
1988	Roberts # 1	SWPSC	Roberts	600
1989	————————			
Mid 1990's	Diversion/Kemp	C&SW	Unsited	640
	Roberts # 2	SWPSC	Roberts	600

*See Enclosed Operator Abbreviations

Operator Abbreviations

ALCOA	Aluminum Company of America
C&SW	Central and South West Services, Inc.
CPL	Central Power & Light Company
GSU	Gulf States Utilities Company
HLP	Houston Lighting & Power Company
LCRA	Lower Colorado River Authority
SAPS	City of San Antonio Public Service
SMEC	San Miguel Electric Cooperative
SWEPCO	Southwestern Electric Power Company
SWPSC	Southwestern Public Service Company
TMPA	Texas Municipal Power Agency
TU	Texas Utilities

Permitted Coal/Lignite Operations

Permit No. 1

Aluminum Company of America (ALCOA) (512) 446-5811
Mr. James E. Lanier
Southwest Area Power Manager
P.O. Box 472
Rockdale, Texas 76567

SANDOW MINE located in Milam County, Texas

Permit No. 2

ICI Americas, Inc. (214) 938-9211
Mr. Kelly Baird
P.O. Box 790
Marshall, Texas 75670

DARCO MINE located in Harrison County, Texas

Permit No. 3

Texas Utilities Generating Company (214) 653-4600
Mr. John Janak, Vice President
2001 Bryan Tower
Dallas, Texas 75201

BIG BROWN MINE located in Freestone County, Texas

Permit No. 4

Texas Utilities Generating Company (214) 653-4600
Mr. John Janak, Vice President
2001 Bryan Tower
Dallas, Texas 75201

MARTIN LAKE MINE located in Panola County, Texas

Permit No. 5

Texas Utilities Generating Company (214) 653-4600
Mr. John Janak, Vice President
2001 Bryan Tower
Dallas, Texas 75201

MONTICELLO (WINFIELD & THERMO) MINES located in Titus County and Hopkins County, Texas

Permit No. 6

Texas Municipal Power Agency (817) 461-4400
Mr. Dean S. Mathews
Manager, Environmental Services
600 Arlington Downs Tower
Arlington, Texas 76011

GIBBONS CREEK MINE located in Grimes County, Texas

Permit No. 7 (issuance pending)

Amistad Fuel Company (512) 655-2424
Mr. Kimball McCloud
P.O. Box 34210
San Antonio, Texas 78233

LITTLE BULL CREEK MINE located in Coleman County, Texas

Permit No. 8

FARCO Mining Company of Texas (512) 727-2354
Mr. Jay Potucek
P.O. Box 2607
Laredo, Texas 78041

PALAFOX MINE located in Webb County, Texas

Permit No. 9

FARCO Mining Company of Texas (512) 727-2354
Mr. Jay Potucek
P.O. Box 2607
Laredo, Texas 78041

RACHAL MINE located in Webb County, Texas

Permit No. 10

Thurber Coal Company (214) 637-3100
Mr. Vernon Hulme
8100 Carpenter Freeway
Dallas, Texas 75247

THURBER MINE located in Erath County, Texas

Permit No. 11

San Miguel Electric Power Cooperative (512) 769-3595
Mr. Marshall Darby
P. O. Box 280
Jourdanton, Texas 78026

SAN MIGUEL PROJECT located in Atascosa County, Texas

Permit No. 13

Sabine Mining Company (214) 669-3001
Mr. Carl Venzke, Director,
Environmental Services
Office ALPHA
13140 Coit Road, Suite 400
Dallas, Texas 75240

SOUTH HALLSVILLE No. 1 located in Harrison County, Texas

Permit No. 14 (Dragline Erection Pad Only)

Texas Utilities Generating Company (214) 653-4600
Mr. John Janak, Vice President
2001 Bryan Tower
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Production/Acreage Permits

(As of August 12, 1982)

Mineral	Company (Operation)	Tons/yr.	Total Acres Permitted	Permit Approved	Permit Issued
Lignite	ALCOA (Sandow Mine)				
	Current	2,000,000	3,609.00	Y	Y
	*Resubmission	4,900,000	8,539.00	Y	Y
Lignite	ICI Americas, Inc. (Darco)				
	Current	400,000	661.00	Y	Y
	*Resubmission	400,000	665.00	Y	Y
Lignite	TUGCO (Big Brown)				
	Current	5,500,000	6.280.70	Y	Y
	*Resubmission	6,000,000	10,365.70	Y	Y
Lignite	TUGCO (MARTIN LAKE)				
	Current	5,600,000	11,707.80	Y	Y
	*Resubmission	12,000,000	22,752.80	Y	Y
Lignite	TUGCO (Monticello)				
	Current	11,000,000	15,893.00	Y	Y
	*Resubmission	11,000,000	15,893.00	Y	Y
Lignite	Texas Municipal Power Agency (TMPA) (Gibbons Creek)				
	Current	3,000,000	6,429.00	Y	Y
	*Resubmission	3,000,000	6,369.00	Y	Y
Bituminous	Amistad Fuel Company (Little Bull Creek)				
	Current	280,000	1,126.83	Y	Y
	*Resubmission	200,000	1,100.00	N	N
Bituminous	FARCO Mining Co. (Palafox)				
	Current		2,034.00	Y	Y
	*Resbumission	408,250	2,034.00	Y	Y

*Includes those acres that are currently permitted

Mineral	Company (Operation)	Tons/yr.	Total Acres Permitted	Permit Approved	Permit Issued
Bituminous	FARCO Mining Co. (Rachal)				
	Current		1,540.87	Y	Y
	*Resubmission	185,450	1,540.87	Y	Y
Bituminous	Thurber Coal Co. (Thurber)				
	Current	422,000	3,328.00	Y	Y
	*Resubmission	422,000	3,328.00	Y	Y
Lignite	San Miguel Elec. Power Coop. (San Miguel)				
	Current	4,400,000	6,818.00	Y	Y
	*Resubmission	3,000,000	7,025.00	Y	Y
Lignite	Sabine Mining Co. (South Hallsville)				
	Original Submission	2,800,000	4,613.00	Y	Y
Lignite	Northwestern Resources Co. (Jewett)				
	Original Submission	7,200,000	5,582.00	N	N
Lignite	Lower Colorado River Authority (Powell Bend)				
	Original Submission	200,000	1,000.00	N	N

*Includes those acres that are currently permitted

All coal/lignite companies have been allowed to continue mining under current provisions; however, they must resubmit an application and have a new permit issued due to the new Coal Regulations being adopted on May 1, 1980.

Coal/lignite companies that **only** show current approval and issue of a permit have not resubmitted an application under the new regulations and/or have not obtained approval and issuance of the permit.

Railroad Commission of Texas
Coal Surface Mining Operations
Annual Progress Report
1981

Operator and Mine	Land Disturbed (acres)	Land Leveled (acres)	Land Vegetated Temporary* (acres)	Land Vegetated Permanent** (acres)	Coal Production (tons)
ALCOA					
Sandow	321.4	123.4	77.0	152.0	3,414,742
AMISTAD FUEL CO.					
Little Bull Creek	52.0	20.0	22.0	20.0	76,119
FARCO MINING CO.					
Palafox	199.0	78.0	-0-	77.0	276,633
Rachal	-0-	-0-	-0-	-0-	-0-
ICI AMERICAS, INC.					
Darco	62.0	20.0	20.0	-0-	286,671
SAN MIGUEL ELECTRIC COOPERATIVE, INC.					
San Miguel Project	108.3	-0-	82.0	-0-	717,587
THURBER COAL CO.					
Thurber	61.0	37.0	-0-	30	108,544
TEXAS MUNICIPAL POWER AGENCY					
Gibbons Creek	597.0	-0-	-0-	92.0	-0-
TEXAS UTILITIES GENERATING CO.					
Big Brown	2,037.0	505.1	474.8	539.1	5,908,910
Martin Lake	1,736.0	616.0	501.0	757.0	9,922,390
Monticello	2,368.0	777.0	492.0	385.0	12,052,339
TOTAL	**7,541.7**	**2,176.5**	**1,668.8**	**2,052.1**	**32,763,935**

*Acreage which has been planted with temporary vegetation (example: Ryegrass) to stabilize the soil until it can be utilized for its designated purpose or until the season is suitable for the planting of permanent vegetation.
**Acreage which has been planted with a perennial vegetative cover to achieve final reclamation.

Railroad Commission of Texas
Coal Surface Mining Operations
Annual Progress Report
1980

Operator and Mine	Land Disturbed (acres)	Land Leveled (acres)	Land Vegetated Temporary* (acres)	Land Vegetated Permanent** (acres)	Coal Production (tons)
ALCOA					
Sandow	140.0	366.0	209.0	80.0	2,137,776.00
AMISTAD FUEL CO.					
Little Bull Creek	5.0	15.0	3.0	3.0	35,000.00
FARCO MINING CO.					
Palafox, Rachal	60.5	39.2	-0-	83.5	159,604.21
ICI AMERICAS, INC.					
Darco	31.1	21.6	8.8	13.1	299,863.00
SAN MIGUEL ELECTRIC COOPERATIVE, INC.					
San Miguel Project	240.7	-0-	182.0	-0-	478,428.00
TEXAS INDUSTRIES, INC.					
Thurber	40.0	30.0	15.0	-0-	77,437.00
TEXAS MUNICIPAL POWER AGENCY					
Gibbons Creek	76.0	-0-	61.0	-0-	-0-
TEXAS UTILITIES GENERATING CO.					
Big Brown	567.6	349.9	318.0	889.5	5,498,170.00
Martin Lake	761.0	817.0	347.0	912.0	10,823,664.00
Monticello	546.0	501.0	443.0	540.0	10,668,278.00
TOTAL	**2,467.9**	**2,139.7**	**1,586.8**	**2,521.1**	**30,178,220.21**

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**Acreage which has been planted with a perennial vegetative cover to achieve final reclamation.

Railroad Commission of Texas
Coal Surface Mining Operations
Annual Progress Report
1979

Operator and Mine	Land Disturbed (acres)	Land Leveled (acres)	Land Vegetated Temporary* (acres)	Land Vegetated Permanent** (acres)	Coal Production (tons)
ALCOA					
Sandow	102.7	58.4	-0-	80.0	1,813,739.00
AMISTAD FUEL CO.					
Little Bull Creek	6.0	3.0	-0-	-0-	46.00
BASIC RESOURCES, INC.					
(In Situ Gasification)	-0-	-0-	-0-	3.8	518.00
FARCO MINING CO.					
Palafox-Rachal	62.4	22.1	-0-	41.6	76,676.73
ICI AMERICAS, INC.					
Darco	27.3	10.8	16.2	2.5	353,734.00
SAN MIGUEL ELECTRIC					
San Miguel Project	484.8	-0-	28.8	83.0	-0-
TEXAS UTILITIES GENERATING CO.					
Big Brown	540.6	682.5	611.0	726.0	5,165,452.00
Martin Lake	941.0	754.0	410.0	684.0	10,319,707.00
Monticello	598.0	410.0	359.0	528.0	9,230,697.00
TOTAL	**2,762.8**	**1,940.8**	**1,425.0**	**2,197.9**	**26,960,569.73**

*Acreage which has been planted with temporary vegetation (example: Ryegrass) to stabilize the soil until it can be utilized for its designated purpose or until the season is suitable for the planting of permanent vegetation.
**Acreage which has been planted with a perennial vegetative cover to achieve final reclamation.

Railroad Commission of Texas
Coal Surface Mining Operations
Annual Progress Report
1978

Operator and Mine	Land Disturbed (acres)	Land Leveled (acres)	Land Vegetated Temporary* (acres)	Land Vegetated Permanent** (acres)	Coal Production (tons)
ALCOA					
Sandow	100.30	106.40	90.00	941.90	2,008,198
BASIC RESOURCES, INC.					
(In Situ Gasification)	8.76	N/A	N/A	N/A	2,353
ICI AMERICAS, INC.					
Darco	21.40	12.10	14.60	11.00	271,381
SAN MIGUEL ELECTRIC COOPERATIVE, INC.					
San Miguel	151.00	-0-	-0-	-0-	0
TEXAS UTILITIES					
Big Brown	610.64	887.40	1,523.00	550.00	5,298,285
Monticello	626.00	695.00	787.00	345.00	6,966,468
Martin Lake	352.00	127.00	25.00	102.00	5,971,750
TOTAL	**1,870.10**	**1,827.90**	**2,439.60**	**1,949.90**	**20,518,435**

*Acreage which has been planted with temporary vegetation (example: Ryegrass) to stabilize the soil until it can be utilized for its designated purpose or until the season is suitable for the planting of permanent vegetation.
**Acreage which has been planted with a perennial vegetative cover to achieve final reclamation.

Railroad Commission of Texas
Coal Surface Mining Operations
Annual Progress Report
1976

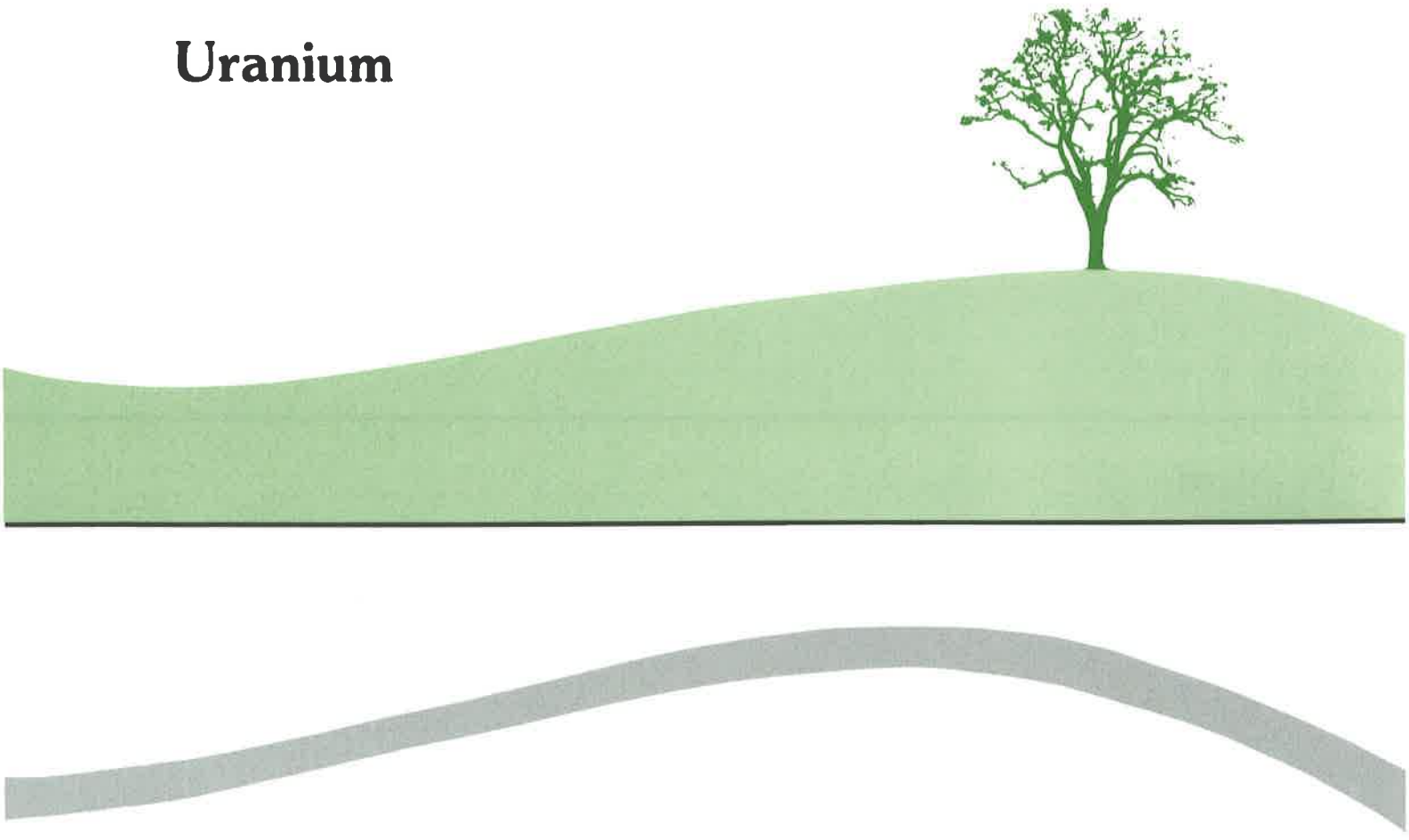
Operator and Mine	Land Disturbed (acres)	Land Leveled (acres)	Land Vegetated Temporary* (acres)	Land Vegetated Permanent** (acres)	Coal Production (tons)
ALCOA					
Sandow	101.3	58	-0-	-0-	2,065,100
ICI AMERICAS, INC.					
Darco	30.3	319	133	92.8	282,671
TEXAS UTILITIES GENERATING CO.					
Big Brown	632.0	1,045	794	1,317.0	5,300,672
Martin Lake	17.0	-0-	-0-	-0-	40,202
Monticello	393.0	273	65	241.0	6,602,335
TOTAL	**1,173.6**	**1,695**	**992**	**1,650.8**	**14,290,980**

1977

Operator and Mine	Land Disturbed (acres)	Land Leveled (acres)	Land Vegetated Temporary* (acres)	Land Vegetated Permanent** (acres)	Coal Production (tons)
ALCOA					
Sandow	111.4	101.0	264.0	-0-	1,979,691
ICI AMERICAS, INC.					
Darco	25.4	39.8	38.2	7.6	254,709
TEXAS UTILITIES GENERATING CO.					
Big Brown	509.0	866.0	200.0	330.0	5,288,041
Martin	345.0	173.0	150.0	53.0	3,147,693
Monticello	472.0	202.0	328.0	181.0	6,229,307
TOTAL	**1,462.8**	**1,381.8**	**980.2**	**571.6**	**16,899,441**

*Acreage which has been planted with temporary vegetation (example: Ryegrass) to stabilize the soil until it can be utilized for its designated purpose or until the season is suitable for the planting of permanent vegetation.
**Acreage which has been planted with a perennial vegetative cover to achieve final reclamation.

Uranium



Uranium Mining in Texas

Uranium was discovered in Texas in 1954. An airplane conducting a radiation survey to define radiometric anomalies associated with petroleum fields noticed an anomaly in Northwest Karnes County that proved to be associated with Uranium deposits. Mining commenced in 1959 and the first mill was constructed by Susquehanna Western in 1960 near the original discovery in Karnes County. In 1963 Susquehanna established a second mill in Live Oak County near Ray Point and both mills closed in 1972. At that time, the Conquista Project, a joint venture of Pioneer Nuclear and Continental Oil Company, established a mill near Deweesville in Karnes County.

Prior to the enactment of the Surface Mining and Reclamation Act in June of 1975, twenty-eight mining areas were developed in South Texas. Subsequent to the adoption of the Surface Mining and Reclamation Act, the Railroad Commission of Texas assumed the regulatory responsibility for the surface mining of uranium in the State of Texas. All uranium mining activity is still located in South Texas and the number of permitted mine sites has now grown to a total of forty-five.

Recent months have seen a dramatic downturn in the demand and, consequently, the price of uranium. The cost involved in extracting and milling the ore with the subsequent reclamation of the mine now exceeds the reduced price of uranium oxide (U_3O_8), which is the end-product of the South Texas operations. This situation has made a substantial impact on national as well as Texas production.

Texas presently ranks third in the nation in known reserves of uranium ore and, in 1980 and 1981, ranked third in the nation for production of U_3O_8. Texas was first in the nation for exploration of uranium in 1981. (Source: Department of Energy)

Uranium ores will vary in "grade" even though the deposits may be only a short distance from each other. A higher grade ore will produce more uranium oxide than a lower grade ore. On the average, it takes one ton of ore to produce one to two pounds of oxide.

Four companies are permitted to surface mine uranium ore in Texas. The Conquista Project presently has permits for thirty-three mine sites plus their mill site and a total permit acreage of 13,963. This company has milled all ore which has had the overburden removed. All mining operations have ceased and the mines are either being reclaimed or mothballed. They have obtained permits for seven sites in which mining has not commenced and will remain untouched until it is economically feasible to produce the ore. The mill, which has a maximum capacity of 3000 tons of ore per day, has been mothballed until production is once again economically feasible.

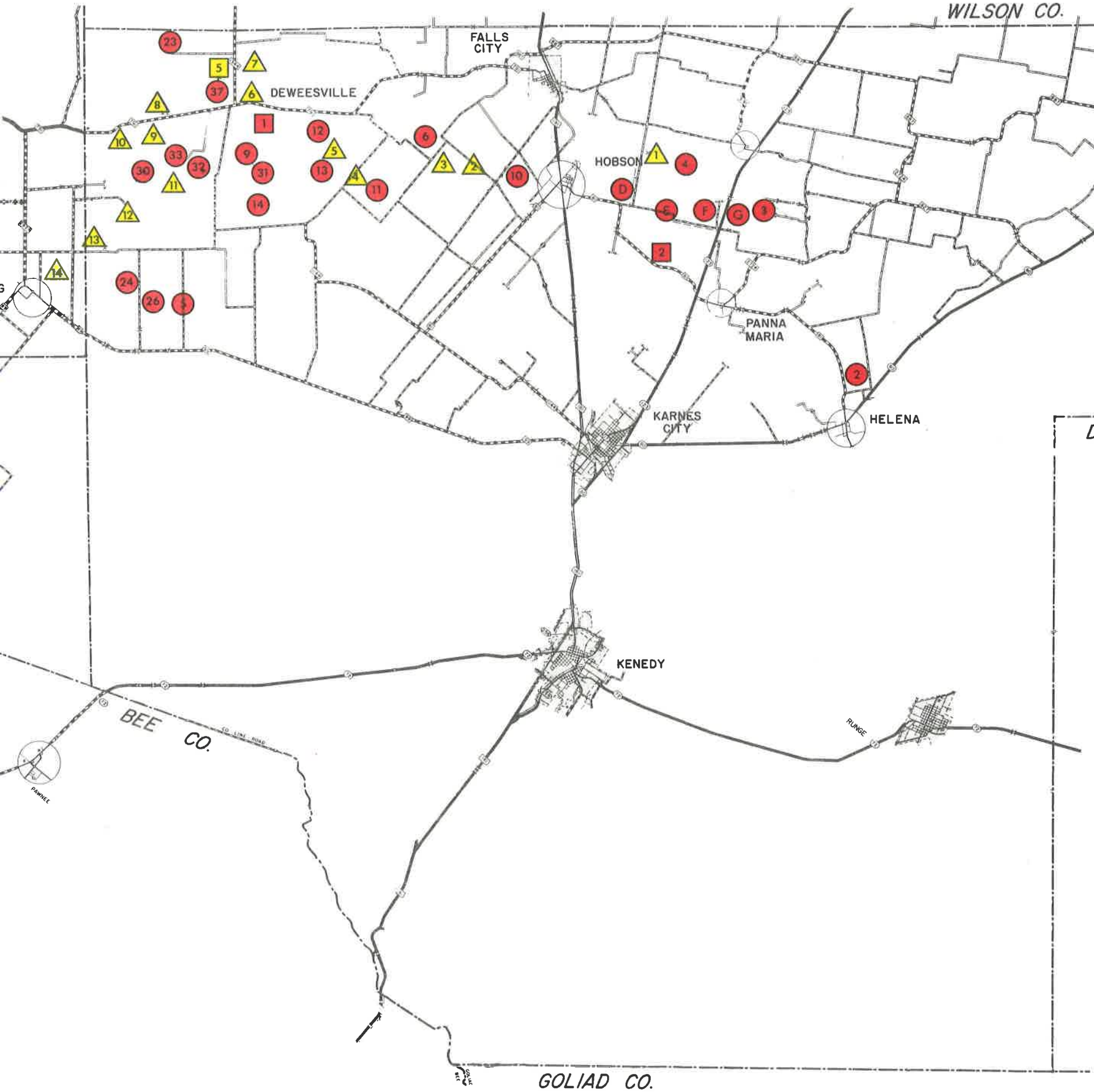
Chevron Resources Company has two projects permitted which total 5,535 acres and includes six sites. The Panna Maria Project (2,943 acres) is located near Panna Maria in Karnes County and the Jack Pump Project (2,592 acres) is located along the county line between Karnes and Gonzales Counties. The Chevron mill is located in the Panna Maria Project area and has a design capacity of approximately 3,000 tons of ore per day.

Exxon Minerals Company has two leases permitted near Ray Point in Live Oak County which total 2,514 acres. The mining of one site has been completed and is in the early stages of reclamation. The completion of mining activity on three remaining sites was accelerated because the milling of the ore was on a contractual basis with the Conquista Mill. These sites are now being reclaimed.

The Anaconda Minerals Company has permitted 8,909 acres in McMullen County. The plan of operation by this company provides for at least one large pit and an alkaline leach-type mill. An exploration pit has been dug on the lease area, but no other activity has been conducted.

Since the discovery of uranium in South Texas, production of the mineral has continued to flourish and increase. This increased production has brought about an economic boost to the South Texas region as well as the state.

The price of U_3O_8 attained a peak of $43 per pound in the spring of 1979 and then began a steady decline. Three years later, the price has apparently stabilized at $20.50 per pound which is far below the break-even point for the mining of this mineral. Along with the decline in the price for this product has come a decrease in the number of persons employed by the companies, the decline has also had an adverse effect upon the tax base of the communities in the uranium mining region of South Texas.



TEXAS SURFACE URANIUM MINES & MILLS

EXPLANATION

PERMITTED MINES

CONQUISTA PROJECT

1. THOMAS-KNANDEL-DYBOWSKI
2. WINERICH
3. KOTZUR
4. FORTH WORTH NATIONAL BANK
5. ROSENBROCK-CARMODY
6. MOCZYGEMBA
7. HURT
8. HOUSE-SEALE-TAYLOR
9. ZAMZOW-BEICKER
10. LABUS-HOFFMAN
11. FRANKLIN-SWIERC
12. NIESCHWIETZ
13. DICKSON-PAWELEK
14. GARCIA
15. KORTH-HARTMAN-FINCH-OTTON
16. STEINMANN-LATTA-SWANSON-HAASE
17. SMITH
18. GRIFFIN
19. DROPPED
20. DROPPED
21. HOUSE
22. DROPPED
23. KORZEKWA-NIESCHWEITZ
24. W. DZIUK
25. BANDUCH
26. DZIUK-LYSSY
27. DOBIE
28. CHAPMAN
29. DROPPED
30. WEDDINGTON
31. SICKENIUS
32. PAWELEK-LYSSY-LAUW
33. (BOSO) PAWELEK-LYSSY-LAUW
    BUTLER-GABRYSCH-MAY
34. MARTIN
35. TOM-RETZLOF
36. DROPPED
37. NUHN-KORZEKWA

CHEVRON-JACK PUMP PROJECT

A. DRAGON-JANYSEK
B. GRIFFIN
C. BIASENKE

CHEVRON-PANNA MARIA PROJECT

D. LOBUS
E. WEST PIT
F. SWIENTEK
G. EAST PIT

EXXON

H. FELDER

ANACONDA

I. RHODES RANCH PROJECT

NON-PERMITTED MINES
(mined prior to Uranium Act)

1. F. BRYSH
2. STOELTJE
3. MANKA
4. BROWN
5. I. M. BRYSH
6. SEARCY
7. LUCKETT
8. BORGMAN
9. J. M. HACKNEY
10. BOSO
11. GALEN
12. BUTLER
13. KELLNER
14. PFEIL-WRIGHT-McCRADY-WEDDINGTON
15. ESSE
16. RYAN
17. MABEL-SUPERIOR
18. KOPPLIN
19. SMITH

PERMITTED MILLS

1. CONQUISTA
2. CHEVRON
3. ANACONDA (proposed for McMullen County)

NON-PERMITTED MILLS
(prior to Uranium Act)

4. SUSQUEHANNA-RAY POINT
5. SUSQUEHANNA-DEWEESVILLE

SCALE
0 1 2 3 4 MILES

Railroad Commission of Texas
Surface Mining and Reclamation Division

McMULLEN CO. (INSERT)

McMULLEN CO.

LIVE OAK CO.

McMULLEN CO.

DUVAL CO.

McMULLEN CO.

ATASCOSA CO.

LIVE OAK CO.

BEE CO.

DEWEESVILLE

FASHING

PEGGY

WHITSETT

CALLIHAM

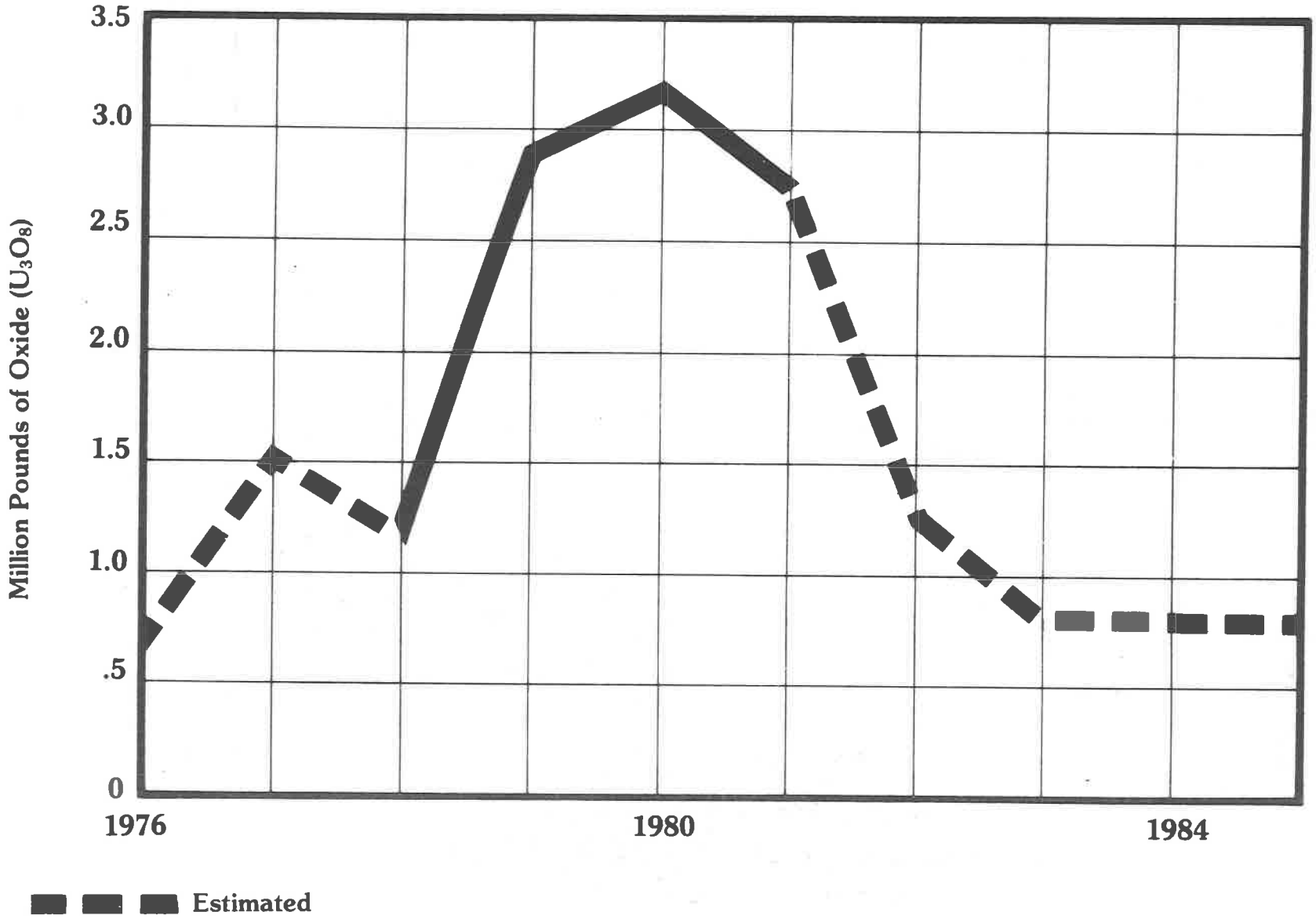
THREE RIVERS

RAY POINT

PAWNEE

Railroad Commission of Texas

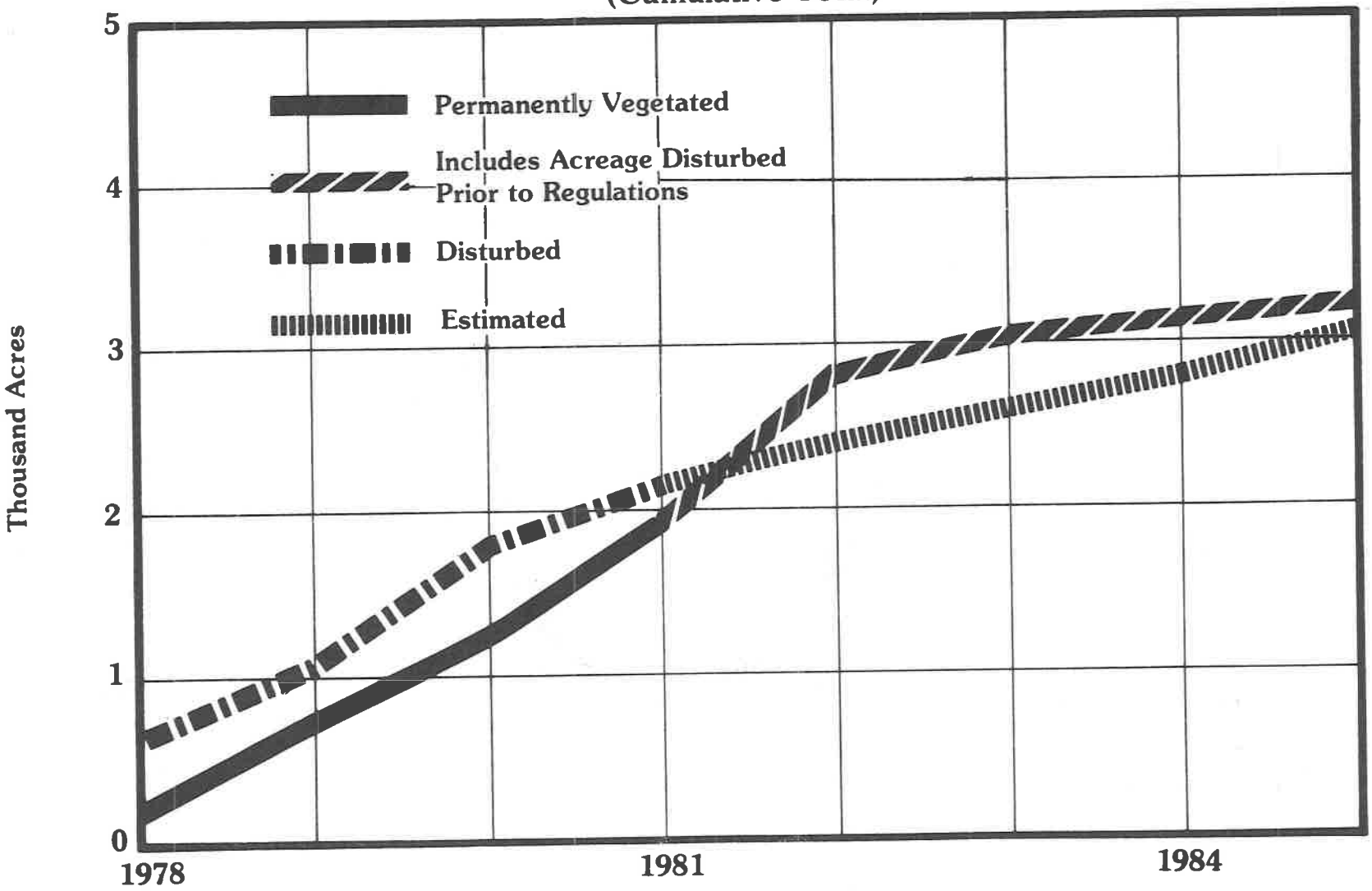
Texas Uranium Production



Railroad Commission of Texas

Acreage Disturbed and Permanently Vegetated by Uranium Mining

(Cumulative Total)



Top Producers of Uranium Oxide (U_3O_8) In the United States

1981

State	Thousand Short Tons (U_3O_8)
1. New Mexico	6.6
2. Wyoming	4.4
3. Texas	3.2
4. Utah	**
5. Colorado	**
6. Florida	**
7. Washington	**
8. Arizona	**

* Totals include all types of mine producton (i.e.: surface, underground and in situ).

** Combined total for these states is 5,400 short tons.

SOURCE: Department of Energy

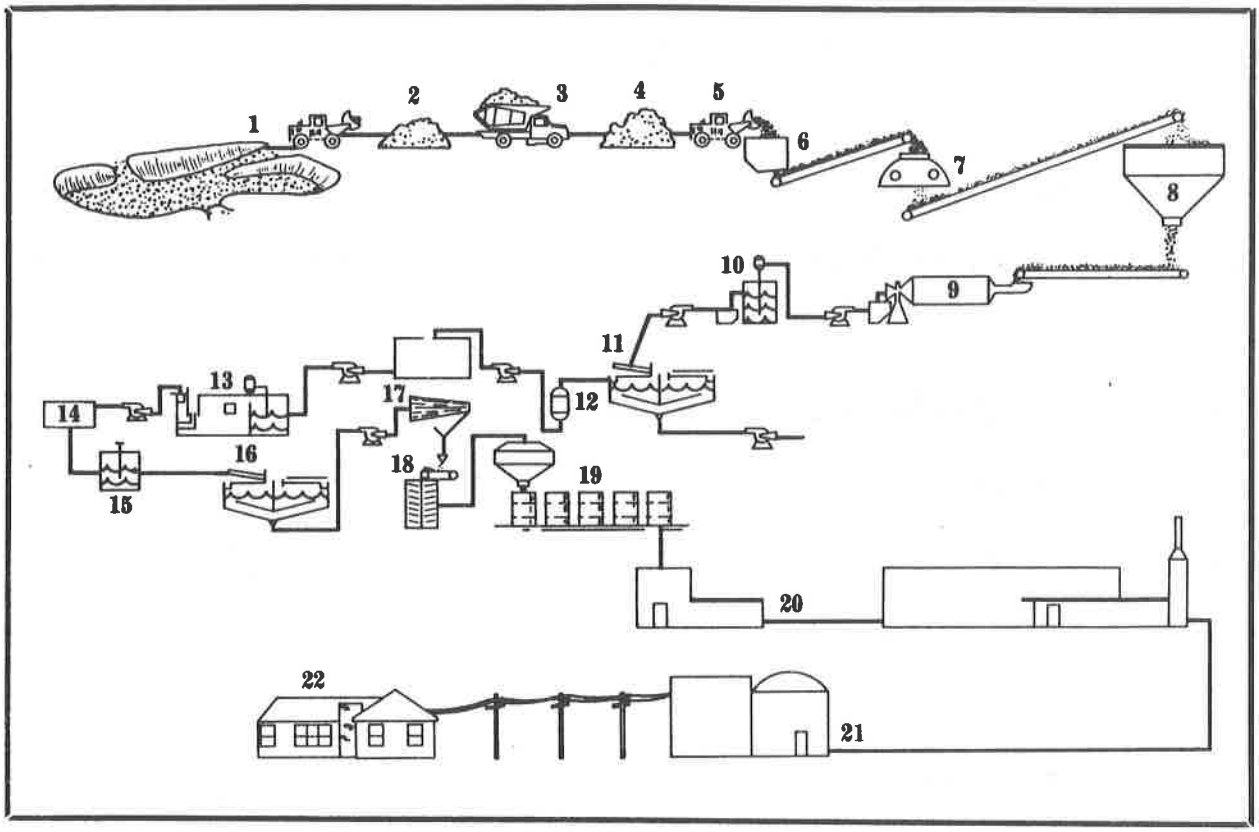
Exploration Drilling for Uranium In the United States

1981

State	Millions of Feet*
1. Texas	3.9
2. Wyoming	3.8
3. Utah	1.9
4. New Mexico	1.5
5. Colorado	1.0

*States not listed had a combined total of 1.9 million feet.

SOURCE: Department of Energy



From Mine to Mill

Uranium ore from the mine (1) is stockpiled (2), then hauled over the highways (3) to the millsite stockpile (4), where it is sampled and tested. A front end loader (5) picks up the ore and drops it into a hopper and feeder (6), then to a crusher (7), and to storage bins (8). Ores then go to two rod mills (9) where lumps of sand and clay and rock are broken down by grinding with water.

The pulp is pumped to leaching vats (10), where it is mixed with acid and agitated for up to 8 hours to dissolve the uranium coatings. The leached pulp then is pumped to 90-foot wooden tanks called thickeners (11), where it is allowed to settle and be washed in six steps to remove the last traces of dissolved uranium before the washed sand is discarded.

The solution is clarified in filters (12) before going to the solvent extraction system (13), where organic solvents are used to extract and concentrate the uranium. Next it goes through a strip circuit (14), then is precipitated (15), then allowed to settle in a thickener (16), dried in a centrifuge (17) and a dryer (18) before being packed in sealed drums (19) for shipment to our customers. More than 90 percent of the uranium contained in the ore is recovered and saved.

Uranium concentrate called yellowcake is purchased by large electric utilities who pay others to have it enriched and treated (20) and eventually manufactured into fuel elements which are used to power generating plants (21), where electricity is produced and distributed to homes (22) and industry throughout the USA.

Uranium Fueled Power Plants
(Current As Of August 9, 1982)

Year	Plant Name	Operator	County	MW
1984	Comanche Peak #1	TU	Somervell	1,150
1985	————————			
1986	Comanche Peak #2	TU	Somervell	1,150
1987	South Texas #1	HLP	Matagorda	1,250
1988	————————			
1989	South Texas #2	HLP	Matagorda	1,250
1990	————————			
1991	Allen's Creek #1	HLP	Austin	1,200

Operator Abbreviations

HLP..... Houston Lighting & Power Company
TU..... Texas Utilities

Permitted Uranium Operations

Permit No. 008

Conoco, Inc. (512) 254-3581
Conquista Project
Mr. Claude Olenick
Administrative Director
P.O. Box 309
Falls City, Texas 78113

Name of Mine	Location
Site 1 (Thomas-Knandel-Dybowski)	Gonzales County
Site 2 (Winerich)	Karnes County
Site 3 (Kotzur)	Karnes County
Site 4 (Fort Worth National Bank)	Karnes County
Site 5 (Rosenbrock-Carmody)	Karnes County
Site 6 (Moczygemba)	Karnes County
Site 7 (Hurt)	Atascosa County
Site 8 (House-Seale-Taylor)	Live Oak County
Site 9 (Zamzow)	Karnes County
Site 10 (Labus-Hoffman)	Karnes County
Site 11 (Franklin-Swierc)	Karnes County
Site 12 (Nieschwietz)	Karnes County
Site 13 (Dickson-Pawelek)	Karnes County
Site 14 (Garcia)	Karnes County
Site 15 (Korth-Hartman-Finch)	Karnes County
Site 16 (Steinmann-Lotta-Swanson)	Karnes County
Site 17 (Smith)	Gonzales County
Site 18 (Griffin)	Gonzales County
Site 21 (House)	Live Oak County
Site 23 (Korzekwa-Nieschwietz)	Karnes County
Site 24 (W. Dzuik)	Karnes County
Site 25 (Banduch-Cochran)	Karnes County
Site 26 (Dzuik-Lyssy)	Karnes County
Site 27 (Dobie)	Live Oak County
Site 28 (Chapman)	Live Oak County
Site 30 (Weddington)	Karnes County
Site 31 (Sickenius)	Karnes County
Site 32 (Pawelek-Lyssy-Butler)	Karnes County
Mill (Mill Site)	

Permit No. 009

Exxon Minerals Company, U.S.A. (512) 786-2586
Mr. Dave Range, Supervisory Engineer
P.O. Box 827
Three Rivers, Texas 78071

FELDER URANIUM OPERATION located in Live Oak County, Texas

Permit No. 010

(512) 780-3911

Chevron U.S.A. Inc.
Mr. Jay Reynolds
P.O. Box 1000
Hobson, Texas 78117

PANNA MARIA PROJECT located in Karnes County, Texas

Permit No. 020

(512) 254-3581

Conoco, Inc.
Conquista Project
Mr. Claude Olenick
Administrative Director
P. O. Box 309
Falls City, Texas 78113

BOSO MINE (SITE # 33) located in Karnes County, Texas

Permit No. 022

(512) 254-3581

Conoco, Inc.
Conquista Project
Mr. Claude Olenick
Administrative Director
P. O. Box 309
Falls City, Texas 78113

MARTIN MINE (SITE # 34) located in Live Oak County, Texas

Permit No. 024

(512) 780-3911

Chevron U.S.A. Inc.
Mr. Jay Reynolds
P. O. Box 1000
Hobson, Texas 78117

JACK PUMP MINE located in Karnes County and Gonzales County, Texas

Permit No. 027

(303) 575-4222

Anaconda Mineral Company
Mr. Eugene C. Tidball
Senior Counsel
555 Seventeenth Street
Denver, Colorado 80202

RHODE RANCH MINE located in McMullen County, Texas

Permit No. 028

Conoco, Inc. (512) 254-3581
Conquista Project
Mr. Claude Olenick
Administrative Director
P. O. Box 309
Falls City, Texas 78113

TOM RETZLOFF MINE (SITE # 35) located in Atascosa County, Texas

Permit No. 032

Conoco, Inc. (512) 254-3581
Conquista Project
Mr. Claude Olenick
Administrative Director
P. O. Box 309
Falls City, Texas 78113

NUHN-KORZEKWA MINE (SITE # 37) located in Karnes County, Texas

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Vice President

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Senior Exploration Geo.

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Coal & Energy Resources Department
P. O. Box 1501
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Suite 735, Promenade Bank Tower
Richardson, Texas 75080
Telephone: (214) 234-5294

Mike Russell
Geologist

Urex, Inc.
212 Gaslight Square
Corpus Christi, Texas 78404
Telephone: (512) 882-1453

Robert D. Jennell, III
District Landman

Production/Acreage Permits

(As of August 12, 1982)

Mineral	Company (Operation)	Tons/yr.	Total Acres Permitted	Permit Approved	Permit Issued
Uranium	**Conquista Project**				
	Site # 1 (Thomas-Knandel-Dybowski)				
	Current	200,000	710	Y	Y
	Site # 2 (Winerich)				
	Current	45,000	105	Y	Y
	Site # 3 (Kotzur)				
	Current	70,000	45	Y	Y
	Site # 4 (F.W.N.B.)				
	Current	60,000	68	Y	Y
	Site # 5 (Rosenbrock-Carmody)				
	Current	150,000	1,016	Y	Y
	Site # 6 (Moczygemba)				
	Current	35,000	35	Y	Y
	Site # 7 (Hurt)				
	Current	150,000	119	Y	Y
	Site # 8 (House-Seale-Taylor)				
	Current	50,000	290	Y	Y
	Site # 9 (Zamzow)				
	Current	100,000	674	Y	Y
	Amendment # J	200,000	731	N	N
	Site # 10 (Labus-Hoffman)				
	Current	80,000	204	Y	Y
	Site # 11 (Franklin-Swierc)				
	Current	50,000	318	Y	Y
	Site # 12 (Nieschwietz)				
	Current	65,000	1,321	Y	Y
	Site # 13 (Dickson-Pawelek)				
	Current	60,000	93	Y	Y

Mineral	Company (Operation)	Tons/yr.	Total Acres Permitted	Permit Approved	Permit Issued
	Site # 14 (Garcia) Current	15,000	249	Y	Y
	Site # 15 (Korth-Hartman-Finch) Current	40,000	835	Y	Y
	Site # 16 (Steinmann-Lotta-Swanson) Current	60,000	1,063	Y	Y
	Site # 17 (Smith) Current	80,000	104.63	Y	Y
	Site # 18 (Griffin) Current	30,000	197	Y	Y
	Site # 21 (House) Current	100,000	177	Y	Y
	Site # 23 (Korzekwa-Nieschwietz) Current	25,000	280	Y	Y
	Site # 24 (W. Duzik) Current	15,000	204	Y	Y
	Site # 25 (Banduch-/Cochran) Current	30,000	239	Y	Y
	Site # 26 (Dzuik-Lyssy) Current	25,000	281	Y	Y
	Site # 27 (Dobie) Current	110,000	1,061	Y	Y
	Site # 28 (Chapman) Current	30,000	39	Y	Y
	Site # 30 (Weddington) Current	65,000	382	Y	Y
	Site # 31 (Sickenius) Current	25,000	83	Y	Y
	Site # 32 (Palewek-Lyssy Butler) Current	90,000	530	Y	Y

Mineral	Company (Operation)	Tons/yr.	Total Acres Permitted	Permit Approved	Permit Issued
	Site # 33 (Bozo)				
	Current	86,000	1,760	Y	Y
	Site # 34 (Martin)				
	Current	125,000	216	Y	Y
	Site # 35 (Tom Retzloff)				
	Current	33,000	847	Y	Y
	Site # 37 (Nuhn-Korzekwa)				
	Current	-0-	-0-		
	Application	110,000	40	Y	Y
	Mill Site				
	Current		377.8	Y	Y
	Exxon (Felder)				
	Current	250,000	1,514	Y	Y
	Amendment # D	250,000	1,637	N	N
	Chevron (Panna Maria)				
	Current	700,000	2,943	Y	Y
	Chevron (Jack Pump)				
	Current	(6 yrs.) 180,000	2,592	Y	Y
	Anaconda (Rhode Ranch)				
	Current	180,000	8,909	Y	Y

Railroad Commission of Texas
Uranium Surface Mining Operations
Annual Progress Report

1981

Operator and Mine	Land Disturbed (acres)	Land Vegetated		Pounds of Oxide (U_3O_8)	1981 Estimated Acreage Disturbed	1981 Estimated Pounds of Oxide (U_3O_8)
		Temporary* (acres)	Permanent** (acres)			
Chevron Resources Co.	198.9	100.65	-0-	833,000	237.71	800,000
Conoco, Inc.	117.0	-0-	662.0	837,154	-0-	250,000
Exxon Minerals Co.	35.9	-0-	40.7	1,069,000	3.30	224,000
Anaconda Minerals Co.	-0-	-0-	-0-	-0-	-0-	-0-
TOTAL	**351.8**	**100.65**	**702.7**	**2,739,154**	**241.01**	**1,274,000**

*Acreage which has been planted with temporary vegetation (example: Ryegrass) to stabilize the soil until it can be utilized for its designated purpose or until the season is suitable for the planting of permanent vegetation.

**Acreage which has been planted with a perennial vegetative cover to achieve final reclamation.

Railroad Commission of Texas
Uranium Surface Mining Operations
Annual Progress Report

1980

Operator and Mine	Land Disturbed (acres)	Land Vegetated		Pounds of Oxide (U_3O_8)	1981 Estimated Acreage Disturbed	1981 Estimated Pounds of Oxide (U_3O_8)
		Temporary* (acres)	Permanent** (acres)			
Chevron Resources Co.	385	104.09	89.8	935,000	153.0	810,000
Conoco, Inc.	319	163	383.0	1,243,199	47.0	800,000
Exxon Minerals Co.	-0-	-0-	17.9	982,000	9.4	856,000
TOTAL	**704**	**267.09**	**490.7**	**3,160,199**	**209.4**	**2,475,000**

*Acreage which has been planted with temporary vegetation (example: Ryegrass) to stabilize the soil until it can be utilized for its designated purpose or until the season is suitable for the planting of permanent vegetation.

**Acreage which has been planted with a perennial vegetative cover to achieve final reclamation.

Railroad Commission of Texas
Uranium Surface Mining Operations
Annual Progress Report

1979

Operator and Mine	Land Disturbed (acres)	Land Vegetated		Pounds of Oxide (U_3O_8)	1980 Estimated Acreage Disturbed	1980 Estimated Pounds of Oxide (U_3O_8)
		Temporary* (acres)	Permanent** (acres)			
Chevron Resources Co.	86	86.4	138.2	500,000	201	500,000
Conoco, Inc.	341	222.0	314.0	1,141,210	458	1,182,480
Exxon Minerals Co.	6	8.0	77.5	1,238,100	1	653,000
TOTAL	**433**	**316.4**	**529.7**	**2,879,310**	**660**	**2,335,480**

*Acreage which has been planted with temporary vegetation (example: Ryegrass) to stabilize the soil until it can be utilized for its designated purpose or until the season is suitable for the planting of permanent vegetation.

**Acreage which has been planted with a perennial vegetative cover to achieve final reclamation.

Railroad Commission of Texas
Uranium Surface Mining Operations
Annual Progress Report

1978

Operator and Mine	Land Disturbed (acres)	Land Vegetated		Pounds of Oxide (U_3O_8)	1979 Estimated Acreage Disturbed	1979 Estimated Pounds of Oxide (U_3O_8)
		Temporary* (acres)	Permanent** (acres)			
Chevron Resources Co.	197.5	93.5	46	0	170	
Conoco, Inc.	370.0	113.0	138	1,159,439	374	
Exxon Minerals Co.	94.0	43.0	32	628	0	
TOTAL	**661.5**	**249.5**	**216**	**1,160,067**	**544**	

*Acreage which has been planted with temporary vegetation (example: Ryegrass) to stabilize the soil until it can be utilized for its designated purpose or until the season is suitable for the planting of permanent vegetation.

**Acreage which has been planted with a perennial vegetative cover to achieve final reclamation.