

DEPARTMENT OF THE INTERIOR.

CIRCULAR No. 1.

MAPS OF SEGREGATED COAL LANDS

IN THE

McALESTER DISTRICT, CHOCTAW NATION,
INDIAN TERRITORY,

WITH

DESCRIPTIONS OF THE UNLEASED SEGREGATED COAL LANDS.

BY

JOSEPH A. TAFF.

Bids for the purchase of tracts within this district will be opened by the Commissioner of Indian Affairs, at his office in Washington, at 2 o'clock p. m. (eastern time), on Monday, October 3, 1904.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.

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ILLUSTRATIONS.

Map of McAlester district (north sheet) showing segregated coal lands and coal outcrops	At end.
Map of McAlester district (south sheet) showing segregated coal lands and coal outcrops	At end.

LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
UNITED STATES GEOLOGICAL SURVEY,
Washington, D. C., May 31, 1904.

SIR: I have the honor to transmit herewith descriptive texts in duplicate on the unleased segregated coal lands in the McAlester district, Choctaw Nation, Indian Territory, prepared by Mr. Joseph A. Taff in accordance with instructions contained in your letter of May 16, 1904. It is proposed that this report be published as Circular No. 1 for the information of those submitting bids in the first sale of unleased segregated coal lands.

Very respectfully,

CHAS. D. WALCOTT, *Director.*

HON. E. A. HITCHCOCK,
Secretary of the Interior.

DESCRIPTION OF THE UNLEASED SEGREGATED COAL LANDS IN THE MCALESTER DISTRICT, CHOCTAW NATION, IND. T.

[Northern section corresponding to the northern map sheet.]

INTRODUCTORY REMARKS.

For convenience of description and also of publication of maps, the McAlester district is divided into a northern and a southern part. The maps are distinguished as the northern and southern sheets. The tracts of unleased lands designated for sale are colored blue, and numbered consecutively and correspondingly on the maps and in the descriptions for the entire district beginning with the northern sheet. The leased lands which are not to be sold until further action of Congress are bounded, each lease separately, by heavy black lines. On each lease is the name of the holder and the number.

The United States Geological Survey began the survey of the Choctaw coal field in 1897, starting at the west end. When the work had progressed to the east end of what is here known as the McAlester district a report on the economic features of the coal was published in Part III of the Nineteenth Annual Report, in 1899. In this work the entire field was carefully surveyed, the outcrops of the coal beds as well as other formations were traced, and their structure and positions beneath the surface determined to close approximations.

In the surveys incident to the segregation of the coal lands, the coal outcrops were retraversed and examined in the light of later mining developments.

Revision of previous locations and the extensions or the projection of new lines of railroad is, according to law, under the jurisdiction of the United States courts of Indian Territory. Any changes of existing lines or the building of new railroads on the segregated coal lands since March, 1903, have no authentic record in the Department of the Interior further than a map showing the plan of the proposed changes or projections proposed.

CONDITIONS GOVERNING THE CLASSIFICATION OF COAL BEDS.

In the selection of these lands for segregation and sale the following criteria were considered of essential importance:

1. The coal should be of a quality and hardness to create a demand for its use for commercial purposes.

2. It should be thick enough to be worked successfully.
3. Its structure or position and depth in the earth should assure profitable mining.

In the description of each tract or lease only those coal beds are considered to which the above qualifications can be applied.

In some coal regions it is found that certain coal beds are variable in thickness or quality or that both the thickness and quality are matters of uncertainty within short distances. It has been found that all beds of coal as well as other rocks are variable in thickness and composition within wide range.

The rocks in the McAlester district are folded in such a manner that the coal beds come to the surface or crop out in long stretches, and the thickness and quality of the beds have been proved by extensive prospecting or by mining throughout the entire surface occurrence. The folding of the strata also causes the coal to extend to depths reaching the limit of practical mining within a few miles at farthest from the outcrops of the beds. It is reliably certain that if particular beds of coal vary but slightly both in quality and thickness in various directions along outcrops throughout the district, as is the case with the Hartshorne and McAlester beds, the same will be equally permanent within a few miles from the outcrop.

In the case of the Upper Hartshorne bed it appears that there is simply a variation in thickness without material change in composition. Since it is known to be locally variable, not only in this district but in the Wilburton and Howe districts as well, it is neither correct nor profitable to assume that it is present in workable thickness far from the land where its conditions are known.

The local coal bed southwest of South McAlester is located only in the vicinity of its known occurrence.

Locally variable thin beds of coal have been shown by drill records and by surface prospecting to occur in the district at various positions in the rocks above the Hartshorne coal. The coal in these beds can not be profitably worked at present and will not be in demand until a time when the thicker beds are exhausted. This time is so indefinitely distant in the future that their presence is not considered to add any value to the lands.

DESCRIPTION OF THE COAL BEDS.

HARTSHORNE COAL.

There are four beds of commercially valuable coal in the McAlester district. The lowest one of these, which is known as the Hartshorne bed, is believed to be of workable thickness throughout the district. The rocks are folded in such a manner that the coal comes to the surface in a crop 50 miles in length. The coal has been very extensively prospected near the outcrop and is being mined at many localities.

With the exception of a small area which has been excluded from the segregated lands, the Hartshorne coal so far as known ranges in thickness between 3 and 6 feet. An average is estimated to be a little above 4 feet.

The Hartshorne coal, so far as known in the lands selected, is invariably clear of shale or other detrimental rock, and has been found to be uniformly of good quality. It has been most extensively mined at Hartshorne and vicinity in the Hartshorne basin. Average samples of the coal coming from different parts of the Hartshorne mine were collected and analyzed. An analysis also of coal from the same bed, 2 miles east of Krebs, is given below for comparison.

Proximate analysis of the Hartshorne coal.

Location of mine.	Moisture in vacuo over H ₂ SO ₄ , 20 to 24 hours.	Volatile combustible matter, less moisture in vacuo.	Fixed carbon.	Ash.	Sulphur.	Phosphorous.
	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>
Shaft No. 1, Hartshorne.....	1.68	41.00	51.91	5.41	2.72	0.012
Hughes's mine, 2 miles east of Krebs.	1.04	37.96	55.84	5.16	2.00	.012

The roof of the Hartshorne coal is usually a hard, slaty shale, which is locally replaced by sandstone, and the floor is a compact shale or clay.

UPPER HARTSHORNE COAL.

The second coal bed in the district occurs about 50 feet above the Hartshorne coal, and may be described as the Upper Hartshorne bed. This coal is more variable in thickness than the one below. In the eastern part of the district it is not known to be of workable thickness. In the western part, west of McAlester, it is approximately 5 feet, while the lower bed is a little more than 4½ feet in thickness. Eastward, also, in the adjoining Wilburton district the Upper Hartshorne thickens to 4½ feet.

This bed is practically the same in physical aspect and quality as the coal of the lower bed. An analysis of the Upper Hartshorne coal from the mine in the west side of the town of Wilburton, is shown in the following record.

Proximate analysis of the Upper Hartshorne coal.

Location.	Moisture.	Volatile combustible matter.	Fixed carbon.	Ash.	Sulphur.	Phosphorous.
	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>
West side of Wilburton, Ind. T	1.43	38.15	50.76	9.66	1.38	0.052

As with the lower Hartshorne coal, the roof in this case is usually a hard, slaty shale, and the floor consists of compact clay or shale.

MCALESTER COAL.

The McAlester coal is the third bed of workable thickness in the district and occurs from 1,200 to 1,300 feet above the Hartshorne coal, considered vertically in the rock section. Being higher in the rocks it has a greater length of outcrop and is generally more advantageously disposed structurally, so that relatively larger areas can be successfully mined. The bed has an outcrop length of more than 70 miles in the southern part of the district.

The McAlester coal varies in thickness from a little above $4\frac{1}{2}$ feet in the west end to about 3 feet in the east end of the district. It contains no shaly partings or earthy impurities, so far as known. The quality of the McAlester coal is uniformly high, as shown by the following analysis of the coal from mines at Krebs and McAlester:

Proximate analysis of the McAlester coal.

Location of mine.	Moisture in vacuo over H_2SO_4 , 20 to 24 hours.	Volatile combustible matter, less moisture in vacuo.	Fixed carbon.	Ash.	Sulphur.	Phosphorus.
	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>
Shaft No. 10, Krebs	1.74	37.00	56.86	4.40	0.65	0.014
Sample's slope, 1 mile west of McAlester.....	2.08	37.52	56.02	4.38	.80	.016

The McAlester as well as the Hartshorne coals are coked successfully, making a coke of good grade. This is attested by the coking plants in operation at Krebs and Alderson.

By comparing the analyses of the Hartshorne and McAlester coals it will be seen that the latter is higher in quality. The McAlester coal is also slightly harder, having an advantage both in mining and shipping.

Fourth and upper coal bed.—The fourth and highest coal in the McAlester district occurs in the basin southwest of McAlester. It occupies a position in the rocks closely related to that of the Witteville coal, in the Howe district, which is in the eastern part of the Choctaw coal field, and to that of the coal of the McCurtain district, on Jones Creek, a few miles north of the McAlester district. This bed has the same kind of roof and floor, and the quality of the coal also appears to be essentially the same as the Witteville and Jones Creek coals. The thickness is probably a little less than that of the Jones Creek, it being nearly 3 feet. It is admirably suited for mining, the outcrop being near to and parallel with the Missouri, Kansas and Texas, and the Choctaw, Oklahoma and Gulf railways. Thicker beds being in the vicinity, it has not yet been mined except to a small extent for local use.

STRUCTURE OF THE MCALESTER DISTRICT.

The structure of the rocks in the McAlester district is such that the coal beds are well situated for mining. A wide and deep downward fold known as the Kiowa syncline enters the southeast part of the district bearing toward the northeast. In the vicinity of Dow, in the southeastern part of T. 5 N., R. 16 E., the fold turns eastward, forming a shallow spoon-like basin, known locally as the Hartshorne basin. The Hartshorne coal is accessible throughout this basin.

Lying next to and north of the Hartshorne basin, there is an upward or anticlinal fold which has been in part turned over toward the north. It is known as the McAlester anticline. This fold bears nearly due west from the border of the district to Krebs, where it is deflected northward and then westward, the central line or axis passing through the town of McAlester. From McAlester it bears toward the southwest parallel with the Choctaw, Oklahoma and Gulf Railroad to the boundary of the district. Considering the rocks lengthwise in the fold, it is seen that the coal pitches downward toward the west 2 miles east of Krebs, and continues eastward beneath the surface until it reaches the Missouri, Kansas and Texas Railway in the northern part of McAlester, where it rises abruptly to the surface. It again descends, pitching toward the southwest in the axis of the fold at the Busby mine in the southeast quarter of sec. 33, T. 6 N., R. 14 E. Considering the coal crosswise in the McAlester fold, it is seen that, as a general rule, the nearer the coal approaches the axis of the fold the steeper it is inclined. The Hartshorne coal at its outcrop, it will be observed, dips at greater angles than does the McAlester, which crops out farther away from the center of the fold. Throughout the south side the coal beds have not been greatly disturbed, the dips being usually between 10° and 20° , except in that part of the district west of McAlester, where the inclination locally reaches 40° .

The conditions of structure are different in the north side of the fold. From the vicinity of Carbon, eastward, the Hartshorne coal dips northward between 90° and 45° , and going toward the north from the outcrop the inclination or dip decreases rapidly, reaching between 15° and 30° at the outcrop of the McAlester coal. There is a small basin which pitches at a low angle toward the east immediately northwest of Carbon, where the McAlester coal is well situated for mining operations. From sec. 36, T. 6 N., R. 15 E., westward in the north side of the fold the coal beds are steeply tilted. From McAlester westward a fault extends parallel with and very near the axis of the fold upon the north side displacing the Hartshorne coals. Remnants of these beds may be found in place along the fault, but the rocks as a whole, including the coals, have been displaced downward upon the north side with respect to the same beds upon the south side.

The same fault, or one in strike with it, bears eastward from McAlester, disturbing and misplacing the McAlester coal in the north side of sec. 33, T. 6 N., R. 15 E. In the excessively disturbed tracts above referred to the coal beds are not considered to be of any economic value.

A flatter upward fold bears southwestward from the vicinity of Alderson to and beyond Savanna. The McAlester coal pitches toward the southwest in the axial part of this fold at a low angle until near the border between the north and south sheets, where it begins to rise and should come to the surface again in the vicinity of Savanna. It is estimated that the McAlester coal is accessible along the axial part of this fold, from which it dips at low angles toward the northwest and southeast.

Between this fold and the McAlester anticline there is the basin southwest of South McAlester in which the uppermost coal of the district is exposed.

DESCRIPTION OF SEGREGATED COAL LANDS NOT UNDER LEASE IN THE SOUTHERN SECTION, CORRESPONDING TO THE SOUTH MAP SHEET.

The southern part of the McAlester district contains two known workable beds of coal. These are the Hartshorne and McAlester beds, which are connected in outcrop with the same beds cropping out in the northern section of the district southeast of Hartshorne.

THE COAL BEDS.

HARTSHORNE COAL.

The lower of the Hartshorne coal beds is believed to be of workable thickness in the southern part of the district though its occurrence is known only by prospecting. Its outcrop is continuous throughout the southeast side of the district and it is believed that it occurs also southwestward from the vicinity of Savanna. This bed is reported by the prospector to be 4 feet to 4 feet 9 inches thick in the southeastern side of the district. It is for the most part steeply inclined at the outcrop, but the dips grow less as it passes downward. It has been prospected to a considerable extent, but it has not been exploited for commercial uses. The roof of the coal, as in other parts of the Choctaw coal field where the bed is found, is usually of hard shale and the floor is a compact clay.

It is not believed that the quality of the coal is materially different from that of the same bed in the mines at Hartshorne and near Krebs, which are about 6 miles northeast of the Savanna district. The analyses of the Hartshorne coal from these localities are given in the description of the northern section of the district.

Considering that the Hartshorne coal in this district is the same as that of the corresponding coal in the McAlester, Wilburton, and Howe districts it should produce a good quality of coke. Coking tests, however, of the coal in this section have not been made.

The second or upper Hartshorne bed is not known to be of workable thickness in the district. In the McAlester and Howe districts it is locally too thin to be mined successfully, and in the Lehigh district it is not known to occur. This coal bed should not be considered here or elsewhere until its quality and thickness are known to be sufficient to make it economically workable.

MCALESTER COAL.

The McAlester coal bed, like that of the Hartshorne, is connected in outcrop with the same bed in the northern part of the McAlester district. It crops out along the southeast side of this district and in a

long oval southwestward from the vicinity of Savanna, in all a distance of about 40 miles. The inclination of the McAlester bed from its outcrop is less than that of the Hartshorne and it is being mined in both sides of the district. The coal varies in thickness from about 3 feet to 4 feet 6 inches and maintains the good quality which it is known to have in the northern part of the McAlester district.

STRUCTURE OF THE ROCKS.

A relatively wide and deep downward fold or syncline extends in a northeast-southwest direction across the Savanna district, the axial or central part passing through the town of Kiowa. It is known as the Kiowa syncline. From the vicinity of Kiowa this syncline pitches, becoming deeper northeast and southwest from Kiowa. Both the Hartshorne and McAlester coals dip toward the northwest from their outcrops in the southeast side of the fold, becoming gradually flatter until they attain practically horizontal positions at depths of 2,000 to 3,000 feet beneath the surface in the central part of the basin. The same beds rise toward the northwest from the axial part of the fold, reaching the surface again in the Savanna anticline. The coal beds in this upward fold pitch toward the northeast and southwest along the axial part at relatively low dips. Toward the northwest and southeast, however, in the sides of the fold the dips are steeper, but decrease in inclination, reaching 10 to 20° in dip at depth of 1,500 to 1,700 feet beneath the surface.

DESCRIPTION OF TRACTS, NORTHERN MAP SHEET.

TRACT NO. 1.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	18	4	16	40
SE. $\frac{1}{4}$	18	4	16	160
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	18	4	16	80
Lot 4.....	18	4	16	38.21
NE. $\frac{1}{4}$	19	4	16	160
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	19	4	16	80
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	19	4	16	40
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	19	4	16	80
Lots 3 and 4.....	19	4	16	76.14
Lot 1.....	19	4	16	38.15
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	19	4	16	40
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	20	4	16	40
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	20	4	16	40
Total area.....				912.50
Occupied by railroad.....				9.89

Both the Hartshorne and McAlester coals are found in this tract. The former is estimated to be about 1,300 feet beneath the latter. The structure of the rocks is such that the McAlester coal outcrops in three lines passing across the tract in a northeast-southwest direction and forms a narrow basin a little south of the center of section 19. From the N. $\frac{1}{2}$ of the N. $\frac{1}{2}$ of sec. 19 this coal dips northward from its outcrop about 25°, and is at an estimated depth of 1,500 feet at the north limit of the tract.

The Hartshorne coal crops out near the south edge of the tract, dipping northward 30° to 60°. It is estimated that it rises to within a few hundred feet of the surface near the middle of the N. $\frac{1}{2}$ of sec. 19 and again descends toward the northwest.

The McAlester coal underlies approximately 640 acres of the tract, while the Hartshorne coal underlies all except about 60 acres at the extreme south side.

TRACT NO. 2.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	16	4	16	40
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	16	4	16	80
NW. $\frac{1}{2}$ of SE. $\frac{1}{4}$	17	4	16	40
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	17	4	16	80
W. $\frac{1}{2}$	17	4	16	320
NE. $\frac{1}{4}$	20	4	16	160
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	20	4	16	40
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	20	4	16	80
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	20	4	16	40
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	21	4	16	80
Total area.....				960
Occupied by railroad.....				8.32

Both the Hartshorne and McAlester coal beds crop out across the southeast side of this tract, dipping northwestward at steep angles. A narrow and rather deep basin containing these coal beds extends in a northeast-southwest direction, crossing near the center of the N. $\frac{1}{2}$ of section 20. It is estimated that the McAlester coal rises to within a few hundred feet of the surface in the SE. $\frac{1}{4}$ of the SE. $\frac{1}{4}$ of section 17, and again descends toward the northwest, reaching a depth approximating 1,500 feet at the northwest corner of the tract. The McAlester coal outcrops also in the northwest corner of section 20, pitching toward the northeast.

The Hartshorne coal conforms in structure with the McAlester above described, but is everywhere approximately 1,300 feet beneath it. The area of the McAlester coal in this tract is approximately 620 acres, and that of the Hartshorne about 820 acres.

TRACT NO. 3.

	Sec- tion.	Town- ship north.	Range east.	Acres.
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	8	4	16	80
SE. $\frac{1}{4}$	8	4	16	160
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	8	4	16	40
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	9	4	16	80
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	15	4	16	40
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	16	4	16	80
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	16	4	16	80
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	16	4	16	80
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	16	4	16	40
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$	16	4	16	80
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	17	4	16	40
NE. $\frac{1}{4}$	17	4	16	160
Total area.....				960
Occupied by railroad.....				14.03

Both the Hartshorne and McAlester coals outcrop across the southeast end of tract No. 3, dipping toward the northwest 70° to 80° . After passing beneath a narrow basin extending northeast to southwest near the center of section 16, the McAlester coal approaches to within a few hundred feet of the surface in the extreme northwest corner of the section. From the northwest corner of section 16 the coal dips again toward the northwest and reaches a depth of approximately 1,500 feet at the northwest side of the tract. The Hartshorne coal is considered to be everywhere at its usual depth of approximately 1,300 feet beneath the McAlester coal.

The area of the McAlester coal is about 860 acres, while that of the Hartshorne is about 900 acres.

TRACT NO. 4.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	4	4	16	40
Lot 2.....	4	4	16	39.63
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	4	4	16	40
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	4	4	16	80
Lot 3.....	4	4	16	39.53
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	4	4	16	80
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	33	5	16	80
Total area.....				399.16

Leased lands of the Arkansas and McAlester Coal Company lie between the outcrop of the McAlester coal and this tract. The depth of the coal in the southeast side of the tract is approximately 1,500 feet.

TRACT NO. 5, PARCEL NO. 1.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	3	4	17	40
Occupied by railroad, in SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$, sec. 3, T. 4 N., R. 17 E.....				1.61

This parcel of tract No 5 contains only Hartshorne coal, which outcrops across its south side. It contains approximately 30 acres of coal which is easily accessible.

TRACT NO. 5, PARCEL NO. 2.

	Sec- tion.	Town- ship north.	Range east.	Acres.
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	13	5	15	80
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	13	5	15	40
Area of parcel.....				120

This parcel is underlain by the Hartshorne coal and is surrounded entirely by leased lands. The coal is estimated to be 800 feet beneath the surface in the northeast corner. The dip is toward the south 20° .

TRACT NO. 5, PARCEL NO. 3.

	Sec- tion.	Town- ship north.	Range east.	Acres.
W. $\frac{1}{2}$ of NE. $\frac{1}{4}$	26	5	16	80
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	26	5	16	80
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	26	5	16	40
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	35	5	16	80
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	35	5	16	40
Area of parcel.....				320
Occupied by railroad.....				0.58

This parcel contains only the Hartshorne coal, except possibly a small area of the McAlester coal in the extreme southwest corner. It

is entirely surrounded by leased lands. In the southeast and northeast corners of the tract the Hartshorne coal is at a depth of about 1,000 feet. The coal in this tract dips about 10° toward the northwest at the south end, toward the west in the middle, and toward the southwest at the north end.

TRACT NO. 5, PARCEL NO. 4.

	Section.	Township north.	Range east.	Acres.
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	26	5	17	40
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	26	5	17	80
S. $\frac{1}{2}$ of S. $\frac{1}{2}$	27	5	17	160
S. $\frac{1}{2}$ of S. $\frac{1}{2}$	28	5	17	160
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	29	5	17	40
Area of parcel				480
Occupied by railroad				3.97

This parcel lies in the middle of the Hartshorne basin and contains only the Hartshorne coal. It is surrounded entirely by leased lands, and the coal lies practically flat at a depth of 300 to 800 feet beneath the surface. The coal pitches, with the basin, westward.

Total area of tract No. 5 is 960 acres.

TRACT NO. 6.

	Section.	Township north.	Range east.	Acres.
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	12	5	13	80
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	12	5	13	40
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	12	5	13	80
All of	13	5	13	640
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	24	5	13	80
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	24	5	13	40
Total area				960
Occupied by railroad				12.44

Both the Hartshorne and McAlester coals occur in this tract, but the latter only is accessible. The McAlester coal outcrops or is near the surface in the northeast corner of the tract. The coal dips toward the south and west. Toward the southwest and south especially the dip of the coal is but a few degrees, the bed reaching approximately 1,000 feet beneath the surface at the extreme south end. The whole tract is underlain by coal.

TRACT NO. 7.

	Section.	Township north.	Range east.	Acres.
Lot 3	5	5	14	38.76
Lot 4	5	5	14	38.53
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	5	5	14	40
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	6	5	14	40
SE. $\frac{1}{4}$	6	5	14	160
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	6	5	14	40
Lot 7	6	5	14	38.76
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	1	5	13	40
NE. $\frac{1}{4}$	12	5	13	160
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	12	5	13	80
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	12	5	13	40
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	12	5	13	40
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	32	6	14	80
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	33	6	14	80
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	33	6	14	40
Total area				956.05

Only the McAlester coal, it is believed, is accessible in this tract, and it dips at steep angles toward the northwest and west. A larger area of the coal is accessible where the dips are lowest in sec. 12, T. 5 N., R. 13 E. This tract contains approximately 640 acres of coal, but with the exception possibly of that in section 12 it can be mined only by slopes on account of the steep dip.

TRACT NO. 8.

	Section.	Township north.	Range east.	Acres.
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	17	5	14	80
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	17	5	14	40
SW. $\frac{1}{4}$	17	5	14	160
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	17	5	14	80
SE. $\frac{1}{4}$	18	5	14	160
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	18	5	14	80
Lots 3 and 4	18	5	14	77.90
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	19	5	14	80
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	19	5	14	40
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	19	5	14	80
Lots 1 and 2	19	5	14	78.17
Total area				956.07
Occupied by railroad				8.71

Lands of the J. F. McMurray leases lie between this tract and the outcrop of the McAlester coal. This coal is 800 to 1,000 feet beneath the surface in the extreme northwest corner of the tract. The coal dips toward the southeast at 10° to 15° . A coal bed, 30 inches to 3 feet in thickness, crops out in a northeast-southwest direction, passing near the center of section 18 and the center of the west side of section 19, dipping toward the southeast 10° to 15° . The tract contains approximately 750 acres of this coal.

TRACT NO. 9.

	Section.	Township north.	Range east.	Acres.
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	2	5	14	40
N. $\frac{1}{2}$ of N. $\frac{1}{2}$	10	5	14	160
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	11	5	14	40
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	1	5	14	40
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	1	5	14	80
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	2	5	14	80
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	2	5	14	40
Total area.....				480
Occupied by railroad.....				15.87

The leased lands lie between the outcrop of the McAlester coal and this tract. This coal is at a depth of approximately 1,500 feet in the north side of the tract, and it can not be exploited profitably except from mines located upon the adjacent leased lands.

TRACT NO. 10.

	Section.	Township north.	Range east.	Acres.
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	10	5	14	80
SE. $\frac{1}{4}$	10	5	14	160
SW. $\frac{1}{4}$	10	5	14	160
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	10	5	14	80
W. $\frac{1}{2}$ of NE. $\frac{1}{4}$	11	5	14	80
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	11	5	14	40
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	11	5	14	80
SW. $\frac{1}{4}$	11	5	14	160
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	11	5	14	80
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	11	5	14	40
Total area.....				960

A single coal bed 30 inches to 3 feet in thickness crops out across the north side of the tract, dipping toward the south 10° to 15° . The Hartshorne and McAlester coals occur beneath it, but are beyond the reach of successful mining. The tract contains approximately 920 acres of workable coal.

TRACT NO. 11.

	Section.	Township north.	Range east.	Acres.
<i>Lands outside of South McAlester town site.</i>				
E. $\frac{1}{4}$ of NE. $\frac{1}{4}$	11	5	14	80
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	11	5	14	40
S. $\frac{1}{2}$ of S. $\frac{1}{2}$	12	5	14	160
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	12	5	14	80
NW. $\frac{1}{4}$	12	5	14	160
N. $\frac{1}{2}$	13	5	14	320
				840
<i>Lands within South McAlester town site.</i>				
[Only the deposits of coal or asphalt in or under the lands will be sold.]				
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	12	5	14	40
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	12	5	14	80
				120
Total area.....				960
Occupied by railroad.....				18.45

Tract No. 11 contains the same coal as that in tract 10. The coal dips toward the south and west about 10° . It contains about 800 acres of workable coal.

TRACT NO. 12.

	Sec- tion.	Town- ship north.	Range east.	Acres.
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	13	5	14	80
SW. $\frac{1}{4}$	13	5	14	160
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	14	5	14	40
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	23	5	14	80
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	23	5	14	40
SE. $\frac{1}{4}$	23	5	14	160
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	23	5	14	80
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	23	5	14	40
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	24	5	14	40
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	24	5	14	40
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	24	5	14	80
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	26	5	14	40
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	26	5	14	40
Total area.....				920
Occupied by railroad.....				18.76

This tract contains the same coal as that in Tract 11, the coal outcrops along the southeast side of the tract dipping toward the northwest about 10° . The tract contains, approximately, 620 acres of workable coal.

TRACT NO. 13.

	Sec- tion.	Town- ship north.	Range east.	Acres.
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	33	5	14	80
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	33	5	14	40
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	33	5	14	40
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	33	5	14	80
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	33	5	14	80
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	33	5	14	40
Total area.....				360

This tract contains the same coal as that of No. 12. The coal outcrops across the southeast side, dipping toward the northwest about 10° . This tract contains approximately 320 acres of coal.

TRACT NO. 14.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	26	5	14	40
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	34	5	14	80
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	34	5	14	40
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	34	5	14	40
E. $\frac{1}{2}$	35	5	14	320
SW. $\frac{1}{4}$	35	5	14	160
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	35	5	14	80
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	35	5	14	40
W. $\frac{1}{2}$ of W. $\frac{1}{2}$	36	5	14	160
Total area.....				960

The McAlester coal occurs beneath this tract at an estimated depth of 800 to 1,000 feet. The coal lies in a nearly flat position in the southeast corner, and gradually increases in dip toward the northwest, reaching finally about 10° .

TRACT NO. 15.

	Sec- tion.	Town- ship north.	Range east.	Acres.
<i>Lands within South McAlester Townsite.</i>				
[Only the deposits of coal or asphalt in or under the lands will be sold.]				
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	12	5	14	80
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	12	5	14	40
NE. $\frac{1}{4}$	7	5	15	160
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	7	5	15	80
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	7	5	15	40
Lot 3.....	7	5	15	40.96
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	7	5	15	80
Lots 1 and 2.....	7	5	15	82.45
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	8	5	15	80
NW. $\frac{1}{4}$	8	5	15	160
Total.....				843.41
<i>Lands outside of South McAlester Townsite.</i>				
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	7	5	15	40
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	7	5	15	40
Total.....				80
Total area of tract.....				923.41

This tract contains the McAlester coal, which is about 1,300 feet beneath the northeast corner. The leased lands of the Osage Coal and Mining Company lie between this tract and the outcrop of coal. The coal in this tract can be exploited most profitably by mines located on the leased lands toward the northeast. The dip of the coal in this tract is toward the southwest about 10° .

TRACT NO. 16.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	7	5	15	40
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	8	5	15	80
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	16	5	15	80
SE. $\frac{1}{4}$	17	5	15	160
W. $\frac{1}{2}$	17	5	15	320
NE. $\frac{1}{4}$	18	5	15	160
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	18	5	15	80
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	18	5	15	40
Total area				960

Only the McAlester coal is accessible in tract 16. It lies about 1,100 feet beneath the east end in the southwest corner of section 16. The dip of the coal in this tract is toward the west about 10° .

TRACT NO. 17.

	Sec- tion.	Town- ship north.	Range east.	Acres.
S. W. $\frac{1}{4}$ of SE. $\frac{1}{4}$	18	5	15	40
E. $\frac{1}{2}$	19	5	15	320
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	19	5	15	80
N. $\frac{1}{2}$	20	5	15	320
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	20	5	15	40
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	20	5	15	80
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$	21	5	15	80
Total area				960

Only the McAlester coal is accessible in this tract. It is estimated to be 800 to 1,000 feet beneath the east end in the northwest corner of section 21. The dip of the coal in this tract is toward the west about 10° .

TRACT NO. 18.

	Sec- tion.	Town- ship north.	Range east.	Acres.
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	25	5	14	80
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	25	5	14	40
SE. $\frac{1}{4}$	25	5	14	160
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	25	5	14	80
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	25	5	14	40
NE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	30	5	15	40
W. $\frac{1}{2}$ of E. $\frac{1}{2}$	30	5	15	160
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	30	5	15	160
Lots 1, 2, 3, and 4	30	5	15	160.64
Total area				920.64

The McAlester coal is accessible in this tract. It lies in a nearly flat position in the southeast side and dips toward the northwest at gradually increased grades, reaching about 15° in the northwest side. The depth of the coal beneath the surface in the center of section 30 is estimated at 800 to 1,000 feet.

TRACT NO. 19.

	Sec- tion.	Town- ship north.	Range east.	Acres.
E. $\frac{1}{2}$	36	5	14	320
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	36	5	14	160
W. $\frac{1}{2}$ of NE. $\frac{1}{4}$	31	5	15	80
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	31	5	15	40
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	31	5	15	160
Lots 1, 2, 3, and 4	31	5	15	160.72
Total area				920.72

This tract contains the McAlester coal which lies nearly flat in the northwestern part. The coal increases in dip toward the southeast, reaching approximately 8° . The coal near the center of section 36 is estimated to be at a depth of 800 to 1,000 feet.

TRACT NO. 20.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	20	5	15	40
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	20	5	15	80
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	29	5	15	80
W. $\frac{1}{2}$ of E. $\frac{1}{2}$	29	5	15	160
W. $\frac{1}{2}$	29	5	15	320
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	30	5	15	40
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	30	5	15	80
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	31	5	15	80
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	32	5	15	80
Total area				960

Tract No. 20 contains the McAlester coal, which lies nearly flat, at a depth of 800 to 1,000 feet.

TRACT NO. 21.

	Sec- tion.	Town- ship north.	Range east.	Acres.
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	20	5	15	80
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	21	5	15	80
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$	27	5	15	80
All of	28	5	15	640
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	29	5	15	80
Total area				960

Only the McAlester coal is accessible in this tract, and dips at a low angle toward the west on the northwest side and toward the south on the southeast side, varying at angles of 10° to 15° . The coal in the north end is at an estimated depth of 800 to 1,000 feet.

TRACT NO. 22.

	Sec- tion.	Town- ship north.	Range east.	Acres.
N. $\frac{1}{2}$	2	5	15	314.56
S. $\frac{1}{2}$	2	5	15	320
S. $\frac{1}{2}$ of S. $\frac{1}{2}$	35	6	15	160
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	36	6	15	40
Total area				834.56
Occupied by railroad				13.37

This tract contains only the Hartshorne coal which is beneath the surface. The structure of the coal in this tract is undulating. On the south and west sides the dip is toward the west, while the east side is toward the east. On the north side it lies nearly flat. The leased lands separate the tract from the outcrop of the Hartshorne coal. The coal is estimated to be within a few hundred feet of the surface near the center of the south side of sec. 35, T. 6 N., R. 15 E.

TRACT NO. 23.

	Sec- tion.	Town- ship north.	Range east.	Acres.
<i>Lands outside of Alderson town site.</i>				
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	10	5	14	80
W. $\frac{1}{2}$ of W. $\frac{1}{2}$	11	5	14	160
N. $\frac{1}{2}$	14	5	14	320
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	14	5	14	40
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	14	5	14	20
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	15	5	14	80
Total				700
<i>Lands within Alderson town site.</i>				
[Only the deposits of coal or asphalt in or under the lands will be sold.]				
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	14	5	14	20
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	14	5	14	40
Total				60
Total area of tract				760

This tract contains only the Hartshorne coal, which dips toward the west and southwest at about 15° . The coal in the northeast corner of section 14 is estimated to be 600 feet beneath the surface. The leased lands separate this tract from the outcrop of the coal.

TRACT NO. 24.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	26	5	15	40
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	26	5	15	80
SW. $\frac{1}{4}$	26	5	15	160
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	26	5	15	40
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$	26	5	15	80
E. $\frac{1}{2}$	27	5	15	320
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	27	5	15	160
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	27	5	15	80
Total area				960

Only the McAlester coal is accessible in this tract and is estimated to be 1,000 to 1,200 feet beneath the surface in the northeastern part of section 26. The coal here dips toward the south about 15° .

TRACT NO. 25.

	Sec- tion.	Town- ship north.	Range east.	Acres.
E. $\frac{1}{2}$	25	5	15	320
SW. $\frac{1}{4}$	25	5	15	160
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	25	5	15	80
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	25	5	15	40
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	26	5	15	40
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	26	5	15	80
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	30	5	16	80
Lots 1, 2, 3, and 4	30	5	16	158.96
Total area				958.96

This tract contains the McAlester coal which occurs at approximately 1,000 to 1,200 feet beneath the surface in the north side. The dips are toward the south 10° to 15° .

TRACT NO. 26.

	Sec- tion.	Town- ship north.	Range east.	Acres.
E. $\frac{1}{2}$ of E. $\frac{1}{2}$	29	5	16	160
W. $\frac{1}{2}$	29	5	16	320
E. $\frac{1}{2}$	30	5	16	320
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	30	5	16	80
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	32	5	16	40
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	32	5	16	40
Total area				960

This tract contains the McAlester coal which occurs at approximately 1,000 feet beneath the surface in the north side. Dips are toward the south 10° to 15° in the northern part, becoming lower in the southern part.

TRACT NO. 27.

	Sec- tion.	Town- ship north.	Range east.	Acres.
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	27	5	16	80
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	28	5	16	40
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	28	5	16	40
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	28	5	16	80
SW. $\frac{1}{4}$	28	5	16	160
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	28	5	16	80
E. $\frac{1}{2}$ of E. $\frac{1}{2}$	29	5	16	160
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	32	5	16	80
N. $\frac{1}{2}$ of N. $\frac{1}{2}$	33	5	16	160
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	34	5	16	80
Total area				960

Tract No. 27 contains the McAlester coal, which occurs at approximately 900 feet beneath the surface in the northeast side. It dips toward the southwest 10° to 15° .

	Sec- tion.	Town- ship north.	Range east.	Acres.
Lots 1 and 2.....	3	4	16	80. 83
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	3	4	16	80
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	33	5	16	160
N. $\frac{1}{2}$ of S. $\frac{1}{2}$	33	5	16	160
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	33	5	16	80
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	34	5	16	80
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	34	5	16	40
SW. $\frac{1}{4}$	34	5	16	160
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	34	5	16	80
Total area.....				920. 83
Occupied by railroad.....				21. 55

This tract contains the McAlester coal which crops out across the extreme east end, dipping toward the northwest about 15°. The dip gradually decreases toward the west, and the coal is at a depth of approximately 1,700 feet at the west end. The Hartshorne coal is estimated to be about 1,000 feet beneath the surface at the extreme southeast corner of this tract in the SE. $\frac{1}{4}$ of the NE. $\frac{1}{4}$ of section 3. The tract contains approximately 840 acres of McAlester coal, and is entirely underlain by the Hartshorne coal.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	8	5	16	40
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	9	5	16	160
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	10	5	16	160
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	11	5	16	160
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	12	5	16	160
Lot 1.....	7	5	17	39. 30
Total area.....				719. 30
Occupied by railroad.....				2. 07

Tract 29 contains the Hartshorne coal which crops out through its entire length of 4½ miles. The coal dips steeply toward the north and can be mined successfully only by slopes from the outcrop. A little less than one-half of this tract contains no coal.

	Sec- tion.	Town- ship north.	Range east.	Acres.
Lot 2.....	3	5	16	39. 53
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	3	5	16	40
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	3	5	16	80
SW. $\frac{1}{4}$	3	5	16	160
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	3	5	16	80
Lots 3 and 4.....	3	5	16	79. 29
Lots 1 and 2.....	4	5	16	79. 40
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	4	5	16	80
SE. $\frac{1}{4}$	4	5	16	160
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	33	6	16	40
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	34	6	16	40
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	34	6	16	80
Total area.....				958. 22
Occupied by railroad.....				15. 30

Both the Hartshorne and McAlester coals occur in this tract. Only the McAlester coal is accessible, which crops out along the extreme southern border dipping toward the north about 20°. The dip gradually decreases toward the north and the coal is at a depth of approximately 1,500 feet at the northern border. The entire area of this tract contains coal.

	Sec- tion.	Town- ship north.	Range east.	Acres.
Lots 1, 2, 3, and 4.....	2	5	16	158. 64
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	2	5	16	160
S. $\frac{1}{2}$	2	5	16	320
Lot 1.....	3	5	16	39. 46
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	3	5	16	40
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	3	5	16	80
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	34	6	16	40
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	35	6	16	80
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	35	6	16	40
Total area.....				958. 10
Occupied by railroad.....				15. 30

This tract contains both the Hartshorne and McAlester coals, which occur under practically the same conditions as in tract 30. The entire area of this tract contains coal.

TRACT NO. 32.

	Sec- tion.	Town- ship north.	Range east.	Acres.
Lots 1, 2, 3, and 4	1	5	16	159.80
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	1	5	16	160
S. $\frac{1}{2}$	1	5	16	320
Lots 5, 6, and 7	6	5	17	114.70
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	35	6	16	40
S. $\frac{1}{2}$ of S. $\frac{1}{2}$	36	6	16	160
Total area				954.50
Occupied by railroad				20.35

This tract contains both the Hartshorne and McAlester coals, which occur under practically the same conditions as in tracts 30 and 31. The entire area of this tract contains coal.

TRACT NO. 33.

	Sec- tion.	Town- ship north.	Range east.	Acres.
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	5	5	17	80
Lots 1, 2, 3, and 4	6	5	17	159.23
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	6	5	17	80
SE. $\frac{1}{4}$	6	5	17	160
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	6	5	17	80
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	6	5	17	40
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	7	5	17	80
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	7	5	17	40
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	8	5	17	40
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	31	6	17	80
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	31	6	17	40
Lot 4	31	6	17	36.66
Total area				915.89
Occupied by railroad				22.83

Both the Hartshorne and McAlester coals are accessible in this tract, the former outcropping very near the southeastern corner and the latter nearly one-third of a mile farther north. The dip of the Hartshorne coal at the outcrop is 30° to 35° toward the north, while that of the McAlester is about 20° . In each case the dip decreases toward the north to about 10° on the northern border of the tract where the McAlester coal is about 1,500 feet below the level of its outcrop. All of the tract contains Hartshorne coal, while the area of the McAlester is about 750 acres.

TRACT NO. 34.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	4	5	17	40
Lots 1, 2, 3, and 4	5	5	17	165.72
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	5	5	17	80
SE. $\frac{1}{4}$	5	5	17	160
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	5	5	17	80
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	5	5	17	80
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	8	5	17	80
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	8	5	17	40
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	9	5	17	40
S. $\frac{1}{2}$ of S. $\frac{1}{2}$	32	6	17	160
Total area				925.72
Occupied by railroad				20.33

Both the Hartshorne and McAlester coals are accessible in this tract and occur under practically the same conditions of structure as in tract 33. All of the tract contains Hartshorne coal, while the area of the McAlester coal is about 760 acres.

TRACT NO. 35.

	Sec- tion.	Town- ship north.	Range east.	Acres.
Lots 1, 2, 3, and 4	4	5	17	165.80
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	4	5	17	80
SE. $\frac{1}{4}$	4	5	17	160
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	4	5	17	80
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	4	5	17	40
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	4	5	17	80
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	9	5	17	80
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	9	5	17	40
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	10	5	17	40
S. $\frac{1}{2}$ of S. $\frac{1}{2}$	33	6	17	160
Total area				925.80
Occupied by railroad				17.09

Both the Hartshorne and McAlester coals are accessible in this tract and occur under practically the same conditions of structure as in tracts 33 and 34. The area of the Hartshorne coal is approximately 900 acres, while that of the McAlester is about 760 acres.

TRACT NO. 36.

	Sec- tion.	Town- ship north.	Range east.	Acres.
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	2	5	17	80
Lots 1, 2, 3, and 4	3	5	17	163.80
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	3	5	17	160
S. $\frac{1}{2}$	3	5	17	320
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	10	5	17	40
S. $\frac{1}{2}$ of S. $\frac{1}{2}$	34	6	17	160
Total area				923.80
Occupied by railroad				29.52

Both the Hartshorne and McAlester coals are accessible in this tract, the former outcropping very near the southern border and the latter nearly one-third of a mile farther north. The dip of the Hartshorne coal is about 45° toward the north, while that of the McAlester is several degrees lower. In each case the dip decreases toward the north to about 10° on the northern border of the tract where the McAlester coal is about 1,500 feet below the level of its outcrop. The area of the Hartshorne coal is approximately 890 acres, while that of the McAlester is about 680 acres.

TRACT NO. 37.

	Sec- tion.	Town- ship north.	Range east.	Acres.
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	1	5	17	80
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	1	5	17	40
Lots 1, 2, 3, and 4	2	5	17	163
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	2	5	17	80
SE. $\frac{1}{4}$	2	5	17	160
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	2	5	17	80
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	2	5	17	80
SE. $\frac{1}{4}$	35	6	17	160
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	35	6	17	80
Total area				923
Occupied by railroad				12.21

Both the Hartshorne and McAlester coals are accessible in this tract and occur under practically the same conditions of structure as in tract 36. The area of the Hartshorne coal in this tract is approximately 860 acres, while that of the McAlester coal is about 650 acres. An eastward extension of a branch of the Missouri, Kansas and Texas Railway since the coal lands were surveyed covers an additional area of about 12 acres.

TRACT NO. 38.

	Sec- tion.	Town- ship north.	Range east.	Acres.
Lots 1, 2, 3, and 4	1	5	17	161.60
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	1	5	17	80
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	1	5	17	40
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	1	5	17	40
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	1	5	17	40
E. $\frac{1}{2}$	36	6	17	320
SW. $\frac{1}{4}$	36	6	17	160
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	36	6	17	80
Total area				921.60
Occupied by railroad				9.81

Both the Hartshorne and McAlester coals are accessible in this tract and occur under practically the same conditions of structure as in tracts 36 and 37. The area of the Hartshorne coal is approximately 860 acres, while that of the McAlester coal is about 700 acres. An eastward extension of the Missouri, Kansas and Texas Railway across this tract since the coal lands were surveyed covers an additional area of approximately 10 acres.

TRACT NO. 39.

	Sec- tion.	Town- ship north.	Range east.	Acres.
<i>Lands outside of McAlester town site.</i>				
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	25	6	14	80
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	25	6	14	40
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	25	6	14	80
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	26	6	14	80
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	26	6	14	40
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	33	6	14	40
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	34	6	14	80
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	34	6	14	40
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	34	6	14	80
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	34	6	14	80
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	34	6	14	40
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	35	6	14	40
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	35	6	14	40
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	35	6	14	80
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	30	6	15	5
N. $\frac{1}{2}$ of lot 3	30	6	15	20.46
Total				865.46

TRACT NO. 39—Continued.

	Sec- tion.	Town- ship north.	Range east.	Acres.
<i>Lands within McAlester town site.</i>				
[Only the deposits of coal or asphalt in or under the lands will be sold.]				
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	30	6	15	20
E. $\frac{1}{2}$ of W. $\frac{1}{2}$ of NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	30	6	15	10
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	30	6	15	5
S. $\frac{1}{2}$ of lot 3	30	6	15	20.46
Total				55.46
Total area of tract				920.92
Occupied by cemetery				5
[Only the deposits of coal or asphalt in or under the lands will be sold.]				
Occupied by city water main				1.44

This tract contains both the Hartshorne and McAlester coals. The McAlester coal crops out in the north side from the middle of the east side of sec. 33, T. 6 N., R. 14 E., eastward to a point approximately 1,000 feet south of the center of sec. 30, T. 6 N., R. 15 E. Throughout its occurrence the McAlester coal dips steeply toward the north and can be mined successfully only by sloping.

The Hartshorne coal occurs only in the N. $\frac{1}{2}$ of the SE. $\frac{1}{4}$ of sec. 34 and the NW. $\frac{1}{4}$ of the SW. $\frac{1}{4}$ of sec. 35, T. 6 N., R. 14 E., where it dips 30° to 40° toward the south. About 240 acres of this tract contains no coal. The area of the McAlester coal in this tract is about 620 acres, while that of the Hartshorne is about 50 acres. The Hartshorne coal in this tract is represented by two workable beds of coal of nearly equal grade, 40 to 50 feet apart.

TRACT NO. 40.

	Sec- tion.	Town- ship north.	Range east.	Acres.
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	29	6	15	80
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	29	6	15	40
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	29	6	15	40
Total area				160

Only the McAlester coal is accessible in this tract. It crops out across the southwest side, dipping steeply toward the northeast. Approximately 20 acres of this tract contain no coal.

TRACT NO. 41.

	Sec- tion.	Town- ship north.	Range east.	Acres.
S. $\frac{1}{2}$ of S. $\frac{1}{2}$	25	6	15	160
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	26	6	15	80
N. $\frac{1}{2}$ of N. $\frac{1}{2}$	34	6	15	160
N. $\frac{1}{2}$	35	6	15	320
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	36	6	15	40
NW. $\frac{1}{4}$	36	6	15	160
Total area				920

Only the McAlester coal comes to the surface in tract 41. It crops out in an east-west direction across near the center of the N. $\frac{1}{2}$ of secs. 34, 35, 36, T. 6 N., R. 15 E. The dip of the coal is steeper toward the north, and it is believed that it can be mined successfully only by sloping. Approximately 260 acres of this tract contain no coal. It is possible that the Hartshorne coal may be accessible near the southern border of the tract at a depth of 600 to 800 feet.

TRACT NO. 42.

	Sec- tion.	Town- ship north.	Range east.	Acres.
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	36	6	15	80
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	29	6	16	80
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	29	6	16	40
SE. $\frac{1}{4}$	30	6	16	160
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	30	6	16	80
Lots 3 and 4	30	6	16	81.15
E. $\frac{1}{2}$	31	6	16	320
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	31	6	16	40
Lot 1	31	6	16	40.71
Total area				921.86

Only the McAlester coal is accessible in this tract. It crops out in the NE. $\frac{1}{4}$ of sec. 26, dipping toward the northeast at relatively low angles. It is estimated that the coal is at a depth of 700 feet at the southwest corner of the SE. $\frac{1}{4}$ of sec. 31. At this locality the dip of the coal is toward the east. In the northeast corner the coal is at a

depth of about 1,500 feet. In the SE. $\frac{1}{4}$ of the NE. $\frac{1}{4}$ of sec. 36, T. 6 N., R. 15 E., the Hartshorne coal is at a depth of 1,100 to 1,300 feet. The tract contains approximately 890 acres of McAlester coal.

TRACT NO. 43.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SW. $\frac{1}{4}$	4	5	16	160
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	4	5	16	80
Lots 3 and 4	4	5	16	79.32
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	29	6	16	40
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	32	6	16	40
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$ and N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	32	6	16	160
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	32	6	16	80
NW. $\frac{1}{4}$	32	6	16	160
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	33	6	16	80
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	33	6	16	40
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	33	6	16	40
Total area				959.32

Only the McAlester coal is accessible in this tract. It crops out in the extreme south side of section 4, dipping toward the north at about 20°. The dip of the coal decreases gradually toward the north until it reaches a depth of 1,500 to 1,700 feet in the northeastern part of the tract. Dips in the northwestern part of the tract are toward the northeast.

DESCRIPTION OF TRACTS, SOUTHERN MAP SHEET.

TRACT NO. 44.

	Sec- tion.	Town- ship north.	Range east.	Acres.
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	19	2	13	80
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	20	2	13	40
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	29	2	13	40
NE. $\frac{1}{4}$	30	2	13	160
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	30	2	13	40
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	30	2	13	80
Lots 3 and 4	30	2	13	69.32
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	30	2	13	80
Lot 2	30	2	13	34.54
Lot 1	31	2	13	34.90
Total area				658.76

This tract should contain both the Hartshorne and McAlester coals. The coal beds crop out in a northeast-southwest direction, dipping northwest 60° to 80°. The dips decrease slightly toward the northwest, but not sufficiently to warrant mining, except by slope, upon the crop of the coal. The depth of the McAlester coal beneath the surface in the northwest side of the tract is approximately 1,500 feet. The outcrops of the beds are separated by about one-fourth of a mile. The tract contains about 650 acres of Hartshorne coal and 350 acres of the McAlester coal.

TRACT NO. 45.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	16	2	13	40
SW. $\frac{1}{4}$	16	2	13	160
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	16	2	13	80
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	17	2	13	40
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	17	2	13	80
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	17	2	13	40
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	19	2	13	40
NE. $\frac{1}{4}$	20	2	13	160
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	20	2	13	40
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	20	2	13	80
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	20	2	13	40
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	20	2	13	80
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	20	2	13	40
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	21	2	13	40
Total area				960
Occupied by railroad				45.80

This tract should contain both the Hartshorne and McAlester coals, which occur under practically the same conditions as in tract No. 44. The area of the former coal in this tract is 840 acres, and of the latter 560 acres.

	Sec- tion.	Town- Ship north.	Range east.	Acres.
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	3	2	13	80
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	4	2	13	80
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	4	2	13	40
E. $\frac{1}{2}$	9	2	13	320
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	9	2	13	80
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	9	2	13	40
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	9	2	13	40
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	10	2	13	40
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$	10	2	13	80
N. $\frac{1}{2}$ of N. $\frac{1}{2}$	16	2	13	160
Total area				960
Occupied by railroad				40.30

This tract should contain both the Hartshorne and McAlester coals, which occur under practically the same conditions of structure as in tracts 44 and 45. The area of the Hartshorne coal is approximately 820 acres, while that of the McAlester is about 500 acres.

	Sec- tion.	Town- Ship north.	Range east.	Acres.
Lot 2	3	2	13	39.80
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	3	2	13	40
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	3	2	13	80
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	3	2	13	80
Lots 3 and 4	3	2	13	79.90
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	4	2	13	40
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	27	3	13	40
E. $\frac{1}{2}$	34	3	13	320
SW. $\frac{1}{4}$	34	3	13	160
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	34	3	13	40
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	35	3	13	40
Total area				959.78
Occupied by railroad				89.60

This tract should contain both the Hartshorne and McAlester coals, which occur under practically the same conditions of structure as in tracts 44, 45, and 46. The area of the Hartshorne coal in the tract is approximately 900 acres, and that of the McAlester about 675 acres.

	Sec- tion.	Town- Ship north.	Range east.	Acres.
E. $\frac{1}{2}$	26	3	13	320
SW. $\frac{1}{4}$	26	3	13	160
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	26	3	13	40
NE. $\frac{1}{4}$	35	3	13	160
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	35	3	13	40
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	35	3	13	80
NW. $\frac{1}{4}$	35	3	13	160
Total area				960
Occupied by railroad				17.95

This tract contains both the Hartshorne and McAlester coals, the former dipping at from 60° to 80° at the outcrop, and the latter about 40°. The dips decrease toward the northwest, reaching finally about 30° at the northwest border, where the McAlester coal is 1,500 to 1,700 feet beneath the surface. The areas of these coals in the tract are approximately 920 and 660 acres, respectively.

	Sec- tion.	Town- Ship north.	Range east.	Acres.
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	23	3	13	40
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	24	3	13	40
SW. $\frac{1}{4}$	24	3	13	160
NE. $\frac{1}{4}$	25	3	13	160
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	25	3	13	80
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	25	3	13	40
W. $\frac{1}{2}$	25	3	13	320
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	36	3	13	40
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	30	3	14	40
Lot 1	30	3	14	39.46
Total area				959.46
Occupied by railroad				18.47

The Hartshorne and McAlester coals in this tract occur under practically the same conditions of structure as in tract 48. The area of the Hartshorne coal is about 830 acres, and that of the McAlester coal 530 acres.

TRACT NO. 50, PARCEL 1.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	13	3	13	40
SE. $\frac{1}{4}$	18	3	14	160
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	18	3	14	40
Lot 4	18	3	14	39.05
Area of parcel				279.05

Only the McAlester coal is accessible in this parcel, which is separated from the outcrop of the coal by leased lands. The coal near the outcrop here is about 3 feet 2 inches thick and of the usual good grade.

TRACT NO. 50, PARCEL 2.

	Sec- tion.	Town- ship north.	Range east.	Acres.
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	20	3	14	40
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	20	3	14	40
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	20	3	14	80
Area of parcel				160
Occupied by railroad				1.01

This parcel contains only the Hartshorne coal, which crops out across the southwest side, dipping toward the northwest 60° to 80° . It contains approximately 120 acres of coal.

TRACT NO. 50, PARCEL 3.

	Sec- tion.	Town- ship north.	Range east.	Acres.
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	21	3	14	80

Only the Hartshorne coal occurs in this parcel and under practically the same conditions of structure as in parcel 2. It has an area of available coal of about 40 acres.

Total area of tract No. 50 is 519.05 acres.

TRACT NO. 51.

	Sec- tion.	Town- ship north.	Range east.	Acres.
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	9	3	14	80
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	10	3	14	40
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	15	3	14	40
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$	15	3	14	80
N. $\frac{1}{2}$	16	3	14	320
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	17	3	14	80
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	17	3	14	40
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	17	3	14	40
Total area				720
Occupied by railroad				3.39

Only the McAlester coal is easily accessible in this tract. It crops out across the southeast corner through a distance of about one-fourth of a mile, dipping toward the northwest at 25° to 30° . The dip gradually decreases to about 10° at the northwest side, where the coal is 1,500 to 1,700 feet beneath the surface. The tract contains about 690 acres of coal. The Hartshorne coal is at a depth of 800 to 1,000 feet in the southeast corner of the tract.

TRACT NO. 52.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	10	3	14	40
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	10	3	14	80
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	10	3	14	80
NE. $\frac{1}{4}$	15	3	14	160
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	15	3	14	40
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	15	3	14	80
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	15	3	14	160
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	15	3	14	40
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	16	3	14	80
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	21	3	14	80
Total area				840
Occupied by railroad				10.19

Tract 52 contains the Hartshorne and McAlester coals. The former crops across the southeast side dipping toward the northwest at 40° to 80° . The dips decrease toward the northwest side, finally reaching about 10° in the north side. The McAlester coal crops out across the center of the tract dipping toward the northwest 25° to 30° . It

decreases in slope toward the northwest at the same rate as the Hartshorne coal below.

TRACT NO. 53.

	Sec- tion.	Town- ship north.	Range east.	Acres.
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	10	3	14	40
NE. $\frac{1}{4}$	11	3	14	160
S. $\frac{1}{2}$	11	3	14	320
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	11	3	14	80
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	12	3	14	40
N. $\frac{1}{2}$ of N. $\frac{1}{2}$	14	3	14	160
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	14	3	14	40
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	14	3	14	40
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	14	3	14	80
Total area				960
Occupied by railroad				13.60

This tract contains both the Hartshorne and McAlester coals, the outcrops of which are separated by about one-third of a mile. The dip of the Hartshorne coal at the outcrop is about 40° , while that of the McAlester is about 30° . The dips decrease toward the northwest, reaching about 10° at the limit of the tract, where the McAlester coal is 1,500 to 1,700 feet beneath the surface. The areas of the two coals are approximately 900 and 600 acres, respectively.

TRACT NO. 54.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SE. $\frac{1}{4}$	1	3	14	160
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	1	3	14	80
N. $\frac{1}{2}$	12	3	14	320
N. $\frac{1}{2}$ of S. $\frac{1}{2}$	12	3	14	160
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	12	3	14	40
Lots 5, 6, and 7	6	3	15	108.02
Lots 1 and 2	7	3	15	73.10
Total area				941.12
Occupied by railroad				25.19

The occurrence and conditions of structure of the Hartshorne and McAlester coals in this tract are practically the same as are found in tract 52. The areas of coal for the two beds are approximately 900 and 720 acres, respectively.

TRACT NO. 55.

	Sec- tion.	Town- ship north.	Range east.	Acres.
Lot 4	5	3	15	40.43
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	5	3	15	40
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	5	3	15	80
Lots 1 and 2	6	3	15	80.49
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	6	3	15	80
SE. $\frac{1}{4}$	6	3	15	160
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	6	3	15	80
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	6	3	15	40
Lot 3	6	3	15	40.12
NE. $\frac{1}{4}$	7	3	15	160
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	7	3	15	80
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	8	3	15	40
Total area				921.04
Occupied by railroad				15.46

Tract No. 55 contains both the Hartshorne and McAlester coals, and their outcrops are separated by about half a mile, the former being along the extreme southern border of the tract. Both coals dip toward the northwest at 30° to 40° . The McAlester coal reaches a depth of 1,500 to 1,700 feet in the northwest corner of the tract. The Hartshorne coal in this tract and elsewhere in the district can be found about 1,300 feet beneath the McAlester. The area of the Hartshorne coal is approximately 880 acres, while the McAlester coal is about 520 acres.

TRACT NO. 56.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	4	3	15	40
Lots 2, 3, and 4	4	3	15	123.07
Lots 1, 2, and 3	5	3	15	122.37
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	5	3	15	80
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	5	3	15	80
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	5	3	15	80
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	5	3	15	40
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	32	4	15	40
SE. $\frac{1}{4}$	32	4	15	160
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	32	4	15	80
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	33	4	15	80
Total area				925.44
Occupied by railroad				25.08

Tract No. 56 contains both the Hartshorne and McAlester coals, which occur under practically the same conditions of structure as in tract 55. Their areas in the tract are approximately 850 acres and 380 acres, respectively.

TRACT NO. 57.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SW. $\frac{1}{4}$	27	4	15	160
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	28	4	15	40
E. $\frac{1}{2}$	33	4	15	320
E. $\frac{1}{2}$ of W. $\frac{1}{2}$	33	4	15	160
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	33	4	15	40
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	34	4	15	80
NW. $\frac{1}{4}$	34	4	15	160
Total area.....				960
Occupied by railroad.....				18.81

This tract contains both the Hartshorne and McAlester coals, which occur under practically the same conditions of structure as in tracts 55 and 56. Their areas in this tract are approximately 930 acres and 490 acres, respectively.

TRACT NO. 58.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	23	4	15	40
W. $\frac{1}{2}$ of NE. $\frac{1}{4}$	26	4	15	80
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	26	4	15	40
W. $\frac{1}{2}$	26	4	15	320
NE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	27	4	15	40
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	27	4	15	80
SE. $\frac{1}{4}$	27	4	15	160
NE. $\frac{1}{4}$	34	4	15	160
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	35	4	15	40
Total area.....				960
Occupied by railroad.....				18.04

This tract contains both the Hartshorne and McAlester coals, which occur under practically the same conditions of structure as in tracts 55, 56, and 57. Their areas in this tract are about 900 and 460 acres, respectively.

TRACT NO. 59.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	13	4	15	40
SE. $\frac{1}{4}$	23	4	15	160
E. $\frac{1}{2}$	24	4	15	320
SW. $\frac{1}{4}$	24	4	15	160
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	24	4	15	80
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	24	4	15	40
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	25	4	15	80
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	26	4	15	80
Total area.....				960
Occupied by railroad.....				17.65

This tract contains both the Hartshorne and McAlester coals, which occur under practically the same conditions as in tracts 56, 57, and 58, except in the SE. $\frac{1}{4}$ of sec. 24, where a local basin occurs. In the south side of the quarter section the Hartshorne coal dips toward the northwest about 35° . Near the center of the quarter section it rises toward the surface and again descends toward the northwest. The Hartshorne coal which outcrops very near and parallel to the railroad, dips toward the northwest 30° to 40° . The dips decrease slightly toward the northwest until the coal reaches a depth of 1,500 to 1,700 feet at the border of the tract. The area of the Hartshorne coal is approximately 920 acres, while that of the McAlester coal is about 660 acres.

TRACT NO. 60.

	Sec- tion.	Town- ship north.	Range east.	Acres.
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	8	3	13	80
SW. $\frac{1}{4}$	9	3	13	160
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	9	3	13	80
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	16	3	13	80
NW. $\frac{1}{4}$	16	3	13	160
E. $\frac{1}{2}$	17	3	13	320
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	17	3	13	40
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	17	3	13	40
Total area.....				960

Tract No. 60 lies across an upward fold in the rocks. It is considered that the tract contains the McAlester coal, which outcrops in the form of a curve in the northeastern part of the tract. The coal dips toward the northwest on the northwest side, toward the southwest on the southwest side, and toward the south in the south side. The dips are relatively steep in the northwestern and southern parts of the tract, while in the central southwestern parts they are much lower. The tract contains an estimated area of 880 acres of the McAlester coal. The Hartshorne coal lies beneath the tract but is beyond the depth of practical mining.

TRACT NO. 61.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	4	3	13	40
E. $\frac{1}{2}$	9	3	13	320
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	9	3	13	40
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	10	3	13	80
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	10	3	13	40
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	10	3	13	80
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	15	3	13	80
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	15	3	13	40
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	16	3	13	40
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	16	3	13	40
NE. $\frac{1}{4}$	16	3	13	160
Total area				960

It is considered that both the Hartshorne and McAlester coals occur in this tract. The McAlester coal crops out in a northeast-southwest direction across the center of the NE. $\frac{1}{4}$ of sec. 9, dipping toward the northwest. The same coal occurs upon the southeast side of the upward fold cropping out in a northeast-southwest direction very near the southwest corner of section 10, dipping toward the south. The Hartshorne coal, it is believed, occurs near the center of section 10, pitching toward the southwest at about 10°. It has been prospected in the SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$ of this section. The thickness and quality of the coal could not be determined at the time examinations were made. The area of the Hartshorne coal is approximately 930 acres, while that of the McAlester is about 520 acres.

TRACT NO. 62.

	Sec- tion.	Town- ship north.	Range east.	Acres.
Lot 2	2	3	13	39.03
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	2	3	13	40
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	2	3	13	80
Lots 3 and 4	2	3	13	78.60
Lot 1	3	3	13	39.41
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	3	3	13	80
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	3	3	13	80
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	3	3	13	40
SW. $\frac{1}{4}$	3	3	13	160
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	4	3	13	40
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	10	3	13	80
W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	35	4	13	80
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	35	4	13	80
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	35	4	13	40
Total area				957.04

It is estimated that this tract contains both the Hartshorne and McAlester coals, cropping out in a northeast-southwest direction. The outcrop of the former is very near the southeast side, while that of the latter is nearly across the center of the tract. The dips are toward the northwest at 25° to 50°. The areas of the two coals in the tract are approximately 900 acres and 630 acres, respectively.

TRACT NO. 63.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	2	3	13	40
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	10	3	13	80
SE. $\frac{1}{4}$	10	3	13	160
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	10	3	13	40
N. $\frac{1}{2}$	11	3	13	320
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	11	3	13	40
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	11	3	13	40
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	11	3	13	80
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	15	3	13	40
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	15	3	13	40
Total area				880

It is believed that tract 63 contains both the Hartshorne and McAlester coals, dipping toward the southeast. The outcrop of the Harts-

horne coal is along the northwest side, while that of the McAlester is about one-quarter of a mile distant toward the southeast. The areas of the two coals in the tract are about 820 acres and 620 acres, respectively.

TRACT NO. 64.

	Sec- tion.	Town- ship north.	Range east.	Acres.
Lot 1	2	3	13	38.85
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	25	4	13	80
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	25	4	13	40
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	25	4	13	40
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	35	4	13	40
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	35	4	13	80
N. $\frac{1}{2}$	36	4	13	320
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	36	4	13	40
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	36	4	13	80
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	30	4	14	80
Lots 3 and 4	30	4	14	75.22
Lot 1	31	4	14	37.53
Total area				951.60
Occupied by railroad				26.88

This tract contains both the Hartshorne and McAlester coals, which occur under practically the same conditions of structure as in tract 62. Their areas in this tract are about 800 acres and 375 acres, respectively.

TRACT NO. 65.

	Sec- tion.	Town- ship north.	Range east.	Acres.
Lot 1	1	3	13	39.85
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	1	3	13	80
S. $\frac{1}{2}$	1	3	13	320
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	1	3	13	40
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	2	3	13	80
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	12	3	13	40
NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	12	3	13	40
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$	12	3	13	80
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	6	3	14	40
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	6	3	14	40
Lots 4, 5, 6, and 7	6	3	14	152.20
Total area				952.05
Occupied by railroad				31.14

Tract 65 contains both the Hartshorne and McAlester coals, the former at its outcrop dipping 70° to 80° and the latter about 30° toward the southeast. Their areas in the tract are approximately 900 acres and 550 acres, respectively. The dips decrease toward the southeast, reaching about 20° at the southeastern border, where the McAlester coal is estimated to be 1,500 to 1,700 feet beneath the surface. The Hartshorne coal has been prospected in the NE. $\frac{1}{4}$ of sec. 1.

TRACT NO. 66.

	Sec- tion.	Town- ship north.	Range east.	Acres.
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	17	4	14	40
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$	17	4	14	80
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	17	4	14	40
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	19	4	14	40
E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	19	4	14	80
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	19	4	14	40
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	20	4	14	80
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	20	4	14	40
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	20	4	14	40
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	20	4	14	80
NW. $\frac{1}{4}$	20	4	14	160
NE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	30	4	14	40
W. $\frac{1}{2}$ of NE. $\frac{1}{4}$	30	4	14	80
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	30	4	14	80
Lot 2	30	4	14	37.74
Total area				957.74
Occupied by railroad				54.22

Tract 66 contains both the Hartshorne and McAlester coals, which dip toward the northwest 40° to 60° . The area of McAlester coal in the tract was originally about 830 acres. Mines located on it very near the southeast end of the tract and operated a few years, beginning about 1897, removed a small area of coal. The Hartshorne coal has not been mined.

	Sec- tion.	Town- ship north.	Range east.	Acres.
Lots 1, 2, and 3	6	3	14	120
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	6	3	14	40
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	29	4	14	80
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	29	4	14	40
NE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	31	4	14	40
S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	31	4	14	80
SE. $\frac{1}{4}$	31	4	14	160
E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	31	4	14	80
Lot 4	31	4	14	37.59
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	32	4	14	40
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	32	4	14	40
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	32	4	14	80
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	32	4	14	80
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	32	4	14	40
Total area				957.59

This tract contains both the Hartshorne and McAlester coals which dip toward the southeast at their outcrops from 40° to 70° . The dips decrease toward the southeast, reaching about 20° to 30° at the border of the tract. The outcrops of the two coals are separated by about one-fourth of a mile, that of the Hartshorne being near the northwest border. The area of the Hartshorne coal is estimated to be 830 acres and that of the McAlester about 460 acres.

	Sec- tion.	Town- ship north.	Range east.	Acres.
E. $\frac{1}{2}$	21	4	14	320
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	21	4	14	40
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	22	4	14	80
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	22	4	14	40
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	22	4	14	80
NW. $\frac{1}{4}$	22	4	14	160
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	28	4	14	40
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	28	4	14	40
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	28	4	14	40
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	28	4	14	40
Total area				880

This tract contains both the Hartshorne and McAlester coals, which occur under practically the same conditions as in tract 67. The coal beds dip toward the southeast and have areas of approximately 820 acres and 720 acres, respectively.

	Sec- tion.	Town- ship north.	Range east.	Acres.
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	14	4	14	40
W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	14	4	14	80
S. $\frac{1}{2}$	15	4	14	320
W. $\frac{1}{2}$ of NW. $\frac{1}{4}$	15	4	14	80
NE. $\frac{1}{4}$	16	4	14	160
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	16	4	14	80
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	16	4	14	40
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	16	4	14	40
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	16	4	14	80
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	16	4	14	40
Total area				960

Tract 69 lies across an upward fold in the rocks which pitches toward the northeast. The tract contains both the Hartshorne and McAlester coals. The McAlester coal crops out in a northeast-southwest direction across and near the middle of the SW. $\frac{1}{4}$ of sec. 15, dipping toward the southeast, and attains a depth of approximately 1,200 feet at the extreme eastern border of the tract. From the line of outcrop, above named, toward the northwest the McAlester coal does not occur in this tract. It is estimated that the Hartshorne coal outcrops in the curve conforming nearly to the boundary of the tract in the south side of section 16. The dips are toward the northwest, northeast, and east around this curve. The area of the Hartshorne coal is approximately 945 acres, and that of the McAlester about 340 acres. Considerable mining by stripping has been done on the McAlester coal, but no record of the tonnage removed is now available.

TRACT NO. 70.

	Sec- tion.	Town- ship north.	Range east.	Acres.
<i>Lands outside of Savanna town site.</i>				
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	9	4	14	40
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	9	4	14	20
S. $\frac{1}{2}$ of SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	9	4	14	20
SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	9	4	14	10
NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	9	4	14	10
N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	16	4	14	80
SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	4	4	14	40
Total				220
<i>Lands within Savanna town site.</i>				
[Only the deposits of coal or asphalt in or under the lands will be sold.]				
W. $\frac{1}{2}$ of NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	9	4	14	20
N. $\frac{1}{2}$ of SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	9	4	14	20
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	9	4	14	10
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	9	4	14	20
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	9	4	14	20
SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	9	4	14	10
Total				100
Total area of tract				320
Occupied by railroad				14.23

Only the McAlester coal is available in this tract. The coal crops out across the extreme southeast corner, dipping toward the northwest at about 30° . The coal reaches a depth of about 1,500 feet in the northwest corner of the tract. Some of the coal of this tract has been removed by mines located near the southeast corner, but no record of the tonnage is now available.

TRACT NO. 71.

	Sec- tion.	Town- ship north.	Range east.	Acres.
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	10	4	14	40
SE. $\frac{1}{4}$	11	4	14	160
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	11	4	14	80
NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	11	4	14	40
SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	12	4	14	40
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	12	4	14	80
N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	14	4	14	80
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	14	4	14	40
NW. $\frac{1}{4}$	14	4	14	160
NE. $\frac{1}{4}$	15	4	14	160
E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	15	4	14	80
Total area				960

Only the McAlester coal is available in this tract. It crops out in the extreme east end dipping toward the northeast and east. In the northeastern part the dips are toward the southeast about 15° and less, while in the southwestern part they are toward the northeast. The tract contains approximately 920 acres of coal.

TRACT NO. 72.

	Sec- tion.	Town- ship north.	Range east.	Acres.
S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	1	4	14	80
S. $\frac{1}{2}$ of S. $\frac{1}{2}$	2	4	14	160
SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	3	4	14	40
E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	10	4	14	80
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	10	4	14	40
N. $\frac{1}{2}$	11	4	14	320
NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	11	4	14	40
NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	12	4	14	40
NW. $\frac{1}{4}$	12	4	14	160
Total area				960

Only the McAlester coal is available in tract 72, and occurs at a depth of nearly 500 feet in the southeast corner, dipping toward the northeast at about 15° . In the eastern part the dips become southeasterly, and decrease to 5° and less where the coal reaches a depth of approximately 1,200 feet.

TRACT NO. 73.

	Sec- tion.	Town- ship north.	Range east.	Acres.
Lots 2, 3, and 4.....	2	4	14	127.87
SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	2	4	14	40
NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	2	4	14	40
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	2	4	14	80
S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	2	4	14	80
Lots 1, 2, 3, and 4.....	3	4	14	170
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	3	4	14	160
N. $\frac{1}{2}$ of S. $\frac{1}{2}$	3	4	14	160
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	4	4	14	40
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	4	4	14	40
Total area.....				937.87
Occupied by railroad.....				22.31

Only the McAlester coal is accessible in this tract. It lies in the northwest side of an upward fold. The coal is practically flat at the east end, but toward the west the dips increase to approximately 15° . At the east end the coal is estimated to be at a depth of 800 to 1,000 feet beneath the surface.

TRACT NO. 74.

	Sec- tion.	Town- ship north.	Range east.	Acres.
Lots 1, 2, 3, and 4.....	1	4	14	169.48
S. $\frac{1}{2}$ of N. $\frac{1}{2}$	1	4	14	160
SE. $\frac{1}{4}$	1	4	14	160
N. $\frac{1}{2}$ of SW. $\frac{1}{4}$	1	4	14	80
Lot 1.....	2	4	14	42.65
SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	2	4	14	40
NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	2	4	14	40
Lots 2, 3, 4, 5, and 6.....	6	4	15	189.20
SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	6	4	15	40
Total area.....				921.33

This tract lies on the southeast side of an upward fold and the coal is in a nearly flat position in the western part at an estimated depth of 800 to 1,000 feet. Toward the southeast the dips increase to probably 10° , where the coal attains a depth of approximately 1,200 feet. The Hartshorne coal is at too great a depth to be profitably mined in this tract at the present time.

DEPARTMENT OF THE INTERIOR,
OFFICE OF INDIAN AFFAIRS,
Washington, D. C., June 9, 1904.

Circular No. 1 of the coal and asphalt lands in the McAlester district (No. 1) is respectfully returned to the Secretary of the Interior, with recommendation that it be approved.

A. C. TONNER,
Acting Commissioner.

DEPARTMENT OF THE INTERIOR,
Washington, D. C., June 20, 1904.

Approved.

E. A. HITCHCOCK,
Secretary

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