OKLAHOMA GEOLOGICAL SURVEY
OPEN-FILE REPORT 2-2006

Oklahoma Asphaltic Deposits – Field Sheets and Map

("The Goodrich File")

Compiled by

Harold B. Goodrich
1943-1944

This document includes:

- a xerox copy of 107 Statewide Mineral Survey field sheets covering 18 counties from work done by the W.P.A. in 1935-1936, plus another sheet dated 1929.

Counties covered:			
	Atoka	Jefferson	McCurtain
	Carter	Johnston	Murray
	Coal	Kiowa	Ottawa
	Comanche	LeFlore	Pontotoc
	Craig	Love	Pushmataha
	Garvin	Marshall	Stephens

- a 1:500,000 map showing locations of asphaltic deposits.

The material was assembled by Harold Beach Goodrich (1870-1945) for an Oklahoma Geological Survey Open File Report that was never published.

See OFR 3-2006 and GM-8 for related information.

NOTE: The information below has been typed from handwritten comments found on the cover of the file folder.

ASPHALT & Liq. Asphalt - Compilation of field sheets

Complete File - These sheets (accd to field sheets) were made about 1936+. So they are later than Woodruffs report Asphalt deposits of Oklahoma 1934.

In 1939, Beach said in letter "we are preparing a short report on asphaltic occurrences etc".

In 1943 -1944, H B Goodrich prepared card file keyed to a base map of Oklahoma, 1:500,000 showing localities of asphaltic rocks.

Counties included

Atoka	3 sheets	Love Co.	3 sheets
Carter	12	Marshall	7 "
Coal	2	McCurtain	3 "
Comanche	24	Murray	9
Craig	1	Ottawa	13
Garvin	2	Pontotoc	8
Jefferson	9	Pushmataha	3
Johnston	13	Stephens	10
Kiowa	1		
Le Flore	2		

(signed) L Jordan 1963

Okla. Geol. Survey

ATOKA COUNTY ASPHALT

LOCATION	AMOUNT	F.S.#	BITUMEN	PENETRATION TEST	RESIDUE	MINERALS IDENTIFIED	USED FOR:
NE¼ NW¼ Sec.29-30-31-32 T1S-R12E	Water in test hole, can't measure	5-1	Practically none				Bitumen content entirely too low for any commercial purpose.
NW¼ NW¼ Sec.24-25-19-30 T1S-R14E	?	6-1	16.27%	Very low	Quartz sand	Asphalt Qtz.sand	Very excellent material for road topping. Could be used for building up other raw material with med. or high penetration test.
Center Sec. 22 T1S-R12E	Water in test hole	8-1	1.74%	High	90% qtz. sand 10% L.S.	Asphalt Quartz Limestone	Bitumen contest of this sample is quite low, but could be used to advantage if blended with material reported under our analysis No. 1211.

I wonder if this should be 24-25 1S-13E 19+30 1S-14E (JD 8/63)

Location of Pumroy Coal Mine in McGee Valley

ASPHALT

ATOKA COUNTY - Field Sheet No. 8 - 1 Sample

Location: Center of Section 22, T 1 S - R 12 E.

Accessibility: In the bed of Chickasaw Creek, which flows the year around. Overburden is about 10'. There are few roads in this area and they are passable in dry weather..

Quantity: The bed is about four feet thick, and carried small seams of asphalt.

Laboratory test:
Sample No. 8-1
Bitumen: 1.74%
Penetration test: High
Mineral residue: 90% quartz sand,
10% limestone
Minerals identified: Asphalt, Quartz, Limestone.

Recommendations: Bitumen content of this sample is quite low, but could be used to advantage if blended with material reported under our analysis No. 1211.

ASPHALT

ATOKA COUNTY - Field Sheet No. 5 - 1 Sample

Location: NE¼ of NW¼ Sec. 29, 30, 31, 32, T 1 S-R 12 E.
Has been worked but now abandoned.

Quantity: 24" thick dipping to about 40 degrees.

Accessibility: Overburden of about 4'. 50tons have been removed. Pit filled with water. Located on country road. State Highway 69 one mile west.

Laboratory test:
Sample No. 1
Bitumen: practically none

Recommendations: Bitumen content entirely too low for any commercial purpose.

ATOKA COUNTY - Field Sheet No. 6 - 1 Sample

Location: NW¼ of NW¼ - Sec. 24-25-19-30, T 1 S - R 14 E.
Has been worked but now abandoned.

Quantity: The bed runs due north for about 600' and then strikes due west for about 700'. Is from 5 to 8' thick, dipping off at about 28 degrees.

Accessibility: Located in rough country with few roads. Trucks may be used in fair weather. Located 12 miles from State Highway #69 and also M.K.&T. railroad.

Laboratory test:
Sample No. 1
Bitumen: 16.27
Penetration test: Very low
Mineral residue: Essentially quartz sand, asphalt.

Recommendations:
Very excellent material for road topping purposes. C
Could be used for building up other raw material with medium or high penetration test.

Carter, Oklahoma

CARTER COUNTY

Carter County

ASPHALT

COUNTY	LOCATION	AMOUNT	F.S.#	BITUMEN	PENETRATION TEST	RESIDUE	MINERALS IDENTIFIED	USED FOR:
Carter	SW¼ of SW¼ Sec. 24 T5S, R1E.	?	9-1	3.37%	Low	Asphaltic sand, 98% Quartz	Quartz Asphalt Oil	Excellent road topping when properly & sufficiently blended.
Carter	NW¼ NE¼ Sec. 26 T5S, R1E.	?	104-1	17.24%	Low	Asphaltic sand, 98% Quartz	Quartz Asphalt Oil	High oil content. Excellent base material for floor sweep.
Carter	Ditto	?	104-1 re-run	12.80%	Medium	98% quartz sand	Quartz Asphalt	Floor sweep, as is, or blended with sawdust, lubricating oil, limestone aggregate & small amount high Pen. test cut back refinery asphalt.
Carter	Ditto	?	104-2	5.84%	Very low	98% Qtz. sand	Quartz Asphalt	Road topping, needs to be blended with limestone aggregate & a proper amt. of high Pen. test cut back refinery asphalt.
Carter	SE¼ SW¼ Sec. 16 T4S-R1E	? (Personally selected by Mr. Dott)	109-1	9.60%	Very low	98% Qtz. sand 2% L.S.	Asphalt Quartz Limestone	1. Road topping. as is. 2. Excellent floor sweep, if mixed with lighter oil & saw dust.
Carter	Ditto	?	109-1 re-run	1.2%	High	Quartz sand	Oil Quartz	Bitumen content too low to be of commercial use
Carter	NW¼ SE¼ 21-4S-1E	?	113-1	9.65%	Very low	Quartz sand	Asphalt Quartz	1. Road topping, as is. 2. Floor sweep, if mixed with lighter oil & sawdust.

CARTER COUNTY ASPHALT

LOCATION	AMOUNT	F.S.#	BITUMEN	PENETRATION TEST	RESIDUE	MINERALS IDENTIFIED	USED FOR:
SE¼ NW¼ Sec. 21 T4S-R1E	?	113-2	13.40%	Low	Quartz sand	Asphalt Quartz	1. Road topping, as is. 2. If mixed with lighter oil and sawdust, good floor sweep.
NE¼ SE¼ Sec. 10 T5S-R1E	?	114-1 1st.	4.78%	Medium	Asphaltic sand 99% Quartz 1%	Quartz Asphalt Oil	Good for road topping, when properly & sufficiently blended.
Ditto	?	114-1 re-run	8.89%	Very low	Quartz sand 98%	Quartz Asphalt	High grade road topping material and needs to be blended with a proper amount of limestone aggregate and the proper amount of medium test cut back refinery asphalt to make an ideal road topping material.
NE¼ NE¼ Sec. 23 T5S-R1E.	?	115-1	7.93%	Very low	98% Qtz. sand	Quartz Asphalt	Ditto
NE¼ SE¼ Sec. 10 T5S,R1E.	?	264-1	6.00%	Low	85% Qtz. sand 15% L.S.	Asphalt Quartz Limestone	1. Road topping.
E½ of NE¼ Sec. 11 & SW¼ of NW¼ Sec. 12 T3S-R1W.	200,000 cu. yds.	125-1	10.7%	Medium	Quartz sand	Oil Asphalt Quartz	Excellent material, as is, for road topping purposes. Might be blended with a small amount of asphalt with low penetration test.
NE¼ of NE¼ Sec. 23 T5S-R1E	230 cu. yds.	7-1	3.24	Medium	Quartz sand	small oil Asphalt Quartz	fair material for road topping purposes.

CARTER COUNTY ASPHALT

LOCATION	AMOUNT	T.S.#	BITUMEN	PENETRATION TEST	MINERALS IDENTIFIED	RESIDUE	USED FOR:
NE¼ of SW¼ Sec. 19 T3S-R1E.	7100 cu. yds	127-1	5.16	Very low	Quartz Asphalt	quartz sand	Excellent for road topping but must be added to asphalt of same penetration test.
NW¼ Sec.11 T2S-R2W	2000 cu. yds	126-1	6.55	Medium	Oil Asphalt Quartz	Quartz sand	Excellent for road topping if blended with sufficient amount of high pen.test asphalt. Floor sweep base.
SW¼ NW¼ SW¼ Sec.9 T1S-R2W	10 tons	129-1	5.82%	Low	Asphalt Quartz Calcite	Quartz sand Limestone	1. Road topping.
SW¼ SW¼ NE¼ Sec.34 T1S-R2W.	350 cu.yds.	128-1	3.66%	High	Asphalt Oil Quartz	Quartz sand	1. Road topping, but must be mixed with sufficient quantity of low pen. test asphalt.
SE¼ SW¼ Sec. 35 T5S-R1E	130 cu. yds.	279-1	less than 1%				Too low for any commercial value at this time.
SE¼ SE¼ NE¼ Sec.18 T5S-R1W	2000 cu. yds	130-1					
SW¼ Sec.5 NW¼ Sec.8 T4S-R2W	200 cu. yds	293-1	3.48%	High	Oil Asphalt Quartz	Quartz sand	1. Road topping material, if mixed with higher pen.test asphalt. 2. Floor sweep base.
SE¼ Sec.19 SW¼ Sec.20 T4S-R2W	150 cu. yds.	294-1	neg.				Bitumen content too low for any practical purpose.
SW¼ Sec.20 T4S-R2W	5000 cu. yds.	295-					ditto

Carter County-Field Sheet No. 8 - 1 sample

Location: SW¼SW¼ Sec. 24, T5S, R1E. Owner - - - -

Quantity:-------Possibly 200 Yds. long and 50 yds. wide.

Accessibility---Overburden is about 1'. The mine is located 100 yds east of road and approx. 1600 cu. yds. of asphalt have been removed from it.

Laboratory test-

Sample #8-1
Asphalt 3.37%
Pen. test - low
Physical Characteristics: Asphaltic sand, 99% -Quartz,1%
Minerals identified: Quartz, Asphalt, Oil.
Recommendations: Excellent road topping when properly and sufficiently blended.

Carter County- Field Sheet No. 104 - 2 samples

Location:--------NW¼NE¼ Sec. 26, T5S, R1E. Owner - - - - -

Quantity:--------The laterial dimension possibly is extended for several 100' to the south east,

Accessibility----Overburden at these pits is practically zero. Thickness could not be determined.

Laboratory test--

Sample #104-1
Test No. 1
Asphalt 17.24%
Pen. test - low
Physical characteristics: Asphaltic sand, 98%-Quartz,2%
Minerals identified: Quartz, Asphalt, Oil.
Recommendations: High oil content. Excellent base material for floor sweep.

Test No. 2
Bitumen 12.80%
Pen. test. - Medium
Residue- 98% qtz sand
Minerals identified: Quartz, Asphalt.
Recommendations: This material can be used to excellent advantage as a floor sweep as is, or it can be blended with a small amount of saw dust, or with a small amount of light lubricating oil, or it can be blended with limestone aggregate and with a small amount of high penetration test cut back refinery asphalt for road topping purposes.

Sample #104-2
Bitumen 5.84%
Pen. test - very low
Residue - 98% qtz. sand

Minerals identified: Quartz, Asphalt
Recommendations: This is excellent material for road topping and needs to be blended with limestone aggregate, and a proper amount of high penetration test cut back refinery asphalt.

Carter County-Field Sheet No. 109 - 1 sample

Location---------SE¼SW¼ Sec. 16, T4S, R1E. Owner: Southern Rock and Asphalt Company.

Quantity--------The lateral extent of the veins has not been determined either in a Southeast or Northwest direction.

Accessibility---Overburden 12' and Exposure is 300'x20' thick, The deposit is well drained and easily accessible, being only 100 yds. north of a good gravel road.

Laboratory test-

Sample No. 109-1----Personally selected by Robert H. Dott
Bitumen 9.60%
Penetration test - very low
Residue - qtz sand, 98% - limestone, 2%
Minerals identified: Asphalt, Quartz, Limestone.
Recommendations: Excellent material for: 1. Road topping as is. 2. If mixed with lighter oil and saw dust, excellent floor sweep.

Additional information on page 2-A

Carter County-Field Sheet No. 113 - 2 Samples

Sample No. 113-1

Location:-------NW¼SE¼ Sec. 21, T4S, R1E. - Owner:

Quantity:-------Has a worked area of 210' by 36' and approx. 15' deep.

Accessibility---The deposit outcropped at the surface and thus had no overburden. The rock dips almost vertically and strikes in a NW,SE direction.

Laboratory test-

Bitumen 9.65%
Penetration test - very low
Residue - essentially quartz sand
Minerals identified: Asphalt, Quartz
Recommendations: Excellent material for: 1. Road topping as is. 2. If mixed with lighter oil and sawdust, excellent floor sweep.

Sample No. 113-2

Location:-------SE¼NW¼ Sec. 21, T4S, R1E. - Owner: Southern Rock & Asphalt Company

Quantity:-------The vein is 40' wide and has been stripped for a distance of 75'. The depth could not be determined.

Carter County - Field Sheet No. 109 (continued)

Sample No. 109-1
Bitumen: 1.2
Penetration test: High
Residue: Essentially quartz sand
Minerals identified: Oil, Quartz

Recommendations: This material contains too small quantity Bitumen to be of any commercial value.

Accessibility:---Overburden 3', being stripped off with a drag line. The deposit is approx. 200 yds. NW of the above cited pit and is undoubtedly the same vein. It is 40' wide and has been stripped for a distance of 75'. Deposits easily accessible, a road leading from them to a gravel road north ½ mile. Both well drained by a creek 100 yds. west and a dinky railway is located 200 yds. west.as

Laboratory test-

Bitumen 13.40%
Penetration test - low
Residue - essentially quartz sand
Minerals identified: Asphalt, Quartz.
Recommendations: Excellent material for: 1. Road topping as is. 2. If mixed with a lighter oil and with sawdust, excellent floor sweep.

Carter County-Field Sheet No. 114 - 1 sample

Location:-------NE¼SE¼ Sec. 10, T5S, R1E. Owner:

Quantity:-------Deposit has been partially worked, Approx. 6800 cu. ft. having been removed. Thickness not determined. Present depth of worked area is about 10'.

Accessibility---There is no road to this deposit but it is easily accessible. It is approx. 300 yds. from a good dirt road. There is gravel in the creek shown on Field Sheet that could be used for constructing a road to this deposit.

Laboratory test-

Sample No. 114-1
Test No. 1
Asphalt 4.78%
Penetration test - medium
Physical Characteristics: Asphaltic sand, 99% - quartz,1%
Minerals identified: Quartz, Asphalt, Oil.
Recommendations: Good material for road topping, when properly and sufficiently blended.

Test No. 2
Bitumen 8.89%
Penetration test - very low
Residue - qtz sand, 98%
Minerals identified: Quartz, Asphalt.
Recommendations: This is very high grade road topping material and needs to be blended with a proper amount of limestone aggregate and the proper amount of medium test cut back refinery asphalt to make an ideal road topping materia

Carter County-Field Sheet No. 115 - 1 sample.

Location:-------NE¼NE¼ Sec. 23, T5S, R1E. Owner: - - -

Quantity:-------This deposit has never been worked and is evidently a source of a large quantity of material. It is in vein from approx. 3'wide & protrudes out of a creek bank approx. 7'. Depth could not be determined.

Accessibility:---The lateral extent could not be determined, but it outcrops again about 10' back from bank. Overburden between bank and this outcrop is 3'.

Laboratory test--

Sample No. 115-1
Bitumen 7.93%
Penetration test - very low
Residue 98% qtz. sand
Minerals identified: Quartz, Asphalt
Recommendations: This is a high grade material for road topping purposes, and needs only to be blended with the proper amount of limestone aggregate and the proper amount of medium penetration test cut back refinery asphalt or other asphaltic material.

Carter County-Field Sheet No. 264 - 1 sample

Location:--------NE¼SE¼ Sec. 10, T5S, R1E. Owner-

Quantity:--------This mine has a worked area of 34'x16'x7', and would justify further exploitation. The width of the ledge of asphalt is 16' but the depth could not be determined and the lateral extent to the north was questionable.

Accessibility---It is easily accessible and could be mined with steam shovel, drills and dynamite. Well drained by Hickory Creek 100 yds. west of the deposit.

Laboratory test-

Sample No. 264-1
Bitumen 6.00%
Penetration test - low
Residue- qtz. sand 85%
limestone 15%
Recommendations: Good material for: 1. Road topping.

ASPHALT

CARTER COUNTY - Field Sheet No. 125 - 1 Sample

Location: E½ of NE¼ - Sec. 11, & SW¼ of NW¼ of Sec. 12. T 3 S - R 1 W. Sample was taken from Sec. 12. Abandoned. Was worked at four openings. Openings averaged about 100' in length, 50' in width, and 50 or 60' in depth.

Quantity: A sandstone ledge is standing vertically and the asphalt extends for ½ mile continuously along the outcrop. The sandstone outcrop is from 60 to 100' wide and is impregnated with asphalt throughout the outcrop. There is easily 200,000 cu yds. of material available.

Accessibility: Private road is adjacent to the deposit; it is 1½ mile from a county highway.

Laboratory test:
Sample No. 125-1
Bitumen: 10.7%
Penetration test: Medium
Mineral residue: Essentially quartz sand.
Minerals identified: Oil, Asphalt, Quartz.

Recommendations:
Excellent material, as is, for road topping purposes. Might be blended with a small amount of asphalt with low penetration test.

CARTER COUNTY - Field Sheet No. 7 - 1 Sample

Location: NE¼ of NE¼ - Sec. 23, T 5 S - R 1 E.

Quantity: The deposit outcrops along creek 200 yds south of creek bridge. Also small deposit west of creek deposit in ravine or wash 40 yds. joining creek stream. Length of creek deposit is 25' and the width is 4½'. Ravine deposit is 5' in length and 2½' in width.

Accessibility: Dirt road is located 200 yds west of creek bank deposit. Overburden in creek bank deposit is 12'. Ravine deposit overburden is 9' of soil. These deposits are surrounded with timber and brush.

Laboratory test: Bitumen: 3.24%
Penetration test: Medium
Mineral residue: Essentially quartz sand.
Minerals identified: Small amount of oil, Asphalt, Quartz.

Recommendations: Fair material for road topping purposes.

✓ CARTER COUNTY - Field Sheet No. 127 - 1 Sample Not in Circular No. 19.?

Location: NE¼ of SW¼ - Sec. 19, T 3 S - R 1 E.
Has been worked, to a depth of 15 feet.

Quantity: It is about 200 by 50 feet, 1,000 cu yds available at present. Thickness of stratum 15'.

Accessibility: Private road extends ½ mile from the county road to the outcrop. This deposit is recommended for production at present time.

Laboratory test:

Bitumen: 5.16%
Penetration test: Very low
Mineral Residue: Essentially quartz sand.
Minerals identified: Asphalt, Quartz.

Recommendations: Excellent material for road topping purposes, but must be added to an asphalt of same penetration test.

CARTER COUNTY - Field Sheet No. 126 - 1 Sample

Location: NW¼ of Sec. 11, T 2 S - R 2 W. In Circular No 19.
Two openings have been worked. One is about 30 x 20 x 10', in NW part of deposit. Another 20 x 10 x 5', in NE part of deposit.

Quantity: There is probably 2000 cu yds of asphaltic sandstone available at present. Thickness of stratum is 3 to 10'.

Accessibility: Asphalt occurs in about 300' along the east side of a sandstone ledge and 150' on the north side. A private road is 200 yds from the deposit connects with a gravelled county highway.

Laboratory test:

Bitumen: 6.55%
Penetration test: Medium
Mineral residue: Essentially quartz sand.
Minerals identified: Oil, asphalt, quartz.

Recommendations:
Excellent material for road topping purposes if blended with sufficient amount of high penetration test asphalt. Fair material for floor sweep base.

ASPHALT

CARTER COUNTY - Field Sheet No. 129 - Sample 1

Location: SW¼ of NW¼ of SW¼ - Sec. 9, T 1 S - R 2 W. The asphalt is in a stream conglomerate in the old Homer oil field.

Quantity: There is not over 10 tons in sight, occurring irregularly in a stratum 1 to 2 feet thick along the stream at different intervals.

Accessibility: Average overburden of 3 to 5 feet. Easily accessible and seems to be of excellent quality. Would be necessary to do extensive stripping to obtain a quantity of material. Graded road runs 1/4 mile to the west; state highway 3/4 mile to the north.

Laboratory test:
Sample No. 129-1
Bitumen: 5.82%
Penetration test: Low
Residue: Mostly quartz sand, some limestone
Minerals identified: Asphalt, Quartz, Calcite.

Recommendations:
Excellent material for: (1) Road topping.

CARTER COUNTY - Field Sheet No. 128 - 1 Sample

Location: SW¼ of SW¼ of NE¼ - Sec. 34, T 1 S - R 2 W.

Quantity: Deposit is 90 by 30 feet on surface and has a thickness of about 4 feet exposed. There is probably 350 cu. yds. available.

Accessibility: About 1/4 mile north of Poolville and within 1/8 mile of a graded road. Did not appear to warrant extensive prospecting, and is not recommended for commercial use.

Laboratory test:
Sample No. 128-1
Bitumen--5.60
Penetration test-High
Residue-Mostly quartz sand,.
Minerals identified:Asphalt,Quartz,Oil.

Recommendations:
Excellent material for: 1. Road topping., but must be mixed with sufficient quantity of low penetration test asphalt.

May be extension of F. L. No 104.

CARTER COUNTY - Field Sheet No. 279 - 1 Sample Not in Circular No 19.

Location: SE¼ of SW¼ - Sec. 35, T 5 S - R 1 E. May be extension of Sec 26 - 5S, 1E. Loan F. L. 104
East of the Hickory Creek bridge 200 yds.

Quantity: Outcrop length 10', width 7'.

Accessibility: Overburden of 6 ft. of clay, soil, and stone.
Deposit is located in a ravine in a hill.

Laboratory tests: Less than 1 percent.

Recommendations: Too low for any commercial value at this time.

CARTER COUNTY - Field Sheet No. 130 - 1

Location: SE¼ of SE¼ of NE¼ - Sec. 18, T 5 S - R 1 W. In Circular No. 19
Possibly 1500 cu yds of material have been removed.

Quantity: There is probably as much as 2000 cu. yds. of available asphalt at the deposit.

Accessibility: Occurs in sandstone ledge capping a small hill. About 4 feet overburden of sandstone. It would be necessary to improve about 3/4 mile of road to reach the location.

Laboratory test:

Recommendations:

CARTER COUNTY - Field Sheet No. 293

Location: SW¼ SW¼ Section 5, and NW¼ NW¼ Section 8, T 4 S - R 2 W.

Quantity: The deposit is about 100 x 50 x 4 feet north of the road and 100 x 20 x 4 feet south of the road. There is probably 200 cu. yds. material available.

Accessibility: There is from 2 to 3 feet overburden of clay. A county road cuts the deposit.

Laboratory test:
Sample No. 293-1
Bitumen: 3.48%
Penetration test: High
Mineral residue: Essentially quartz sand.
Minerals identified: Oil, Asphalt, Quartz.
Recommendations: Fair material for: 1. Road topping purposes if mixed with higher penetration test asphalt. 2. Floor sweep base.

CARTER COUNTY - Field Sheet No. 294

Location: NE¼ of SE¼, Sec. 19, and NW¼ of SW¼, Sec. 20, T4S-R2W.

Quantity: There is probably 150 cu. yds. material available.

Accessibility: The deposit is exposed about 90 feet along the road, and strikes northwest about 80°. The ledge is about 2 feet thick with 2 to 3 feet of overburden.

Laboratory test:
Sample No. 294-1
Bitumen: Negative.
Recommendations: Bitumen content too low for any practical purpose.

CARTER COUNTY - Field Sheet No. 295

Location: SW¼ SW¼ Sec. 20, T 4 S - R 2 W.

Quantity: This deposit is coarse sand with fine gravel with a 2 foot stratum of asphalt at the base. There is about 50 cu. yds. of asphalt in sight.

Accessibility: The asphalt has 6 feet gravel overburden. A gravel road is immediately adjacent.

Laboratory test:
Sample No. 295-2
Bitumen: Negative

Recommendations: Bitumen content too low for any commercial purpose.

COAL COUNTY ASPHALT

LOCATION	AMOUNT	F.S.#	BITUMEN	PENETRATION TEST	RESIDUE	MINERALS IDENTIFIED	USED FOR:
THROUGH Sections 14,15,16,17, 19,20,29,30. T2N-R11E	300,000 cu.yds.	9	0.24%	Very low	Quartz sand	Quartz Asphalt	This material is too low in Bitumen content for any industrial purpose at this time.

ASPHALT

COAL COUNTY - Field Sheet No. 9

Location: An outcrop of asphaltic sandstone was located in an erosion along the roadside on the west side of Section 29, 1100' south of NW corner of the section. Another outcrop was also located on the north side of section 30 a distance of 1200' west of the northeast corner of the section. The two separate outcrops were checked and traced in Sections 29, 30, 19, 20, 17, 16, 15 and 14 and found to be continuous in these sections.

Quantity: Estimated 300,000 cu. yds.

Accessibility: Depth of overburden 18"

Laboratory test:

Sample No. 9-1

Bitumen: 0.24
Penetration test: Very low
Mineral residue: Quartz sand.
Minerals identified: Quartz, Asphalt.

Recommendations: This material is too low in Bitumen content for any industrial purpose at this time.

ASPHALT

COMANCHE COUNTY - Field Sheet No. 17 - 1 Sample

Location: Center 20 acres of the N½ of N½ of Section 26, T 4 N - R 11 W, and a strip along the south line of the NW¼ of Section 26, all in T 4 N - R 11 W. Asphalt mine owned by_____

Quantity: Area of asphalt: 690 ft. wide and 1350 ft. long. Thickness of stratum:

Accessibility: Located on creek bank. Brick clay was found 300 ft. south of asphalt mine.

Laboratory test:
Sample No. 17-9
Asphalt: 3.27%
Pen. test: Low
Physical Characteristics: Asphaltic sandstone-91%
Limestone 9%
Minerals identified: Asphalt, Oil, Quartz, Calcite.

Recommendations: Excellent material for roads, if properly and sufficiently blended.

COMANCHE COUNTY - Field Sheet No. 40 - 11 Samples

Location: SE¼ NW¼ Sec. 16, T 2 N - R 11 W. Owned by U.S.Fed. Government.

Quantity: About 15 acres, possibly only 10 acres good.

Accessibility: Near roads that need surfacing, in a Federal Government Reservation. Overburden about 2 ft.

Laboratory test:
Sample No. 40-1
Bitumen: 12.21%
Penetration test: High
Residue: 70% limestone
30% quartz sand
Minerals identified: Calcite, Quartz, Oil, Asphalt.

Recommendations: This material is good for:
(1) Floor sweep base
(2) Road topping

Sample No. 40-2
Bitumen: 13.13%
Penetration test: High
Residue: Limestone: 67%
High Iron
Manganese: about 1%
Minerals Identified: Oil, Asphalt, Calcite, Hematite, and Pyrolusite.

Recommendations: This material excellent for (1) Floor sweep base & (2) Road topping.

COMMANCHE COUNTY - LIQUID ASPHALT

FIELD SHEET NO :	576
LOCATION	N½ NE SE Sec. 21 T4N-R11W flowing well at 10'
AMOUNT:	?
SPECIFIC GRAV. AS REC'D:	24.7° A.P.I. @60° F.
SPECIFIC GRAV., DRY:	24.7° A.P.I @60° F.
MOISTURE:	none
1st DROP OVER:	464.0° F.
10% " " :	572.0° F.
20% " " :	626.0° F.
30% " " :	698.0°F.
40% " " :	743.0° F.
50% " " :	770.0° F.
60% " " :	788.0° F.
70% " " :	800.6° F.
80% " " :	806.0° F.
90% " " :	770.0° F. by Vol.
95% " " :	
RES: % DROP OVER:	8.3°F. Coke, by wt.
INITIAL BOILING POINT:	464.0° F.
END POINT:	770.0° F.
CRACKING POINT:	770.0° F.
OCTANE RATING:	N. D.
DISTILATE:	90% by volume
RESIDUE:	8.3% by weight
PENETRATION TEST:	none

COMANCHE COUNTY ASPHALT

LOCATION	AMOUNT	F.S.#	BITUMEN	PENETRATION TEST	RESIDUE	MINERALS IDENTIFIED	USED FOR:
SW¼ Sec. 26 T4N-R11W	1350' long 690' wide	17	30.60%	Low	75% L.S. 25% Qtz.	Asphalt Quartz Calcite	1. Road topping.
NW¼ Sec. 16 T2N-R11W	200,000 tons	40-1	12.21%	High	70% L.S. 30% Qtz.	Calcite Quartz Oil Asphalt	1. Floor sweep base. 2. Road topping.
Ditto	Ditto	40-2	13.13%	High	67% L.S. High iron content 1% Mamganese	Oil Asphalt Calcite Hemetite	1. Floor sweep base. 2. Road topping.
Ditto	Ditto	40-3	2.50%	Very low	98% qtz. sand 2% L.S.	Quartz Calcite Asphalt	Bitumen almost too low to be of commercial value.
Ditto	Ditto	40-4	14.60%	Low	95% Qtz. sand 5% L.S.	Quartz Calcite Asphalt Oil	1. Road topping. 2. Extraction for asphalt paints.
Ditto	Ditto	40-5	44.10%	Very low	Quartz sand	Quartz Asphalt	1. Road topping. 2. Extraction for asphalt paints. 3. Roofing material, as is.
Ditto	Ditto	40-6	8.75%	Low	Quartz sand	Quartz Asphalt	1. Road topping.
Ditto	Ditto	40-7	6.94%	Very low	High L.S. low qtz. sand	Asphalt Quartz Calcite	1. Road topping.

COMANCHE COUNTY ASPHALT

LOCATION	AMOUNT	F.S.#	BITUMEN	PENETRATION TEST	RESIDUE	MINERALS IDENTIFIED	USED FOR:
NW¼ Sec. 16 T2N-R11W	200,000 tons	40-8	2.2%	Very low	High L.S Low qtz. sand	Asphalt Quartz Calcite	Bitumen too low for commercial use at present.
Ditto	Ditto	40-9	16.13%	Low	High L.S Low qtz. sand	Ditto	1. Road topping.
Ditto	Ditto	40-10	12.9%	Low	High L.S Low qtz. sand	Ditto	1. Road topping.
Ditto	Ditto	40-11	42.20%	Very low	Quartz sand	Asphalt Quartz	1. Road topping. 2. Extraction for roofing material or asphalt paints. 3. Good roofing material, as is.
NE¼ Sec. 34 T2N-R12W	10,793 cu. yds.	293-1	5.39%	Medium	Quartz sand	Oil Asphalt Quartz	1. Road topping.
Ditto	Ditto	293-1 re-run	5.0%	Medium	Quartz sand	Oil Asphalt Quartz	1. Good material for road topping purposes if blended with asphalt or low pen. test.
Ditto	Ditto	293-2	Almost none				Bitumen content too low for any commercial purposes.
SW¼ Sec.9 T3N-R11W	24' long 16' wide	96-1	30-65%	Low	75% L.S. 25% qtz. sand	Asphalt Limestone Quartz	1. Road topping. 2. Extracted material, excellent roofing material, and asphalt paints.
NW¼ Sec. 16 T2N-R11W.		40-12	almost none				Bitumen too low for amy commercial use.

COMANCHE COUNTY ASPHALT

LOCATION	AMOUNT	F.S.#	BITUMEN	PENETRATION TEST	RESIDUE	MINERALS IDENTIFIED	USED FOR:
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
NW¼ of SE¼ & NE¼ SW¼ Sec. 9 T3N-R11W	24' long 16' wide	96-3	26.8%	Very low	Quartz sand	Asphalt Quartz	1. Road topping. 2. Extraction for asphalt paints and roofing material.
Ditto	Ditto	96-4	21.3%	Very low	Quartz sand	Asphalt Quartz.	1. Road topping. 2. Extraction for asphalt paints & roofing material
Ditto	Ditto	96-5A	13.5%	Very low	95% qtz. sand 5% L.S.	Asphalt Silica Limestone	1. Excellent material for road topping, as is.
Ditto	Ditto	96-6	33.4%	Very low	Quartz sand	Asphalt Quartz	1. Road topping. 2. Extraction for asphalt paints & roofing material
Ditto	Ditto	96-7	21.3%	High	Ditto	Ditto	1. Road topping. 2. Floor sweep base. 3. For asphalt paints and roofing material.
Ditto	Ditto	96-8	13.4%	High	98% qtz. sand 2% L.S.	Oil Asphalt Quartz Limestone	1.Rather soft for road topping but good if mixed with a high pen. test asphalt. 2. Floor sweep base.
Ditto	Ditto	96-9	13.4%	High	Ditto	Oil Asphalt Quartz	Ditto

COMANCHE COUNTY ASPHALT

LOCATION	AMOUNT	F.S.#	BITU-MEN	PENETRA-TION TEST	RESIDUE	MINERALS IDENTIFIED	USED FOR:
NW¼ OF SE¼ & NE¼ OF SW¼ Sec. 9 T3N-R11W	24' long 16' wide	96-10	14.8%	Very low	Quartz sand	Asphalt Silica	1. Road topping.
Ditto	Ditto	96-11A	42.95%	Very low	98% qtz. sand 2% L.S.	Asphalt Quartz Limestone	1. Road topping. 2. Extractions for asphalt paints & roofing material.
Ditto	Ditto	96-11A re-run	11.0%	Medium	Quartz sand	Asphalt Silica	1. Road topping, as is.
Ditto	Ditto	96-11A 2nd re-run	9.97%	High	Ditto	Asphalt Oil Quartz	1. Floor sweep base. 2. Road topping, if blended with high pen. test.
Ditto	Ditto	96-11A 3rd re-run	5.83%	High	92% qtz. sand 8% L.S.	Oil Asphalt Quartz Limestone	1. Road topping purposes. 2. Floor sweep base. (May 1, 1936)
Ditto	Ditto	96-11A 4th re-run	5.83%	High	Ditto	Asphalt Oil Quartz Calcite	1. Road topping purposes if mixed with asphalt of higher pentration test. 2. Fair for floor sweep base, as is. (May 9, 1936)
Ditto	Ditto	96-11B	10.27%	Very low	Quartz samd	Asphalt Quartz	1. Road topping, as is. (April 8, 1936)

COMANCHE COUNTY ASPHALT

LOCATION	AMOUNT	F.S.#	BITUMEN	PENETRATION TEST	RESIDUE	MINERALS IDENTIFIED	USED FOR:
NW¼ of SE¼ & NE¼ of SW¼ Sec. 9 T3N-R11W	24' lo. 16' wi.	96-12	25.5%	Medium	60% silica 40% L.S.	Asphalt Quartz Limestone	1. Road topping, if mixed with small amount high pen. test asphalt. 2. Floor sweep, as is. 3. Extraction for asphalt paints or roofing material.
Ditto	Ditto	96-13	24.2%	Medium	Quartz sand	Asphalt Quartz	1. Road topping. 2. Extraction for asphalt paints & roofing material
Ditto	Ditto	96-14	24.1%	Medium	Ditto	Ditto	Ditto
SE¼ Sec.32 T4N-R11W	7,259 cu. yds.	199-1	5.40%	High	Quartz sand Limestone	Oil Asphalt Quartz Limestone	1. Road topping. 2. Floor sweep base.
Ditto	Ditto	199-2	4.92%	Medium	Ditto	Asphalt Quartz Limestone	1. Road topping.
Ditto	Ditto	199-3	9.11%	Medium	Quartz sand	Small oil Quartz sand	1. Road topping, may need small amount of low pen. test asphalt. 2. Floor sweep base.
Ditto	Ditto	199-4	2.65%	Medium	98% qtz. sand 2% L.S.	Oil Asphalt Quartz Calcite	1. Road topping. 2. Floor sweep base.
~~NE¼ Sec.24 T2N-R11W~~	~~1000 cu. yds.~~	~~204-1~~	~~mtg.~~				

COMANCHE COUNTY ASPHALT

LOCATION	AMOUNT	F.S.#	BITUMEN	PENETRATION TEST	RESIDUE	MINERALS IDENTIFIED	USED FOR:
NE¼ Sec.24 T2N-R11W	1808 cu. yds.	294-2	8.23%	High	90% Qtz. sand 10% L.S.	Asphalt Quartz Limestone	1. Road topping. 2. Base for floor sweep.
Ditto	Ditto	294-3	5.5%	High	Quartz sand	Oil qtz. sand Asphalt	1. Road topping. 2. Floor sweep base.
SE¼ Sec.27 T4N-R11W	?	207-1	4.27%	Medium	Quartz sand	Small oil Large amt. Qtz. sand	1. Excellent for road topping, but must be mixed with sufficient amt. low pen. test asphalt.
NE¼ Sec. 21 T2N-R11W	?	295-1	7.0%	High	Ditto	Oil Asphalt Quartz	Fair material for road topping but must be blended with asphalt of low penetration test.
Ditto	?	295-2	2.27%	High	Ditto	Ditto	Low grade for: Road topping Fair material for: Floor sweep base. (May 1, 1936)
[illegible]	[illegible]	[illegible]	[illegible]				[illegible]
Ditto	?	295-3	3.9%	High	Ditto	Ditto	Fair material for road topping but must be blended with asphalt of low penetration test.
SW¼ Sec.15 T4N-R11W	?	244-1	1.96%	High	Ditto	?	Bitumen content too low for any practical use now. (May 9, 1936)

COMANCHE COUNTY ASPHALT

LOCATION	AMOUNT	F.S.#	BITUMEN	PENETRATION TEST	RESIDUE	MINERALS IDENTIFIED	USED FOR:
SW¼ Sec.15 T4N-R11W	?	244-1	1.96%	High	Quartz sand	Oil Asphalt Quartz	Low grade material that might be used for: 1. Road topping purposes. 2. Floor sweep base.
[redacted]		[redacted]	[redacted]	[redacted]	[redacted]		
NW SW NW Sec. 32 T2N-R10W	?	511					

COMANCHE COUNTY - Field Sheet No. 40 (continued)

Laboratory test:

Sample No. 40-3

Bitumen: 2.50%
Penetration test: Very low.
Residue: Quartz sand: 98%
Limestone: 2%
Minerals Identified: Quartz, Calcite, Asphalt.

Recommendations: The Bitumen content of this material is almost too low to be of commercial value.

Sample No. 40-4

Bitumen: 14.60%
Penetration test: Low
Residue: Quartz sand: 95%
Limestone: 5%
Minerals identified: Quartz, Calcite, Asphalt, Oil.

Recommendations: Excellent material for: (1) Road topping.
(2) Extraction for asphalt paints.

VERY GOOD

Sample No. 40-5

Bitumen: 44.10%
Penetration test: Very low
Residue: Essentially quartz sand.
Minerals identified: Quartz , Asphalt.

Recommendations: Most excellent material for:
(1) Road topping.
(2) Extraction for asphalt paints
(3) Roofing material. This should make good roofing material as is, and should form most excellent raw material for industrial extraction by continuous acting centrafuges.

Sample No. 40-6

Bitumen: 8.75%
Penetration test: Low
Residue: Essentially quartz sand.
Minerals identified: Quartz, Asphalt.

Recommendations: Excellent material for: (1) Road topping.

Sample No. 40-7

Bitumen: 6.94%
Penetration test: Very low
Residue: High in limestone
Low in quartz sand
Minerals identified: Asphalt, Quartz, Calcite.

Recommendations: This material is good for: (1) Road topping.

Sample No. 40-8

Bitumen: 2.2%
Penetration test: Very low
Residue: High in limestone
Low in quartz sand
Minerals identified: Asphalt, Quartz, Calcite.

Recommendations: Excellent for: (1) Road topping.

ASPHALT

COMANCHE COUNTY - Field Sheet No. 40 (continued)

Laboratory test:

Sample No. 40-9
Bitumen: 16.13%
Penetration test: Low
Residue: High in limestone
Low in quartz sand.
Minerals identified: Asphalt, Calcite, Quartz
Recommendations: Excellent material for: (1) Road topping.

Sample No. 40-10
Bitumen: 12.9%
Penetration test: Low
Residue: High in limestone
Low in quartz sand
Minerals identified: Asphalt, Calcite, Quartz.
Recommendations: Excellent material for: (1) Road topping.

Sample 40-11
Bitumen: 42.20%
Penetration test: Very low
Residue: Essentially quartz sand
Minerals identified: Asphalt, Quartz.
Recommendations: Most excellent material for: (1) Road topping
(2) Extraction to be manufactured into roofing materials and paints.
(3) Good roofing material as is.

(Sample No. 40-12 will be found on page (g-2).)

COMANCHE COUNTY--Field Sheet No. 96.- 14 Sampled

Location: NE¼ of SW¼ Sec. 9, T 3 N - R 11 W

Quantity:

Accessibility:

Laboratory test:

Sample No. 96-1
Bitumen: 30.65%
Penetration test: Low
Residue: Limestone 75%
Quartz sand: 25%
Minerals identified: Excellent material for:
(1) Road topping
(2) Extracted material, excellent roofing material, and asphalt paints.

Sample No. 96-11A (re-run given later) April 8, 1936
Bitumen: 42.95%
Penetration test: Very low
Residue: Quartz sand 98%
Limestone: 2%
Minerals identified: Asphalt, Quartz, Limestone

Recommendations: Excellent material for: Road topping & Extracted material, excellent roofing material or for asphalt paints.

ASPHALT

COMANCHE COUNTY - Field Sheet No. 96 (continued)

Laboratory test:

Sample No. 96-3
Bitumen: 26.8
Penetration test: Very low
Residue: Essentially quartz sand
Minerals Identified: Asphalt; Quartz
Recommendations: Excellent material for: (1) Road topping. (2) Extraction for the preparation of asphalt paints and for roofing material.

Sample No. 96-4
Bitumen: 21.3
Penetration test: Very low
Residue: Essentially quartz sand
Minerals Identified: Asphalt; Quartz
Recommendations: Excellent material for: (1) Road topping. (2) Extraction for the preparation of asphalt paints and for roofing material.

Sample No. 96-5A
Bitumen: 13.5
Penetration test: Very low
Residue: Quartz sand - 95%
Limestone --- 5%
Minerals identified: Asphalt; Silica; Limestone.
Recommendations: Excellent material for road topping, as is.

Sample No. 96-6
Bitumen: 33.4
Penetration test: Very low
Residue: Essentially quartz sand
Minerals Identified: Asphalt; Quartz.
Recommendations: Excellent material for: (1) Road topping. (2) Extraction for the preparation of asphalt paints and for roofing material.

Sample No. 96-7
Bitumen: 21.3
Penetration test: High
Residue: Essentially quartz sand
Minerals Identified: Oil; Asphalt; Quartz
Recommendations: Good material for: (1) Road topping. Excellent material for: (1) Base for preparation for floor sweep. (2) Extraction for manufacture of asphalt paints and for roofing material.

Sample No. 96-8
Bitumen: 13.4
Penetration test: High
Residue: Quartz sand - 98%
Limestone---- 2%
Minerals Identified: Oil; Asphalt; Quarta; Limestone.
Recommendations: Rather soft for road topping purposes but excellent if mixed with a high penetration test asphalt. Excellent for: 1. Base as floor sweep compound.

ASPHALT

COMANCHE COUNTY - Field Sheet No. 96 (continued)
Laboratory test:

Sample No. 96-9
Bitumen: 13.4
Penetration test: High
Residue: Quartz sand - 98%
Limestone --- 2%
Minerals Identified: Oil; Asphalt; Quartz
Recommendations: Rather soft for road topping purposes, but excellent if mixed with a high penetration test asphalt. Excellent material for:
(1) Floor sweep compound as is.

Sample No. 96-10
Bitumen: 14.8
Penetration test: Very low
Residue: Essentially quartz sand
Minerals Identified: Asphalt; Silica
Recommendations: Excellent material for road topping.

Sample No. 96-12
Bitumen: 25.5
Penetration test: Medium
Residue: Silica --- 60%
Limestone- 40%
Minerals Identified: Asphalt; Quartz; Li-mestone
Recommendation: Excellent material for: (1) Road topping purposes although it should be mixed with a small amount of high penetration test asphalt. (2) Extraction for the manufacture of asphalt paints or roofing material. (3) Floor sweep as is.

Sample No. 96-11A (re-run)May 2, 1936
Bitumen: 9.97%
Penetration test: High
Mineral residue: Essentially quartz sand
Minerals identified: Oil, Asphalt, Quartz
Recommendation: Excellent material for: 1. Base for compounding floor sweep. Fair material for: 2. Road topping if blended with high penetration asphalt.

Sample No. 96-11A (re-run) May 1, 1936
Bitumen: 5.83
Penetration test: High
Mineral residue: 92% qtz. sand, 8% limestone.
Minerals identified: Oil, Asphalt, Quartz, Limestone
Recommendation: Fair material for: 1. Road topping purposes.
Good material for: 1. Floor sweep base.

Sample No. 96-11A (re-run) April 17, 1936
Bitumen: 11.0%
Penetration test: Medium
Residue: Essentially quartz sand
Minerals identified: Asphalt, Silica
Recommendation: Excellent material for use as road topping, as is.

ASPHALT

COMANCHE COUNTY - Field Sheet No. 96 (continued)

Laboratory test:

Sample No. 96-13

Bitumen: 24.13%
Penetration test: Medium
Residue: Essentially quartz sand
Minerals identified: Asphalt, Quartz

Recommendations: Excellent material for: (1) Road topping (2) Extraction for production of asphalt paints, and for roofing material.

Sample 96-14

Bitumen: 24.1
Penetration test: Medium
Residue: Quartz sand
Minerals identified: Quartz, Asphalt.

Recommendations: Excellent material for: (1) Road topping (2) Extraction for production of asphalt paints or roofing material.

(Samples No. 96-11A, 96-11A, 96-11B, will be found on page (g-2),)

COMANCHE COUNTY - Field Sheet No. 199 - 4 Samples

Location: SE¼ Sec. 32, T 4 N - R 11 W. Owner:

QUANTITY: 7260 Cu. yds.
Thickness of Stratum: 2' to 4'

Accessibility: No overburden.

Laboratory test:

Sample No. 199-1

Bitumen: 5.40%
Penetration test: High
Residue: Mostly quartz sand, some limestone.
Minerals identified: Oil, Asphalt, Quartz, Limestone.

Recommendations: Fair material for:
(1) Road topping.
Excellent material for:
(2) Base for preparations of floor sweep compounds.

Sample No. 199-2

Bitumen: 4.92%
Penetration test: Medium
Residue: Mostly quartz sand; small amount of limestone.
Minerals identified: Asphalt, Quartz, Limestone.

Recommendations: Good material for: (1) Road topping.

COMANCHE COUNTY - Field Sheet No. 199-3

Laboratory test:
Sample No. 199-3
Bitumen: 9.11%
Penetration test: Medium
Mineral residue: Essentially quartz sand
Minerals identified: Small amount of oil, Quartz sand.
Recommendations: Excellent material as is for:
(1) Road topping purposes. May require the addition of small amount of low penetration test asphalt.
(2) Base for compounding floor sweep.

Sample No. 199-4
Bitumen: 2.65%
Penetration test: Medium
Mineral residue: 98% quartz sand
2% limestone
Minerals identified: Oil, Asphalt, Quartz, Calcite
Recommendations: Fair material for: (1) Road topping.
(2) Base for compounding floor sweep.

COMANCHE COUNTY - Field Sheet No. 40 (continued)
Laboratory test;
Sample No. 40-12 ---- Bitumen: practically none.
Recommendations: Bitumen content in this sample is too low for any commercial purposes at this time.

COMANCHE COUNTY - Field Sheet No. 96 (continued)
Laboratory test:
Sample No. 96-11A (re-run, May 1, 1936)
Bitumen: 5.83%
Penetration test: High
Mineral residue: 92% qtz. sand, 8% Limestone.
Recommendations: Fair material for: (1) Road topping purposes.
Good material for: (2) Floor sweep base.
Minerals identified: Oil, Asphalt, Quartz, Limestone.
Sample No. 96-11A (re-run, May 9, 1936)
Bitumen: 5.83%
Penetration test: High
Mineral residue: 92% qtz. sand, 8% limestone.
Minerals identified: Oil, Asphalt, Quartz, Calcite.
Recommendations: Fair material for: 1. Road topping purposes, if mixed with asphalt of higher penetration test.
2. Fair material for floor sweep base as is.

Sample No. 96-11B
Bitumen: 10.27%
Penetration test: Very low
Mineral residue: Essentially quartz sand.
Minerals identified: Asphalt and Quartz.
Recommendations: Very excellent material as is for:
Road topping.

ASPHALT

COMANCHE COUNTY - Field Sheet No. 96 (continued)

Laboratory test:

Sample No. 96-3
Bitumen: 26.8%
Penetration test: Very low
Mineral residue: Essentially quartz sand.
Minerals identified: Asphalt and Quartz.

Recommendations: Excellent material for:
1. Road topping.
2. Extraction for the preparation of asphalt paints and for roofing material.

ASPHALT

COMANCHE COUNTY - Field Sheet No. 207 - 1 Sample

Location: Southeast Corner of Sec. 27, T 4 N - R 11 W
Owner:

Quantity: Surface outcropping of asphalt, however, of no commercial value, as to quantity.

Laboratory test:
Sample 207-1
Bitumen: 4.27%
Penetration test: Medium
Residue: Essentially quartz sand.
Minerals identified: Small amount of oil
Large amount of asphalt
Quartz sand.

Recommendations: Excellent material for road topping purpose, but must be mixed with sufficient amount of low penetration test asphalt.

COMANCHE COUNTY - Field Sheet No. 244 - 1 Sample

Location: SE¼ SW¼ Sec. 15, T 4 N - R 11 W. Owner:

Quantity: Asphalt Sample 243-1 was taken from the creek bed surface. Asphalt deposit is 50' in length and 20' in width. It has an overburden of about 10' with the asphalt running about 10 degree angle into bank of Tony Creek.
Unlimitted.

Accessibility: Accessible to good roads and U.S.Highway No. 62.

Laboratory test:
Sample No. 244-1 (May 1, 1936)
Bitumen: 1.96%
Penetration test: High
Mineral residue: Quartz sand
Minerals identified: Oil, Asphalt, Quartz.
Recommendations:
Low grade material that might be used for:
1. Road topping purposes.
2. Floor sweep base.

Sample No. 244-1 (May 9, 1936)

Bitumen: 1.96%
Penetration test: High
Mineral residue: Essentially quartz sand.
Recommendations: This sand sontains too small amount of Bitumen content to be of practical use at this time.

ASPHALT

COMANCHE COUNTY - Field Sheet No. 293 - 2 Samples

Location: NW¼ NE¼ Sec. 34, T 2 N - R 12 W. Owner:

This deposit has been mined.

Quantity: Thickness of stratum varied 5' to 8'.
10,793 cu. yds.

Accessibility: Good

Laboratory test:
Sample No. 293-1
Bitumen: 5.39%
Penetration test: Medium
Mineral residue: Essentially quartz sand
Minerals identified: Oil Asphalt, Quartz

Recommendations: Very good material for: Road topping.
Sample No. 293-2
Bitumen: Practically none

Recommendations: Bitumen content entirely too low for any commercial purposes.

COMANCHE COUNTY - Field Sheet No. 294 - 3 Samples

Location: SW¼ NE¼ Sec. 24, T 2 N - R 11 W. Owner:
This deposit has been mined.

Quantity: 1808 cu. yds.
Thickness of stratum 3' to 4'

Accessibility: Good

Laboratory test:

(*Samples 294-2 & 294-3 on following page.)

COMANCHE COUNTY - Field Sheet No. 295 - 3 Samples.

Location: SW¼ NE¼ Sec. 21, T 2 N-R 11 W. Owner:

Quantity: Unlimited. Thickness of stratum 2' to 4'

Accessibility: Overburden 10'. Roads, fair.

Laboratory test:

*See next page for rest of samples.

COMANCHE COUNTY - Field Sheet No. 294 (continued)

Laboratory test:

Sample No. 294-2
Bitumen: 8.25
Penetration test: High
Mineral residue: 90% quartz sand
10% limestone
Minerals identified: Asphalt, Quartz, Limestone

Recommendations: Good material for: 1. Road topping.
2. Base for floor sweep compound.

Sample No. 294-3
Bitumen: 5.5%
Penetration test: High
Mineral residue: Quartz sand
Minerals identified: Oil, Quartz sand, Asphalt.

Recommendations: Fair material for:
(1) Road topping.
(2) Base for floor sweep compound.

COMANCHE COUNTY - Field Sheet No. 295 (continued)

Laboratory test:

Sample No. 295-1
Bitumen: 7.0%
Penetration test: High
Mineral residue: Essentially quartz sand
Minerals identified: Oil, Asphalt, Quartz
Recommendations: Fair material for road topping purposes, but must be blended with asphalt of low penetration test.
Sample No. 295-2 will be found on page (p-3)
Sample No. 295-3
Bitumen: 3.9%
Penetration test: High
Mineral residue: Essentially quartz sand
Minerals identified: Oil, Asphalt, Quartz
Recommendations: Fair material for road topping purposes, but must be blended with asphalt of low penetration test.

COMANCHE COUNTY - Field Sheet No. 293 (continued)
Sample No. 293-1 (re-run)
Bitumen: 5.0%
Penetration test: Medium
Mineral residue: Quartz sand
Minerals identified: Oil, Asphalt, Quartz.
Recommendations: Good material for road topping purposes if blended with asphalt of low penetration test.

COMANCHE COUNTY - Field Sheet No. 295 (continued)

Laboratory test:

Sample No. 295-2
Bitumen: 2.27%
Penetration test: High
Mineral residue; Quartz sand.
Minerals identified: Asphalt, Oil, Quartz.
Recommendations:
Low grade material for:
1. Road topping purposes.
Fair material for:
2. Floor sweep base.

COMANCHE COUNTY - Field Sheet No. 511

Location: NW SW SW NW¼ of Sec. 32, T 2 N - R 10 W.

Quantity: Well was full of oil making it impossible to test the depth of the well.

Accessibility: Shovels and Steam shovels are the mining methods recommended. No other data given.

Laboratory test:

Sample No. 511-1
Bitumen:
Penetration test:
Mineral residue;
Minerals identified:
Recommendations:

COMMANCHE COUNTY - Field Sheet No. 376

Location: N½ NE¼ SE¼, Sec. 21, T4N, R11W.

Quantity: Sample #376-1 taken at a depth of 10'. A well had been dug in this location 26 years ago, going down 1000'; but only finding a dry hole. Gas bubbles are coming up through the oil continually. Asphalt located in sec. 15, 27 and 26 in the same township. All within a distance of about one mile from where this sample came from. No paraffin base at all.

Laboratory test:
Sample No. 376-1
Substance: Asphaltic oil.
Residue: 8.3% by weight
Penetration test: none.

Remarks: Low grade asphaltic oil. Good material for feed stock in cracking unit. Residue carbon, non-asphaltic. Cut some 60 to 90% for fair stock for preparation of asphalt base lubricating oil.

COMANCHE COUNTY - Field Sheet No. 344-A

Location: CW½, Sec. 1, T 1 S - R 13 W.

Quantity: 3 acres. Believed not to be in sufficient amount to be of commercial value.

Accessibility: Depth of overburden: 2".
Thickness of stratum: 18".

Laboratory test:
Sample No. 344 A - 1.

OKLAHOMA GEOLOGICAL SURVEY

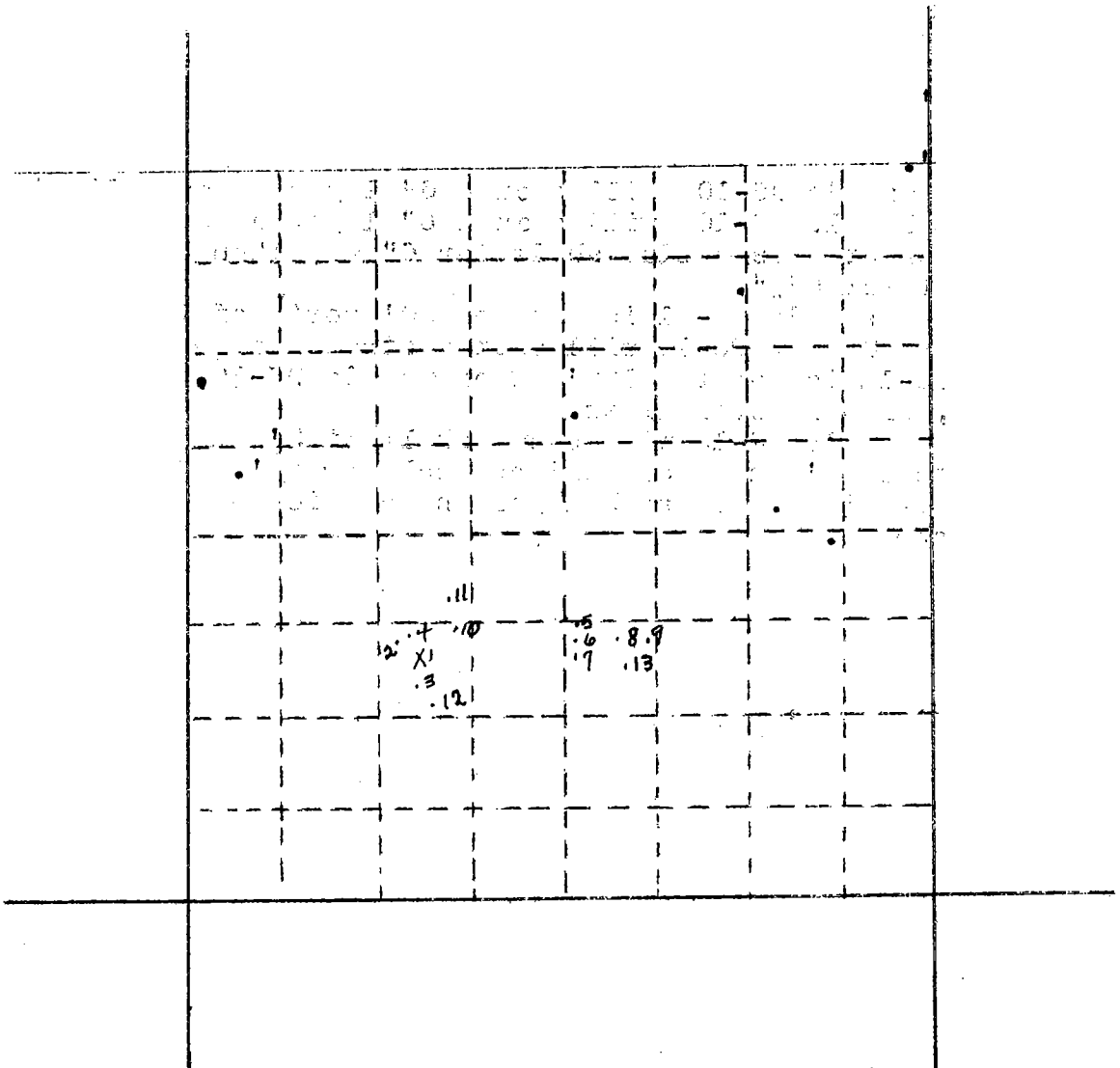
Norman, Oklahoma Sheet No. 96

Observer: M. A. Mansur Date Feb. 21, 1936

Investigation: State Mineral Survey Branch: Road & Construction Material Sample nos.

Details Here Recorded: Asphalt - 96-1 to 96-12 - Creek Bed Deposit.

Section 9, Township 3N, Range, 11W, Comanche County



Notes: (X) indicates where asphalt sample no. 96-1 was taken.

Figures indicates other samples.

The first nine samples are grab samples that were taken from the surface of asphalt outcroppings in Sec. 9, T3N, R11W.

(over)

Sample #96-1. Sample 96-2 was taken 12' north of sample 96-1.
Sample 96-3 was taken 33' south and east of sample 96-1.
Sample 96-4 was taken 20' north and west of sample 96-1.
Sample 96-5A was taken 325 yes east of test 96-1.
Sample 96-B was taken 325 yds east of test 96-1.
Sample 96-6 was taken 18' south of 96-5.
Sample #96-7 was taken 39' south and east of sample 96-5.
Sample 96-8 was taken 107 yds east and 24 yds south of 96-5.
Sample 96-9 was taken 45' east of sample 96-8.
24' south of sample 96-7 is another outcorpping of asphalt, 24'X12'. Same material as sample 96-7. 30' on southwest another outcropping of asphalt 5' in diameter, same as sample 96-7.
Continuing on southwest for 18' find another outcropping of asphalt 4' in diameter.
Sample 96-8 shows an asphalt outcropping with an area of 24'X16'.
Sample 96-9 wshows an asphalt outcropping with an area of 27'X21'.
Test & Sample 96-10A will show a 6" layer of asphalt at 5'.
Test & Sample 96-10B will s ow a 6" layer of asphalt at 7' and then strikes a blue shale for 6" and then a layer of asphalt for 6"½".
Test and sample 96-11 is located 20' north of test 96-10.
Test and Sample 96-12 will show a stratum of asphalt for 5'.
Test 96-12 is located 120' SW of sample 96-10, at a depth of 7', with no overburden.
Test & Sample 96-13 will show ashalt at 3' and continues for a depth of 3' and then strikes rock for 2½'. Depth of rock not determined. In each layer and crevice of this rock showed oil seepage.

OKLAHOMA GEOLOGICAL SURVEY

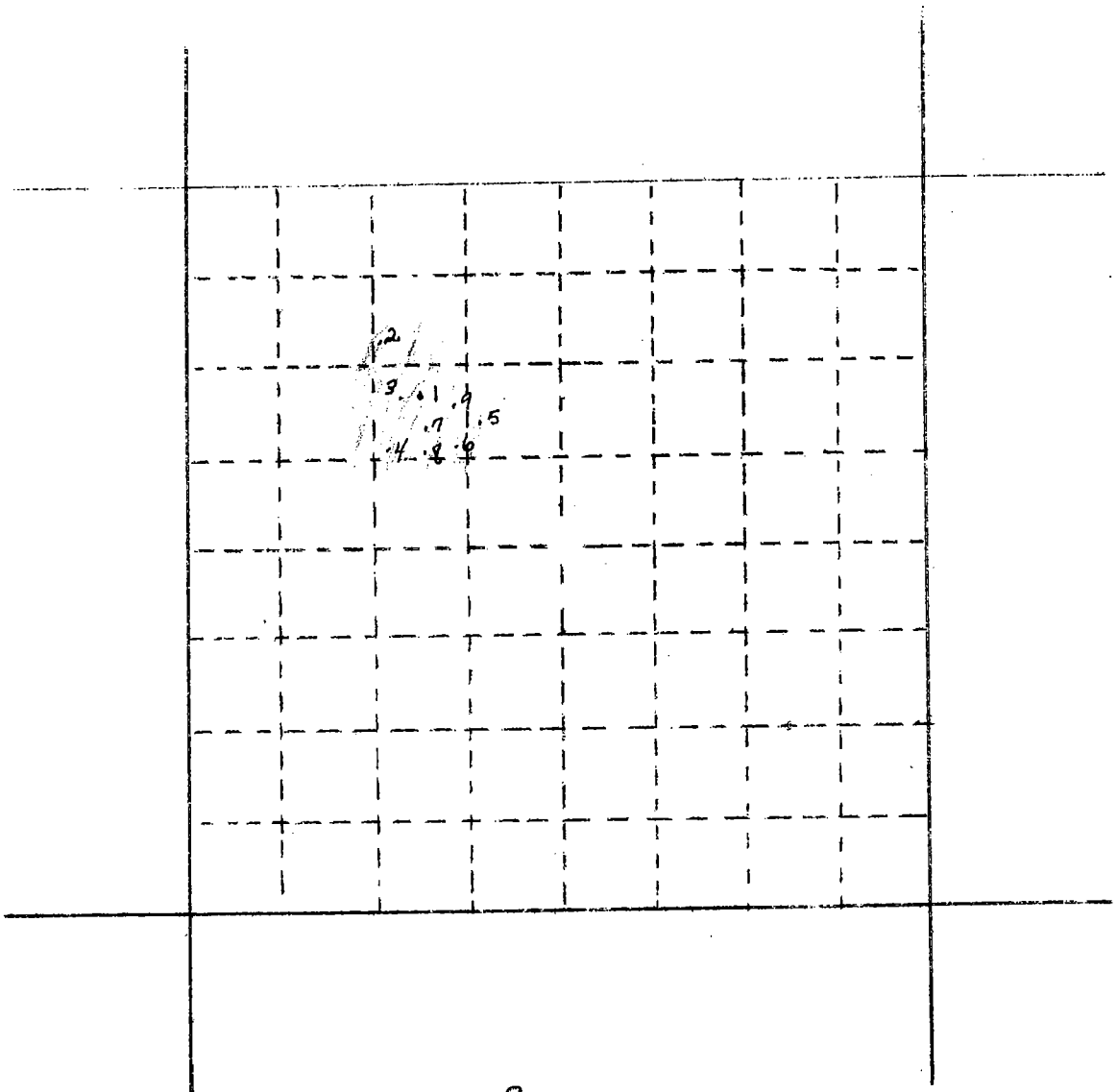
Norman, Oklahoma Sheet No. 40

Observer: Jesse Griggs Date Jan. 17, 1936

Investigation: State Mineral Survey Branch Road & Construction Materia

Details Here Recorded: Asphalt - 40-1 to 40-9 - Circular Dome Shaped Sample nos. Area 196,353 sq. ft.

Section 16, Township 2N, Range, 11W, Comanche County



Notes: The shaded area on map indicates tests that were made on the U.S. Military Reservation for Asphalt. Pencil dots indicates test holes.

Sample #37-1 was discovered at 2' and continued for 5' then strikes soil for 1' and hits asphalt and continued for 6' and

(over)

strikes asphalt oil for 1', which caused it impossible to complete the test.
Sample #37-2. Located 420' north and west of test 37-1 will show asphalt at 2' in layers 3" thick. Then strikes soil for 3'.
Sample 37-3. Located 190' north and east of test 37-1 will show apphalt in layers at 2'. 2" thick for 8" apart and continues for 4'.
Samples 37-4. Located 100' east of test 37-1, will show asphalt in layers at 2', 2" thick for 4'.
Sample #37-5. Located 150' east of test 37-1 will show ashalt in layers at 2', 2" thick and continues for 5'.
Sample #37-6. Located 300' south and east of test 37-1, will show asphalt in layers at 2', 3" thick and continues for 4', at 8 to 10' apart.
Sample #37-7. Located 105' south of test #37-1 will show asphalt in layers at 2', 2 to 3 inches apart and continues for 3'.
Sample #37-8. Located 180' south of test 37-1 will show asphalt at 2' and continues for 4'. Then striking a blue shale for 1' and again strikkng asphalt and continuing for 6'.

STATE MINERAL SURVEY
Works Progress Administration
O. P. 65-65-538
OKLAHOMA GEOLOGICAL SURVEY
Norman, Oklahoma

Jan. 25, 1936.

Mr. F. C. Wood,
Project Director,
Oklahoma Geological Survey,
Norman, Oklahoma.

Dear Mr. Wood:

I went with the boys this morning to complete our asphalt test on the military reservation. A most profitable day was spent.

On test hole number 2 we went to a depth of eleven feet, going through three feet of soil then two feet of poor grade asphalt which ran into a five foot pure asphalt before we struck a blue shale. We continued for one foot through this blue shale striking no more asphalt.

3 ft soil
2 ft poor asphalt
5 ft pure asphalt
blue shale

On test hole number one we went to a depth of thirteen feet striking asphalt and soil in layers all the way down. With an overburden of about two feet, striking the asphalt and continuing for three feet of rock asphalt and one foot of poor grade asphalt of the sand stone texture; then we struck a very find grade of pliable asphalt of sand content which continued in this pure asphalt for six feet; at the bottom of which we struck a pure liquid formation which flowed to the top of our small auger hole. This liquid content seemed to be about one foot in thickness. We again struck a solid base which we believe to be asphaltic but due to the liquid flow of oil it made it impossible for us to continue with the test because the liquid content was filling the entire pit making it impossible to determine or secure a sample from the bottom.

2 ft overburden
3 ft rock asphalt
1 ft poor asphalt of sand texture
6 ft pure pliable asphalt
1 ft. liquid oil
4 ft pure asphalt.

We brought Major Williams out to see the results and he was very enthusiastic and highly pleased. He requested that we keep the test hole open until Mr. Beckstrom returned. Major Williams suggested that he would like to secure a well drill and try to go on down through this formation and see how much further it goes.

Tomorrow, being Saturday, we are not officially working, however, several of my men and myself will be very busy completing our new office arrangement and making

STATE MINERAL SURVEY

Works Progress Administration
Q. P. 65-65-538
OKLAHOMA GEOLOGICAL SURVEY
Norman, Oklahoma

charts and maps.

I spent Monday afternoon and part of Tuesday looking over some prospective formations in the foot hills of the Wichita Mountains. All of the remaining time the boys and myself spent in cleaning up, painting and arranging our office quarters. I now have a telephone listed under the title of State Mineral Survey, Oklahoma Geological Survey. The number being 1488, in case you ever need to call me.

I enjoyed and received a great deal of benefit from Mr. Beckstrom's visit Wednesday.

Although we regret losing Mr. Ingram we are all very highly pleased with our new district supervisor. I feel quite confident that he is the man for the place and will be of great assistance to this district. I feel that all the boys, as well as the county supervisors, will enjoy and feel it a pleasure to co-operate with him.

Thanking you for any suggestions. I remain,

Very sincerely yours,

H. A. Honour,
Comanche County Supervisor,
STATEWIDE MINERAL SURVEY.

HAH/he

cc/H. C. Beckstrom

ASPHALT

CRAIG COUNTY - W. S. Derrick, County Supv., Vinita, Okla.

Location: NE NW NW, Section 16, T 24 N - R 19 E.

Quantity: 7 inches.

Accessibility: Overburden of 12' 5".

Laboratory test:

Field sheet not found on suck deposit - 11-22-39 - JOB

Garvin Co.

COUNTY	LOCATION	AMOUNT	FIELD SHEET	BITUMEN	ASPHALT PENETRATION TEST	RESIDUE	MINERALS IDENTIFIED	USED FOR.
Garvin	36 T1N R3W	1400cu.yds	30-1	3.86	medium	96.0 Qtz Sand	Asphalt Quartz	Road topping purposes.

Garvin County Field Sheet No. 30-1 sample

Location.....SW SE NW, Sec. 36, T1N, R3W

Quantity.....1,400 cu.yds.

Accessibility.....No overburden

Laboratory tests.

Sample No. 30-1

Bitumen 3.86
Penetration test medium
Residue. Quarta sand 96.0
Minerals identified. Asphalr, Quartz.
Excellent material for road topping purposes by the addition of the proper amount of asphalt of a high penetration test.

Garvin Co.

COUNTY	LOCATION	AMOUNT	FIELD SHEET	BITUMEN	ASPHALT PENETRATION TEST	RESIDUE	MINERALS IDENTIFIED	USED FOR.
Garvin	36 T1N R3W	1400cu.yds	30-1	3.86	medium	96.0 Qtz Sand	Asphalt Quartz	Road topping purposes.

Garvin County Field Sheet No. 30-1 sample

Location.....SW SE NW, Sec. 36, T1N, R3W

Quantity.....1,400 cu.yds.

Accessibility.....No overburden

Laboratory tests.

Sample No. 30-1

Bitumen 3.86
Penetration test medium
Residue. Quarta sand 96.0
Minerals identified. Asphalr, Quartz.
Excellent material for road topping purposes by the addition of the proper amount of asphalt of a high penetration test.

JEFFERSON COUNTY ASPHALT

LOCATION	AMOUNT	F.S.#	BITUMEN	PENETRATION TEST	RESIDUE	MINERALS IDENTIFIED	USED FOR:
NE¼ Sec. 15, T4S-R4W	?	1-1	5.97	Low	98% Qtz. sand	Quartz sand Asphalt	1.Needs blending with about an even amount of cut back refinery asphalt or other asphaltic material & perhaps other aggregate to make excellent road material.
Ditto	?	1-3	4.696%	Medium	99% Qtz. sand	Asphalt Oil Quartz	1.Excellent for road topping if properly & sufficiently blended with low pen. asphalt.
Ditto	?	1-4	9.62%	Medium	Ditto	Ditto	Ditto
Ditto	?	1-5	5.74%	Low	98% Qtz, sand	Ditto	1.Excellent material for road topping if properly & sufficiently mixed with a like amount of asphalt of the same grade.
Ditto	?	1-6	11.70%	Medium	Ditto	Ditto	1.Excellent for road topping if properly & sufficiently blended with asphalt of low penetration
Ditto	?	1-7	0.10%	?	Ditto	Asphalt Quartz sand	1.The asphalt content in this sample is too low for commercial purpose.
Ditto	?	1-reprun	11.6%	High	Quartz sand	Oil Asphalt Quartz	1.Good for road topping if blended with high pen. asphalt. 2.Floor sweep base, as is.
Sec.20& 30 T3S-R4W	?	6-1					NO VALUE
Sec.23 & 24 T3S-R4W	?	13-1	9.93%	High	Quartz sand	Oil Asphalt Quartz	1.Fair road topping material. 2.Excellent floor sweep base.

JEFFERSON COUNTY ASPHALT

LOCATION	AMOUNT	F.S.#	BITUMEN	PENETRATION TEST	RESIDUE	MINERALS IDENTIFIED	USED FOR:
NE¼ SE¼ Sec. 23 T3S-R5W	?	13-2	4.22	Low	Quartz sand	Quartz Asphalt	Good for road topping.
23 3S 5W	?	13-1 re-run	10.7%	Medium	Quartz sand	Oil Quartz Asphalt	Good road topping material if mixed with a small amount of low pen. test asphalt.
NW¼ SE¼ Sec. 11 T4S-R4W	?	14-1	3.31	Medium	Quartz sand	Quartz Oil Asphalt	Good road topping material if built up with additional asphalt of proper pen. test.
SW¼ SW¼ Sec. 11 T4S-R4W	?	14-2	1.20	Medium	Quartz sand	Oil Asphalt Quartz	Bitumen content too low for industrial purposes at this time.
SE¼ NE¼ NE¼ Sec.34 T3S-R4W	?	15-1					Bitumen content entirely too low for any commercial value.
NE¼ SW¼ Sec. 25 T3S-R5W	large quantity	4-1	0.05	Medium	Quartz sand		Ditto
Ditto		4-2	18.5%	High	Quartz sand	Oil Asphalt Quartz	Excellent material for road topping if blended with sufficient quantity of high pen. test asphalt. Base material for floor sweep.
		4-3 on next page					
SE¼ NW¼ Sec. 25 T3S-R5W		4-4	10.2%	medium	Quartz sand	Oil Asphalt Quartz	Ditto
Ditto		4-5	3.03%	Medium	Quartz sand	Asphalt Quartz sand.	1. Road topping.

JEFFERSON COUNTY ASPHALT

location	AMOUNT	F.S.#	BITU-MEN	PENETRA-TION TEST	RESIDUE	MINERALS IDENTIFIED	USED FOR:
NE¼ SW¼ Sec. 25 T3S-R5W	large quantity	4-3	2.44	Medium	Quartz sand	Quartz Oil Asphalt	Good road topping material if built up with additional asphalt of the proper penetration test.

ASPHALT

Jefferson County-Field Sheet No. 1 - 6 Samples

Location:-------NE¼ Sec. 15, T4S, R4W, Owner:

Quantity:-------This asphalt does not outcrop anywhere in this vicinity. It is overlain with soil, and extends in a northwest-southeast direction over about 400'. The width is about 25'. Not a continuous deposit.

Accessibility---Deposit is 3 miles due north of the town of Ringling. The countyy road goes by this section on the east. On rainy days road is slippery and impassable. This section is 4 miles north of U.S. Highway 70, running east to Ardmore and West to Waurika. This highway is a gravel road, and during wet days it is in poor condition.

Laboratory test

Sample No. 1-1
Bitumen 5.97%
Penetration test - low
Residue - quartz sand 98%
Minerals identified: Quartz sand, Asphalt
Recommendations: This material needs to be blended with about an even amount of cut back refinery asphalt or other asphaltic material and, perhaps other aggregate, to make an excellent road material.

Sample No. 1-3
Asphalt 4.696%
Pen. test - medium
Physical Characteristics - Quartz sand 99%
Minerals identified: Asphalt, Oil, Quartz.
Recommendations: Excellent material for road topping if properly and suffieiently blended with low penetration asphalt.

Sample No. 1-4
Asphalt 9.62%
Pen. test - Medium
Physical characteristics - Quartz 99%
Minerals identified: Asphalt, Oil, Quartz.
Recommendations: Excellent material for road topping if properly and suffieiently blended with low penetration asphalt.

Sample No. 1-5
Asphalt 5.74%
Pen. test - low
Physical characteristics - Quartz sand 98%
Minerals identified: Asphalt, Oil, Quartz.
Recommendations: Excellent material for road topping if properly and sufficiently blended with a like amount of asphalt of the same grade.

Sample No. 1-6
Asphalt 11.70%
Pen. test - Medium

ASPHALT

JEFFERSON COUNTY - Field Sheet No. 1 (continued)

Laboratory test:

Sample No. 1-re-sample

Bitumen: 11.6%
Penetration test: High
Mineral residue: Essentially quartz sand
Minerals identified: Oil, Asphalt, Quartz.

Recommendations: Good material for road topping purposes if blended with high penetration test asphalt. Excellent base material, as is, for floor sweep compounds.

JEFFERSON COUNTY - Field Sheet No. 13- (continued) From where—?

Laboratory test:

Sample No. 13-1 (re-run)

Bitumen: 10.7%
Penetration test: Medium
Mineral residue: Essentially quartz sand.
Minerals identified: Oil. Quartz, Asphalt.

Recommendations: Good road topping material if mixed with a small amount of low penetration test asphalt.

JEFFERSON COUNTY - Field Sheet No. 1 (continued)

Laboratory test:

Sample No. 1-7
Bitumen: 0.10%
Penetration test: ?
Residue: 98.00% Quartz sand.
Minerals identified: Asphalt, Quartz sand
Recommendations: The asphalt content in this sample is too low for any commercial purpose.

Physical characteristics - 98% quartz sand
Minerals identified - Asphalt, Oil, Quartz.
Recommendations: Excellent material for road topping if properly and sufficiently blended with asphalt of low penetration.

Sample No. 1-7
Bitumen 0.10
Penetration test -
Residue - 98% quartz sand
Minerals identified - Asphalt, Quartz sand.
Recommendations: The asphalt content in this sample is too low for any commercial purpose.

Jefferson County-Field Sheet No. 6 - No value Not in Circular No. 19.

Location:-------Section 20 and 30 T3S, R4W

Jefferson County-Field Sheet No. 13 - 2 samples

Location:-------Sections 23 and 24, T3S, R5W. Owner:

Sample No. 13-1 (See page 1-a for re-run of 13-1)

Location-NW¼SW¼ Sec. 24, T3S, R5W.

Quantity-The asphalt outcrops in an old creek bed, and extends toward the sides of the creek and there it is overlain by sandstone locally known as Asphaltum. The subsurface extent could not be determined.

Accessibility-

Laboratory test-
Sample No. 13-1
Bitumen 9.93%
Penetration test-High
Residue---Quartz sand
Minerals identified:Oil, Asphalt, Quartz
Recommendations: Fair material for: 1.Road topping,
Excellent material for:1.Base for floor sweep.

Sample No. 13-2

Location-NE¼SE¼ Sec. 23, T3S, R5W.

Quantity-This asphalt or asphalt sand outcrops from the side of a small hill. It is about 23' in extent, wher it outcrops in sec. 23. Outcrop is overlain by a sand stone, locally known as Asphaltum. The extent of deposit was not determined because of inadaquate equipment.

Accessibility-

Laboratory test-
Sample No.13-2 Minerals identified:Quartz
Bitumen 4.22 Asphalt
Penetration test-Low Recommendations:Good
Residue-Essentially Quartz sand for road topping.

Jefferson County (Continued)

Jefferson County-Field Sheet No. 14 - 2 samples-(Too deep to be profitably developed. About 15' deep.)

Sample No. 14-1

Location-------NW¼SE¼ Sec. 11, T4S, R4W. Owner:
May be extension of Sec 15, 4S, 4W Fld. No. 1

Quantity-------Sample was obtained from test pit about 4'. The thickness of the asphalt deposit was not obtained. Only 1½ ft. of it was penetrated.

Accessibility--Road leading to Ringling, Oklahoma is well graded, but not in very good condition in rainy weather. Deposit is ½mile from Co. H.W. that leads to Ringling, which is 3½ mi. from intersection.

Laboratory test-
Bitumen: 3.31
Penetration test: Medium
Mineral residue: Quartz sand
Minerals identified: Oil, Quartz, Asphalt.

Recommendations:
Good road topping material if built up with additional asphalt of the proper penetration test.

Sample No. 14-2

Location-------SW¼SW¼ Sec. 11, T4S, R4W. Owner:

Quantity-------Sample No. 2 was obtained from a small outcrop. Asphalt was evident in a water, located in SWSWSE Sec. 11. A covering of this is reported on top of the water. Thickness of stratum is 10".

Accessibility--Deposit is about three miles from Ringling, located about 1/8 mi. off County Highway. Road to Ringling is in very good condition except in rainy weather.

Laboratory test- Bitumen: 1.20%
Penetration test: Medium
Mineral residue: Quartz sand
Minerals identified: Oil, Asphalt, Quartz.

Recommendations: Bitumen content too low for industrial purpose at this time.

Jefferson County- Field Sheet No. 15 - 1 sample In Circular No 19

Location:-------SE¼NE¼NE¼ sec. 34, T3S, R4W. Owner:

Jefferson County (Continued)

Quantity:--------This sample was obtained from an outcrop in the road. Test pit dug 100' from where it outcrops and similar sand asphalt was encountered. No other mineral substance was found within this section. Poor saturation. Depth of overburden 10" Thickness of stratum, 5'.

Accessibility---Deposit easily accessible as it is on Co. Highway about 5½ miles from Ringling, Oklahoma.

Laboratory test-

Sample No. 15-1
Bitumen: ?

Recommendations: Bitumen comtant entirely too low for any commercial value.

Jefferson County-Field Sheet No. 4 - 5 samples

Location:--------Samples 1,2,&3 in NE¼SW¼ sec. 25, T3S, R5W, Samples 4,5 are in SE¼NW¼ sec 25, T3S, R5W, Owner:

Quantity:--------Difficult to determine the extent of the deposit, as it is necessary to go down more than 10' to reach the asphalt. At point "A" the test hole was set down to 14 ft. The water level was above this depth. At "B" is a water well; the static head is about 18': asphalt seems to rise to the top of well and seal up the top. The layer, however, is thin and can be easily broken. Thickness of stratum is as follows: sample 1, 4'. Sample 2. 5'. Sample 5 - 4'. Thickness of Samples Nos. 3 and 4 not determined.

Accessibility---Overburden as follows: Sample 1 -2',Sample 2-3½', Sample 3-8', Sample 4-1½', Sample 5-1½'.
Road leads from Waurika, Oklahoma to old asphalt mine across Sec. 25, T3S, R5W. It is a dirt road with numerous small bridges, and is passable in fair weather.

Laboratory test-

Sample No. 4-1
Bitumen: 0.05
Penetration test: Medium
Residue: Quartz sand

Recommendations: Bitumen content entirely too low for any commercial purpose whatsoever.

Jefferson County- Field Sheet No. 4 Continued.

Sample No. 4-5
Bitumen----3.03
Penetration test-Medium
Residue--Practically all quartz
Minerals identified: Asphalt, Quartz sand
Recommendations:Fair material for: 1. Road topping.

Sample No. 4-2
Bitumen:-----18.5
Penetration test: High
Residue: Essentially quartz sand
Minerals identified: Oil, Asphalt, Quartz
Recommendations: Excellent material for road topping if blended with sufficient quantity of high penetration asphalt. (2) Base material for preparation of floor sweep.

Sample No. 4-4
Bitumen:-----10.2
Penetration test: Medium
Residue: Essentially quartz sand
Minerals identified: Oil, Asphalt, Quartz
Recommendations: Excellent material for: (1) Road topping purposes if blended with higher penetration test asphalt. (2) Base for floor sweep compound as is.

JOHNSTON COUNTY ASPHALT

LOCATION	AMOUNT	F.S.#	BITUMEN	PENETRATION TEST	RESIDUE	MINERALS IDENTIFIED	USED FOR:
SW¼ NW¼ Sec. 1 T4S-R4E	?	S-1	4.34	Low	79% $CaCO_3$ 21% Qtz. sand	Asphalt Quartz Calcite Oil	Excellent road material when properly and sufficiently blended.
Sec. 6 T4S-R5E	Scattered	3					NEGATIVE. Refer to F.S.No. 1 and 4.
Sec. 19 T4S-R5E Southern	?	7					NEGATIVE. Tested for asphalt and found to be a good grade of glass sand.
SW¼ NE¼ Sec. 1 T4S-R4E	?	4-1	11.89	Low	Clay 95% Quartz 5%	Asphalt Oil Quartz Calcite	Very excellent material for road topping purposes, as is.
Ditto	?	4-2	7.92%	Medium	90% Clay and L.S. 10% Qtz.,	Asphalt Oil Quartz Calcite	Good road material for topping purposes when properly and adequately blended.
Ditto	?	4-3	8.38%	Low	Asphaltic clay 70% Qtartz sand 30%	Asphalt Oil Quartz Clay minerals	Very excellent material for road topping when properly blended.
Ditto	?	4-4	8.02%	Medium	Limy clay 100%	Calcite Clay minerals	Excellent material for floor-sweep base.
NW¼SW¼SW¼ Sec. 2 T4S-R4E.		5-1					

JOHNSTON COUNTY ASPHALT

LOCATION	AMOUNT	F.S.#	BITUMEN	PENETRATION TEST	RESIDUE	MINERALS IDENTIFIED	USED FOR:
SW¼ SW¼ Sec. 20 T4S-R6E	?	14-1	6.54	High	Asphaltic Quartz sand 98%	Asphalt Oil Quartz	Good road topping when properly blended with asphalt.
Ditto	?	14-2	8.40%	Medium	Asphaltic sand 98% Qtz.	Asphalt Oil Quartz	Ditto
SW¼ NE¼ Sec. 29 T4S-R8E	?	26-1	.58%	Low	Quartz sand 100%	Asphalt Oil Quartz	Too low in asphaltic content to be of any commercial value.
Ditto	?	26-2	4.91%	High	Quartz sand 100	Ditto	This asphalt will make a good base for floor sweep.
Ditto	?	26-3	5.64	High	Qtz. sand 99%	Ditto	Ditto
Ditto	?	26-4	1.82	Medium	Quartz sand 100%	Ditto	Quantity of asphalt is low, but is of good quality for road material.
Ditto	?	26-5	5.78	Medium	Quartz sand	Ditto	Good road topping when is properly blended.
Ditto	?	26-6	3.400%	Medium	Quartz sand	Ditto	Ditto
Ditto	?	26-7	0.680%	Low	Quartz sand	Ditto	Good floor sweep base.
Ditto	?	26-8	5.36%	Low	Quartz sand	Asphalt Quartz	Excellent base for road topping material.
Secs.19, 20,29,30 T4S-R8E	?	38					Details on Field Sheet 26.

JOHNSTON COUNTY ASPHALT

LOCATION	AMOUNT	F.S.#	BITUMEN	PENETRATION TEST	RESIDUE	MINERALS IDENTIFIED	USED FOR:
SW¼ Sec. 21 T1S-R7E	?	66-1	4.20%	Very low	98% qtz. sand	Quartz Asphalt	High grade road topping, needs blending with proper amount of limestone aggregate & medium pen. test cut back refinery asphalt or other asphaltic material.
Ditto	?	66-2	4.20%	Very low	95% qtz. sand	Ditto	Ditto. Excellent road topping material but is somewhat low in Bitumens.
Ditto	?	66-3	10.06%	Very low	95% qtz. sand	Ditto	Ditto
Ditto	?	66-4	5.93%	Very low	95% qtz. sand	Ditto	Ditto
NE¼SE¼SW¼ Sec. 27 T1S-R7E	?	67-1	0.73%	High	Quartz sand		Too low in Bitumen content for commercial purposes.
Sec 33 [redacted] 1S-7E	?	67-2	0.75%	High	Quartz sand		Ditto
NE¼ NE¼ Sec. 4 T5S-R7E	60,000 cu. yds.	92-1					
Ditto	Ditto	92-2					
Ditto	Ditto	92-3					
SW¼ Sec. 32 T3S-R5E	165,000 cu.yds.	93-1					
Ditto	Ditto	93-2					

LOCATION	AMOUNT	F.S.#	BITUMEN	PENETRATION TEST	RESIDUE	MINERALS IDENTIFIED	USED FOR:
SW¼ Sec. 32 T3S-R5E	165,000 cu. yds.	93-3					
SW¼ of SE¼ Sec. 27 T4S-R8E	100,000 cu. yds.	89-1	2.6%	Medium	Quartz sand	Asphalt Quartz	Fair material for: Road material.
Ditto	Ditto	89-2	9.28%	Very high	Quartz sand	Oil Asphalt Quartz	1. Road topping. 2. Base for floor sweep.
Ditto	Ditto	89-3	8.82%	High	Quartz sand	Oil Asphalt Silica	1. Road topping, but must be mixed with asphalt of high penetration test.
E½ of NE¼ Sec. 14 T4S-R5E	10,000 cu. yds.	94-1	2.94%	High	90% Qtz. sand 10% L.S.	Oil Asphalt Quartz L.S.	Rather low in Bitumen, but will make good road topping if mixed with sufficient quantity of high pen. test asphalt.
Ditto	Ditto	94-2	3.85%	High	96% Qtz. sand 4% L.S.	Oil Asphalt Quartz sand Limestone	Good material for road topping but must be mixed with the proper amount of low penetration test asphalt.

Johnston County-Field Sheet No. 1 - 1 sample

Location-------SW¼NW¼ Sec. 1, T4S, R4E. Owner:

Quantity-------Asphalt Deposits found in an old mine on the east slope of a limestone ridge, drainage toward Mill Creek.

Accessibility--

Laboratory test-

Sample No. 1-1
Bitumen 4.34%
Penetration test - low
Physical characteristics - Residue 79% $CaCO_3$
Quartz sand 21%
Minerals identified: Asphalt, Quartz, Calcite, Oil.
Recommendations: Excellent road material when properly and sufficiently blended.

Johnston County-Field Sheet No. 3 - No samples- Negative Also Fiel Sheet 31

Location:-------Scattered over Sec. 6, T4S, R5E.
Old mine of rock asphalt and refers to F.S. No. 1 and No. 4.

Quantity--------Investigation made but no samples taken. With the exception of the extreme SW corner of sec. the area is underlain with bock carboneceous shales-with thin ferrugenious layers, interbedded with the shales.In the Sw Corner you find a white calcerious Limestone.

Johnston County-Field Sheet No. 7 - 5 samples Owner:

Location:-------Southern Part of Sec. 19, T4S, R5E. Negative

Quantity:-------Deposit is quite extensive-Outcroping occurs in Ravines. Has thickness of 50-300'.This sand outcrops under tjis escarpment of Goodland limestone, around to where the Silica plant is located, Sec. 23, in T4S, R5E, near the old town of Randolph, then west for quite a distance. De

Accessibility---This deposit is not more than 3/4 miles to a good road. Four miles to Tishomingo, Oklahoma. Not more than 1¼ miles north to C.R.I.P. R.R. The valley and ravines is covered with a heavy growth of timber.

Laboratory test- Tested for Asphalt and found to be a good grade of Glass sand.

Sample 7-1

Johnston County-Field Sheet No. 4 - 4 samples

Location-------SW¼NE¼ Sec. 1, T4S, R4E. Owner:

Quantity-------Found in old mine on the east slope of a limestone Ridge, draingge toward Mill Creek. This L.S. escarpment

Johnston County (Continued)

is known as Trinity formation. The asphalt is found in a S. S. & Congl known as Trinity S.S. To north older Paleozoic rocks - sec. 36 T3S, R4E, Asphalt mine worked in 1904-1905.

Accessibility--Topography of country around is rough with timber covered hills. At present ver in accessable but road can be build to mine.

Laboartory test-

Sample No. 4-1
Asphalt 11.89
Penetration test - low
Physical characteristics - Asphaltic limestone & clay 95%
Quartz 5%
Minerals identified: Asphalt, Oil, Quartz, Calcite.
Recommendations: Very excellent material for road topping purposes, as is.

Sample No. 4-2
Asphalt 7.92%
Penetration test - Medium
Physical characteristics - Asphaltic sand, limestone & clay90
Quartz 10%
Minerals identified: Asphalt, Calcite, Oil, Quartz.
Recommendations: Good road material for topping purposes when properly and adequately blended.

Sample No. 4-3
Asphalt 8.38%
Penetration test - low
Physical characteristics- Asphaltic clay 70%, Quartz sand 30%
Minerals identified: Asphalt, Oil, Quartz, Clay minerals
Recommendations: Very excellent material for road topping when properly blended.

Sample No. 4-4
Asphalt 8.02%
Penetration test - medium
Physical characteristics - Limy clay 100%
Materials identified: Calcite, Clay minerals
Recommendations: Excellent material for floow-sweep base.

Johnston County-Field Sheet No. 5 - 2 Samples.

Location:-------NW¼SW¼SW¼ Sec. 2, T4S, R4E. Owner:

Quantity:-------These tests were about 20 ft. in Diameter, and about a half filled up with trees growing inside. Evidence shows they had been mined some time. No evidence in ravine near by of coal outcroping.

Accessibility---Hills around covered with heavy growth of timber, and are very inaccessable.

Laboratory test-
Sample No. 5-1

Johnston County(Continued)

Johnston County-Field Sheet No. 14 - 2 samples.

Location:-------SW¼SW¼ Sec. 20, T4S, R6E. Owner:

Quantity--------Deposit covers an area of about 5 acres. The strata is from 2 to 4 ft. thick- Overburden from 1 to 5 ft.

Accessibility---On the east slope of Teller Mountain. Old Road that runs by mine is impassable, but there is a road about a quarter of a mile to the east.

Laboratory test-

Sample No. 14-1
Asphalt 6.54%
Pen. Test. - High
Physical Characteristics: Asphaltic Quartz sand, 98%
Minerals identified: Asphalt, Oil, Quartz.
Recommendations: Good road topping when properly blended with asphalt.

Sample No. 14-2
Asphalt 8.40%
Pen. Test. - Medium
Physical Characteristics- Asphaltic sand, 98% - Quartz2%
Minerals identified: Asphalt, Oil, Quartz.
Recommendations: Good road topping material when properly blended with asphalt.

Johnston County-Field Sheet No. 26 - 8 samples

Location--------SW¼NE¼ Sec. 29, T4S, R8E. Owner:

Quantity--------This deposit was found in bed of ravine,mwith exposure of approx. 200 ft. up ravine. It is in a matrix of sand, overlain by a brownish grey limestone. Deposit looks as though it is quite extensive.

Accessibility:--Along creek banks is heavy timber. Road runs S. W. from deposit and intersects a poor road about 1/16 mile from County Highway which leads to Highway No. 22.

Laboratory test-

Sample No. 26-1
Asphalt .58%

Johnston County (Continued)

Penetration test. - low
Physical Characteristics: Resideu, Quartz sand 100%
Minerals Identified: Asphalt, Oil, Quartz,
Recommendation: Too low in asphaltic content to be of any commercial value.

Sample No. 26-2
Asphalt 4.91%
Penetration test - High
Residue - Quartz sand 100%
Minerals identified - Asphalt, Oil, Quartz.
Recommendations: This asphalt sand would make a good base for floor sweep.

Sample No. 26-3
Asphalt 5.64%
Pen. test - High
Residue - Quartz sand, 99%
Recommendations: Quantity of Asphalt is low, but is of good quality for road material.

Sample No. 26-4
Asphalt 1,82%
Pen. Test. - medium
Residue - Quartz sand 100%
Minerals identified: Asphalt, Oil, Quartz.
Recommendations: Quantity of Asphalt is low, but is of good quality for road material.

Sample No. 26-5
Asphalt 5.78%
Pen. test - Medium
Residue - essentially quartz sand.
Minerals identified; Asphalt, Oil, Quartz.
Recommendations: Good road topping when properly blended.

Sample No. 26-6
Asphalt 3.400%
Pen. test - Medium
Residue - Quartz sand, 100%
Minerals Identified: Asphalt, Oil Quartz.
Recommendations: This asphalt will make good road topping when properly blended.

Sample No. 26-7
Asphalt 0.680%
Pen. test - low
Physical characteristics: Asphalt, Oil, Quartz.
Minerals identified: Asphalt, Oil, Quartz.
Recommendation: The percentage is too low ofr road topping, but would make a good base for floow sweep.

Sample No. 26-8
Asphalt 5.36%
Pen. test - low
Residue - Quartz sand, 100%
Minerals identified - Asphalt, Quartz.

Johnston County-Field Sheet No. 38 - 6 Samples- Details on Field Sheet No. 26

Location--------Secs. 19, 20, 29, 30 T4S, R8E.

Johnston County -Field Sheet No. - Negative- None Found.

Location--------Secs. 13, 14, 23, 24, T4S, R5E.

Johnston County (Continued)

Johnston County-Field Sheet No. 66 - 4 samples

Location-------SW¼ Sec. 21, T1S, R7E. - Owner:

Accessibility--This deposit is located 3½ miles east of Connerville. The nearest railway is Bromide, Okla. which is served by the M.O. and G. R. R. It is a distance of 8 miles. The road that leads to S.W. corner of the SW¼ of this section is a county road, partly gravel. could be put in good condition. The valleys and hills are partly covered with shrubs oak and heavily timbered.

Quantity-------The thickness of deposit is some where around 10 or 12 feet. Extention deposit is very hard to determine, but there appears to be a large amount of Asphalt.

Laboratory test-

Sample No. 66-1
Bitumen 4.20%
Penetration test - very low
Residue - qtz.sand 98%
Minerals identified: Quartz, Asphalt.
Recommendations: This is a very high grade material for road topping purposes, and needs only to be blended with the proper amount of limestone aggregate and the proper amount of medium Penetration test cut back refinery asphalt or other asphaltic material.

Sample No. 66-2
Bitumen 4.20%
Penetration test - very low
Residue - qtz. sand 95%
Minerals identified: Quartz, Asphalt.
Recommendations: This is very excellent road topping material but is somewhat low in Bitumens. This material needs only to be blended with the proper amount of limestone aggregate and the proper amount of cut back refinery asphalt or other asphaltic material.

Sample No. 66-3
Bitumen 10.06%
Penetration test - very low
Residue - qtz. sand 95%
Minerals identified: Quartz,Asphalt
Recommendations: This is a very excellent road topping material but is somewhat low in Bitumens. This material needs only to be blended with the Proper amount of limestone aggregate and the proper amount of cut back refinery asphalt or other asphaltic material.

Sample No. 66-4
Bitumen 5.93%
Pen. test - very low
Residue - qtz. sand 95%
Minerals identified: Quartz, asphalt.
Recommendations: This is a very high grade road topping material but is somewhat low in Bitumens. It can be blended, however, with a limestone aggregate and the proper amount of cut back

Johnston County (Continued)

refinery asphalt or other asphaltic material to make an ideal road topping material.

Johnston County-Field Sheet No. 67 - 2 Samples

Sample No. 67-1

Location:--------NE¼SE¼SW¼ Sec. 27, T1S, R7E. Owner: Loan Company

Quantity---------Width of exposure 50 ft. Dug 3½ ft. in sand deposit.

Accessibility----Road close to deposit. Better road which former intersects, is located about 3/4 mile from deposit on west.

Laboratory test--Bitumen: 0.73
Pen. test: High
Residue: Essentially quartz sand
Recommendations: Too low in Bitumen content for commercial purposes of any kind at this time.

Sample No. 67-2

Location:--------NW¼NE¼ Sec. 33, T1S, R7E. Owner: Joe Cole

Quantity---------It has an exposure of approximately 300 yds long, and forms a face or bluff, 15' or 20 ft. high.

Accessibility----A Road about 1/4 mile both East and West from deposit.

Laboratory test--Bitumen: 0.~~73~~.75
Pen. test: High
Residue: Essentially quartz sand
Recommendations: Too low in Bitumen content for commercial purposes of any kind at this time.

Johnston County-Field Sheet No. 92 - 3 samples

Location--------NE¼NE¼ Sec. 4, T5S, R7E. Owner:

Quantity---------Outcrop is about 400 yds. long and averages 4½ ft. thick. Deposit estimated at 60,000 cu. yds.

Accessibility---Near Gravel State Road. Overburden of limestone from 1 ft. to 10 ft. deep.

Laboratory test-
Sample 92-1

Johnston County (Continued)

Johnston County-Field Sheet No. 93 - 3 samples

Location-------SW¼ Sec. 23, T3S, R5E. Owner:

Quantity-------Covers the area of about 9 acres. At test No. 1 the exposure is 34 ft. thick. Overburden of deposit will average about 3 ft.

Accessibility--This deposit can be worked by building about ½ mile of road from south east corner of this section to deposit.

Laboratory test-

Sample No. 93-1

ASPHALT

JOHNSTON COUNTY - Field Sheet No. 89 - 3 Samples

Location: SW¼ of SE¼-Sec. 27, T 4 S - R 8 E.

Quantity: Outcrop shows along side of hill and is 250 yds. long and 105 yds. wide.

Accessibility: Located 3½ miles east of state highway No. 22. Found in Trinity sandstone overlain by limestone. Dotted area.

Laboratory test:

Sample No. 89-1
Bitumen: 2.6%
Penetration test: Medium
Residue: Quartz sand
Minerals identified: Asphalt, Quartz

Recommendations: Fair material for: 1. Road topping.

Sample No. 89-2
Bitumen: 9.28%
Penetration test: Very high
Residue: Essentially quartz sand
Minerals identified: Oil, Asphalt, Quartz.

Recommendations: Fair material for: 1. Road topping.
Excellent material for: 1. Base for floor sweep compounds.

Sample No. 89-3
Bitumen: 8.82%
Penetration test: High
Mineral residue: Essentially quartz sand.
Minerals identified: Oil, Asphalt, Silica.
Recommendations: Excellent for:
1. Road topping, but must be mixed with asphalt of high penetration test.

JOHNSTON COUNTY - Field Sheet No. 94 - 2 Samples

Location: E½ of NE¼ of Sec. 14, T 4 S - R 5 E.

Quantity: Deposit estimated to contain 10,000 cu. yds. Average thickness of deposit 4 ft.

Accessibility: Deposit is 2 miles south of Ravia. Outcrops in small ravine near Washita River. Overburden 5' 4". Formed in sedimentary sand deposit. Topography: Gently rolling to level bottom land with some timber along drainage.

JOHNSTON COUNTY - Field Sheet No. 94 (continued)

Laboratory test:

Sample No. 94-1

Bitumen: 2.94%
Penetration test: High
Mineral residue: 90% quartz sand
10% limestone
Minerals identified: Oil, Asphalt, Limestone, Quartz.

Recommendations:
This is rather low in Bitumen conten,t but will make good road topping if mixed with sufficient quantity of high penetration test asphalt.

Sample No. 94-2

Bitumen: 3.85%
Penetration test: High
Mineral residue: 96% quartz sand
4% limestone
Minerals identified: Oil, Asphalt, Quartz sand, Limestone.

Recommendations: Good material for road topping but must be mixed with the proper amount of low penetration test asphalt.

JOHNSTON COUNTY - Field Sheet 127

Location: NE SE SW Sec. 28, T 4 S - R 6 E.

Quantity: 9,000. 150 yds. long, 60 yds. wide, 3 ft. thick.

Accessibility: Located ½ west of State Highway #48. Poor dirt road to #48, 100 yds. north of deposit.
Topography: Very broken sand hills with heavy growth of scrub to timber.

Laboratory test:

ASPHALT

KIOWA COUNTY - Field Sheet No. 174

Location: (A) CNW ¼ SW¼, Sec. 14, T2N, R18W.
(B) CNW¼ NE¼, Sec. 14, T2N, R18W.

Quantity: (A) 45,000 cu. yd. Area, 200 yd x 75 yd x 9 feet deep.
(B) 2,000 cu. yd. Area, 50 yd x 60 yd x 2 ft. deep.

Accessibility: Depth of overburden 2 ft. (A)
Depth of overburden 0 ft. (B)

Laboratory test: C

Job Sheets 3428, 3429 no request sheet. 11/63

174-1
2

[illegible] COUNTY ASPHALT

LOCATION	AMOUNT	F.S.#	BITUMEN	PENETRATION TEST	RESIDUE	MINERALS IDENTIFIED	USED FOR:
Sec.25 T3N-R26E		Special Lab.No. 744	0.14%	High	Quartz sand		Too low in Bitumen content for any commercial value at this time.

ASPHALT

Le Flore County - Special Sheet. 1 Sample

Location: Sec.24,& 25, T 3 N - R 26 E.

Quantity: 20 to 25 ft thick for a mile long.

Accessibility: It is readily accessible, and would be a gravity haul to the railroad as well as to the highway.

b Laboratory test? Sample Le Flore Special No. 1.

Le Flore County Field Sheet SPECIAL Lab. No 744

Sample No. LeFlore Special No. 1
Bitumen 0.14
Penetration test-high
Residue---Quartz sand

Recommendations: Too low in Bitumen content for any commercial value at this time.

LeFLORE COUNTY - Field Sheet No. 53.

Location: NW NW NW Sec. 21, T 3 N - R 25 E. Blacksmiths in the vicinity of Stapp use it for fuel.
Quantity: The vein is 12 feet thick.

Accessibility: One mile from a county road down a very steep hill. It is doubtful if it can ever be developed commercially because of its inaccessibility. Uncovered entirely across its face. Situated in gully on a hillside with quantities of talus resting above. Mining would be somewhat difficult on this account.

Laboratory test:
Sample No. 53

LOVE COUNTY ASPHALT

LOCATION	AMOUNT	F.S.#	BITUMEN	PENETRATION TEST	RESIDUE	MINERALS IDENTIFIED	USED FOR:
S½ Sec.36 T7S-R3E 2E?	?	32-2	11.12%	Very low	Quartz sand	Asphalt Quartz	1. Road topping. 2. Extracted matter for asphalt paint. 3. Roofing material.
Ditto	?	32-3	11.99%	Very low	Quartz sand	Asphalt Quartz	1. Road topping. 2. Extracted matter for asphalt paint. 3. Roofing material.
Ditto	?	32-4	30.37	Very low	Quartz sand	Asphalt Quartz	This is either a natural or pyrogenous asphalt, and is excellent material for: 1. Road topping. 2. Extracted matter for asphalt paint. 3. Roofing material.
Ditto	?	32-5	7.20%	Very low	Quartz sand	Quartz Asphabt	1. Road topping.
Ditto	?	32-6	3.48%	Very low	Quartz sand	Asphalt Quartz	1. Road topping.
SW & SE¼ of SW¼ Sec. 27 T6S-R2E		S-1 a	8.17%	Low	98.97 % Qtz.sand	Asphalt Oil Quartz	Excellent for road topping when properly and sufficiently blended.
Ditto		S-1 b	5.75%	Low	94.24% Quartz	Asphalt Oil Quartz	Ditto

Lover County-Field Sheet No. 32 - 6 samples

Location-------Samples Nos. 32-1, 32-2, 33-3, 32-6 are found in S½ of Sec. 36, T7S, R2E.
Samples No. 32-5 found in NE¼NE¼ Sec. 1, T8S, R2E.
Samples 32-4 does not appear to be of sufficient quantity to be of any commercial value.

Quantity-------Samples 32-1,2,3,5,6, are intermittent outcrops of about 12 inches in thickness and all appear to be of the same stratum. They are located about half way down on hills that are about 150 ft. high. On account of the large amount of overburden of rock and soil we are unable to estimate the amount of Asphalt. It would be impracticable to try to remove this overburden with the tools we have. Thickness of stratum is about one foot, and Depth of Overburden Thirty Feet.

Accessibility--A road maintained by the county goes within a mile and a half of deposits. An old road across fields runs from the county to these deposits but would have to be repaired before it could be used by loaded trucks. The G.C. & S.F. R. R. is three miles west.

Laboratory test-

Sample No. 32-2
Bitumen 11.12%
Pen. test - very low
Residue - essentially quartz sand
Minerals identified: Asphalt, Quartz
Recommendations: This is good industrial material for 1. Road topping. 2. Extracted matter for asphalt paint. 3. Roofing material.

Sample No. 32-3
Bitumen 11.99%
Pen. test - very low
Residue - essentially quartz sand-Minerals ident: Asphalt Quartz
Recommendations: This is good industrial material for: 1. Road topping. 2. Extracted matter for asphalt paint. 3. Roofing material.

Sample No. 32-4
Bitumen 30.37%
Pen. test - very low
Residue - Essentially quartz sand - Minerals Identified: Asphalt Quartz
Recommendations: This is either a natural or pyrogenous asphalt and is excellent material for: 1. Road topping. 2. Extracted matter for asphalt paint. 3. Roofing material.

Sample No. 32-5
Bitumen 7.20%
Pen. test - very low
Residue - Essentially quartz sand. - Minerals Identified: Asphalt Quartz
Recommendations: This is good material for 1. Road topping.

Sample No. 32-6
Bitumen 3.48%
Pen. test. - very low
Residue - essentially quartz sand.
Minerals Identified: Asphalt, Quartz.

LOVE COUNTY - F.S. No. 32. (continued)

Laboratory test:
Sample No. 32-6
Recommendations: This material fair for road topping.

LOVE COUNTY - Field Sheet No. 58

Location: Section 27, T 6 S - R 2 E. SW¼ & SE¼ of SW¼ of Section.
Was operated about 20 years ago.

Quantity: The thickness of the bed is from 3 to 5 feet to 10 to 12 feet. Covers probably from 10 to 50 acres.

Accessibility: In some places the overburden is nil and some places it is as thick as 12 or 15 feet. From the Highway 77 there is a gravel road to ¼ of a mile to the pit. Pit is 2 miles from Santa Fe Railroad and 2½ miles to U.S. Highway 77.

Laboratory test:
Sample No. (S-1a) Sec. 27 - 6S - 2E
Asphalt: 8.17%
Pen. test: Low
Asphaltic sand:
Quartz sand: 89.97%
Minerals identified: Asphalt, Oil, Quartz
Recommendations: Excellent for road topping when properly and sufficiently blended.

Sample No. (S-1b) Sec. 27, 6S - 2E.
Asphalt: 5.75%
Pen. test: Low
Asphaltic sand, 94.24% Quartz
Minerals Identified: Asphalt, Oil, Quartz
Recommendations: Excellent for road topping when properly and sufficiently blended.

MARSHALL COUNTY ASPHALT

LOCATION	AMOUNT	F.S.#	BITUMEN	PENETRATION TEST	RESIDUE	MINERALS IDENTIFIED	USED FOR:
SW¼ Sec. 32, T4S-R5E	25,000 Tons	1-1	2.86%	Low	98% qtz.	Asphalt Oil Quartz	Asphalt content low, but excellent in quality for blending purposes, to be used as road topping.
Ditto	Ditto	1-2	3.60	Very low	98% qtz.	Asphalt Quartz Oil	Excellent material for road topping when properly blended.
Center N½ Sec.29 T5S, R5E.	1,000 Tons	2-1	1.96%	Medium	Asphaltic sand 98% Quartz 2%	Asphalt Oil Quartz	1. Floor sweep base.
S. line SE¼ Sec. 7 T5S-R5E	1000 Tons	3-1	4.32%	Very low	Asphaltic sand 96% Quartz 4%	Calcite Oil Asphalt Quartz	Excellent material for road topping when properly blended.
Center E½ NE¼NE¼SE¼ Sec. 22 T5S-R5E	1000 Tons	5-1	1.360%	Medium	66 2/3 qtz. 33 1/3 L.S.	Asphalt Quartz Calcite	Of no commerbial value.
Ditto	Ditto	5-2	1.97%	High	95% Qtz. sand 5% L.S.	Asphalt Calcite Oil Quartz	Has no commercial value.
SW¼ Sec. 17 T5S-R5E	2000 Tons	4-1	4.32%	Very low	98% Qtz. 2% L.S.	Asphalt Oil Quartz Calcite	Excellent material for road topping, when properly mixed.
NW¼ SW¼ Sec. 22 5S-5E	3000 Tons	6-1	1.48%	Low	66⅔ Qtz. sand 33% L.S.	Ditto	Has no commercial value.

MARSHALL COUNTY ASPHALT

LOCATION	AMOUNT	F.S.#	BITUMEN	PENETRATION TEST	RESIDUE	MINERALS IDENTIFIED	USED FOR:
SW¼ Sec. 34 T5S-R5E	1000 Cul yds.	?-1	2.06%	High	98% qtz. sand 2% L.S.	Asphalt Calcite Quartz Oil	Has no commercial value.
SW¼ NE¼ Sec. 3 T5S-R5E	500 tons	8-1	5.23%	Low	Quartz sand	Asphalt Oil Quartz	Very good for road topping when properly and sufficiently blended.
SE¼ of NE¼ Sec. 26 T7S-R5E	100 tons	9-1	5.65%	Low	Quartz Feldspar sand	Asphalt Quartz Oil	Ditto
SW¼ SW¼ Sec. 16 T6S-R4E	?	55-1				Quartz Calcite Hemetite	1. Sub wool rock. 2. Concrete aggregate
Ditto	?	55-1	10.26	Very low	Quartz sand	Asphalt Quartz	1. Road topping, as is. 2. If mixed with lighter grade oil and sawdust, good floor sweep.

ASPHALT

Marshall County-Field Sheet No. 1 - 2 samples

Location-------SW¼ Sec. 32, T4S, R5E. Owner:

Quantity-------The exposure is along the east side and west side of an outlier of the Goodland in Sec. 32, T4S, R5E. The best outcrops are in the NW-NE-SW and SE-NE-SW of the section. The asphalt is probably continuous beneath the limestone.

Accessibility-U. S. Highway, paved, is within about a half mile of outcrop. A rough road from the highway to the deposit would have to be improved for heavy hauling. Two small bridges would have to be built.

Laboratory test-

Sample No. 1-1
Asphalt 2.86%
Pen. test - low
Physical characteristics: Asphaltic sand, 98%, Quartz, 2%
Minerals identified: Asphalt, Oil, Quartz.
Recommendations: Asphalt content low, but excellent in quality for blending purposes, to be used as good road topping.

Sample No. 1-2
Asphalt 3.60%
Pen. test - very low
Physical characteristics: Asphalt, Quartz, Oil.
Minerals identified: Asphalt, Quartz, Oil.
Recommendations: Excellent material for road topping when properly blended.

Marshall County-Field Sheet No. 2 - 1 sample

Location-------Center of N½ of Sec. 29, T5S, R5E. Owner

Quantity-------Asphalt occurs irregularly in an area of about 100' by 70'. The deposit has a thickness of about 3'; is rather hard and not rich in asphalt.

Accessibility--The overburden varies considerably from 0' to about 20', and could be stripped easily. A road runs through the deposit. Transportation facilities excell

Laboratory test-

Sample No. 2-1
Asphalt 1.96%
Pen. test - medium
Physical characteristics: Asphaltic sand, 98%, Quartz, 2%
Minerals identified: Asphalt, Oil, Quartz.
Recommendations: Asphalt content too low for road topping, but can be used to good advantage as base material for floor sweep.

Marshall County-Field Sheet No. 3 - 1 sample

Location-------South line of SE¼ Sec. 7 T5S, R5E. Owner:

Is this same bed - NW17

Marshall County- (Continued)

Quantity-------This deposit is about 400 yds. long and varies in thickness from 0' to 12' being 6' thick at the samples location.

Accessibility--It is difficult to get to this deposit. The last 1½ mile is over an unimpoved road which is impassable in wet wea er. U.S. Highway No. 70 is 2½ miles to the East.

Laboratory test-

Sample No. 3-1
Asphalt 4.32%
Pen. test - very low
Physical characteristics - Asphaltic sand, 96% quartz; Limestone 4%
Minerals identified: Quartz, Oil, Asphalt, Calcite
Recommendations: Excellent material for topping when properly blended.

Marshall County-Field Sheet No. 5 - 2 samples

Location-------Center of east Half, or test holes in Owner: NE¼NE¼SE¼ Sec. 22, T5S, R5E.

Quantity-------Sample 5-2 is from an irregular body of asphalt on the west side of the creek in NENE¼E Sec. 22, T5S, R5E. The material is in the Trinity sand about 20' below the top of the Goodland L.S. The face of the Asphalt is about 18'x150', extending underneath the overburden of clay and L.S.

Accessibility--Deposits are ½ mile north of highway 48 and can be reached by an old road, which would have to be improved f heavy hauling.

Laboratory test-

Sample No. 5-1
Asphalt .360%
Pen. test - medium
Physical characteristics - 662/3% quartz; 331/3% Limestone.
Minerals identified - Asphalt, Quartz, Calcite.
Recommendations : Of no commercial value.

Sample No. 5-2
Asphalt 1.97%
Pen. test - high
Physical characteristics - Quartz sand, 95%, Limeston 5%
Minerals identified: Asphalt, Calcite, Oil, Quartz.
Recommendations: Has no commercial value

Marshall County-Field Sheet No. 4 - 1 sample

Location-------SW¼ sec. 17, T5S, R5E. Owner:

Quantity-------Asphalt is probably continuous between two ravines 125' apart

Marshall County (Continued)

Accessibility:--Deposit is near unimproved road. It is about ½ mile N.E. of the S.L. & S.F. R.R.

Laboratory test-

Sample No. 4-1
Asphalt 4.32%
Pen. test - very low
Physical characteristics - Asphaltic sand, 98% quartz; Limestone 2%
Minerals identified: Asphalt, Oil, Quartz.
Recommendations: Excellent material for road topping, when properly blended.

Marshall County-Field Sheet No. 6 - 1 samples

Location-------NW¼SW¼ Sec. 23, T5S, R5E. Owner:

Quantity-------The asphalt is exposed in the road bed for a distance of some 200 yds. and is also found in the field to the west of the road. The deposit is lenticular in shape, reaching a maximum thickness of about 6'.

Accessibility--The deposit is located about 3/8 mile north of Highway 48 along an old unimproved road; the asphalt can be removed by truck if this road is improved.

Laboratory test-

Sample No. 6-1
Asphalt 1.48%
Pen. test - low
Physical characteristics - 66 2/3% Quartz sand; 33 1/3% limestone.
Minerals identified: - Asphalt, Quartz, Calcite, Oil.
Recommendation: Has no commercial value

Marshall County-Field Sheet No. 7 - 1 sample - No commercial value

Location-------SW¼ Sec. 34, T5S, R5E. Owner:

Laboratory test-

Sample No. 7-1
Asphalt 2.06
Pen. test - high
Physical characteristics - Quartz sand 98%, Limestone, 2%
Minerals identified; Asphalt, Calcite, Quartz, Oil.
Recommendations: has no commercial value.

Marshall County -Field Sheet No. 8 - 1 sample

Location-------SW¼NE¼ Sec. 3, T5S, R5E. - Owner:

Quantity-------Small deposit about 2' thick and is exposed for some 200' along the left bank of a tributary of Oil Creek. It is overlain by about 25' of Goodland Fn.

Marshall County (Continued)

Accessibility--The deposit is easily accessible to the S.L. & S. F. R.R. and 3/8 mile from an improved road.

Laboratory test-

Sample No. 8-1
Asphalt 5.83%
Pen. test - low
Physical characteristics - Quartz sand residue.
Minerals identified: Asphalt, Oil, Quartz.
Recommendations: Very good for road topping when properly and sufficiently blended.

Marshall County-Field Sheet No. 9 - 1 sample

Location-------SE¼ of NE¼ Sec. 26, T7S, R5E. Owner---

Quantity-------Outcrops for about 150 ft. long. Thickness of Stratum 4'

Accessibility:--Outcrops on south bank of Sand Creek. There is no road from the County Road to this deposit. Apparently to small to be of commercial value.

Laboratory test:

Sample No. 9-1
Asphalt 5.64%
Pen. test - low
Physical characteristics: Essentially quartz, Feldspar sand.
Minerals identified: Asphalt, Quartz, Oil.
Recommendations: Very good for road topping when properly and sufficiently blended.

Marshall County- Field Sheet No. 55 - 2 samples

Location-------SW¼SW¼ Sec. 16, T6S, R4E. Owner---

Quantity--0----Samples taken from outcrop of the Trinity in a deep gulley. This sand is 10' thick here and overlies the clays.

Accessibility--Near Country road.

Laboratory test-

Sample No. 55-1 - Also tested for asphalt.
Bitumen 10.26%
Penetration test - Very low
Residue-Essentially quartz sand.
Minerals identified: Asphalt, Quartz.
Recommendations: Excellent material for: 1. Road topping as is. 2. If mixed with lighter grade oil and sawdust, good floor sweep.
Sample No. 55-1---This sample tested for sub-wool rock.

Sample No. 55-2

MARSHALL COUNTY * Field Sheet No. 99

Location-------SE NE NW Sec. 26, T 5 S - R 5 E.

Quantity-------Estimated 10,000 plus, cu. yd.
Outcrop 4 ft. thick, 12 ft. long.

Accessibility--About 10 ft. overburden consisting of Goodland Limestone. Is ¼ mile from a good road and can be reached by foot only; a car can be driven within 100 yds. of deposit by following a trail.

Laboratory test:

McCURTAIN COUNTY ASPHALT

LOCATION	AMOUNT	F.S.#	BITUMEN	PENETRATION TEST	RESIDUE	MINERALS IDENTIFIED	USED FOR:
NE¼ Sec.20 T7S-R24E	49,000 cu. yds	1-1-2-3-4	5.71%	Very low	98% qtz sand	Quartz Asphalt	Excellent road topping material, needs only to be blended with the proper amount of limestone or gravel aggregate, and medium pen. test cut back refinery asphalt or other asphaltic material to make an excellent road topping.
NE¼ SE¼ Sec. 22 T6S-R21E.	40 acres	2-1	6.69%	Low	Quartz sand	Asphalt Quartz	Road topping material
Ditto	Ditto	2-2	7.39%	Very low	98% qtz. sand	Asphalt Quartz	(Same as F.S. 1, above)
Ditto	Ditto	2-4	3.23%	Very low	98% qtz. sand	Asphalt Quartz	Good material for road topping but is somewhat low in Bitumen Could be built up with proper amount of L.S. or gravel aggregate & the proper amount of medium pen. test cut back refinery asphalt or other asphaltic material.

ASPHALT

McCurtain County - Field Sheets No. 1

Location: NE¼ Sec. 20, T 7 S - R 24E. In Circular No. 19

Quantity: Possibly 40 acres. blanketed with 2½ to 3 ft. of asphaltic sand.

Accessibility: Overburden of 25 ft. and the limited extend and quality, it would seem infeasable to be commercially exploited.

Laboratory test:
Sample No. 1 -
Bitumen - 5.71%
Penetration test: very low
Mineral residue: 98% qtz. sand.
Minerals identified: Quartz and Asphalt.

Recommendations:
This is a very excellent material for road topping purposes and needs only to be blended with the proper amount of limestone or gravel aggregate and the proper amount of medium penetration test cut back refinery asphalt or other asphaltic material.

McCurtain County - Field Sheet No. 2-----3 Samples

Location: NE¼ Sec. 22, T 6 S - R 21 E.

Quantity: Possibly 40 acres blanketed with 9 ft. section of asphalt in three layers.

Accessibility: Overburden 6 ft. This overburden has been stripped for a distance of 20 ft. in the process of working this deposit several years ago when small quantities of this material had been removed.

Deposit is located .95 miles northeast of Valliant, .1 of a mile northwest of the Valliant-Wright City Highway and .3 mile southeast of the T.O. & E.R.R.

Laboratory test:
Sample No. 1
Bitumen: 6.89%
Penetration test: Low
Mineral residue: Essentially quartz sand.
Minerals identified: Quartz and Asphalt.

Recommendations: This is good industrial material for:
(1) Road topping material.

McCurtain County - Field Sheets No. 2 (continued)

Laboratory test:

Sample No. 3

Bitumen: 7.39%
Penetration test: Very low
Residue: 98% quartz sand
Minerals idenentified: Quartz and Asphalt

Recommendations:

This is a very excellent material for road purposes but needs to be built up with the proper amount of limestone or gravel aggregate and the proper amount of medium penetration cut back refinery asphalt or other asphaltic material to make an ideal road topping material.

Sample No. 4

Bitumen: 3.23%
Penetration test: Very low
Residue: 98% quartz sand
Minerals identified: Quartz and Asphalt

Recommendations: This is a very excellent material for road topping purposes and needs only to be blended with the proper amount of limestone or gravel aggregate, and the proper amount of medium penetration test cut back refinery asphalt or other asphaltic material to make an excellent road topping.

MURRAY COUNTY ASPHALT

LOCATION	AMOUNT	F.S.#	BITUMEN	PENETRATION TEST	RESIDUE	MINERALS IDENTIFIED	USED FOR:
NE¼ OF SW¼ Sec. 11 T1S-R3E	Limited	21-2	11.4%	High	Quartz sand	Oil Asphalt Quartz	Fair material for: 1. Road topping. Excellent material for: 2. Base for floor sweep.
SW¼ Sec.16 T1S-R3E	?	28-1	9.38%	High	Quartz sand	Oil Asphalt Quartz	Excellent material for: 1. Base for floor sweep. Fair material for: 2. Road topping material.
SW¼ Sec.17 T1S-R3E	?	30-1	2.53%	Medium	Quartz sand	Ditto	1. Road topping purposes. 2. Floor sweep base.
NW¼ NW¼ NE¼ Sec. 20 T1S-R3E	?	31-1	9.96%	Low	96% qtz. sand 4% L.S.	Asphalt Quartz Calcite	Excellent material as is for: Road topping purposes.
NW¼ SE¼ NE¼ Sec. 22 T1S-R3E	?	8-1	3.08%	Low	95% qtz. 5% clay	Asphalt Clay Quartz	Excellent road material if properly blended with the same grade of Asphalt.
N½ SE¼ NE¼ Sec. 22 T1S-R3E	?	8-2	7.09%	Very low	20% L.S. insoluble clay 80% qtz.	Asphalt Clay Quartz Clay	Most excellent road topping material, needs to be supplemented with small amt. of the same grade of asphalt.
SE¼ NW¼ NW¼ Sec. 22 T1S-R3E	?	8-3	9.65%	High	Limestone Quartz20% Insoluble clay 80%	Asphalt Clay Quartz Calcite Oil	Oil content too high for road topping. The asphalt would make excellent base for floor sweep.
NE¼ NW¼ NW¼ Sec. 22 T1S-R3E	?	8-4	6.06%	Low	L.S. 20% quartz insoluble clay 80%	Asphalt Clay Calcite Quartz	Most excellent material for road topping, but should be supplemented with the same grade of asphalt.

MURRAY COUNTY ASPHALT

LOCATION	AMOUNT	F.S.#	BITUMEN	PENETRATION TEST	RESIDUE	MINERALS IDENTIFIED	USED FOR:
SE¼ SW¼ SW¼ Sec. 15 T1S-R3E	?	9-1	8.48%	Medium	98% qtz. sand	Quartz Asphalt	Good material needs blending with small amt. of cut back refinery asphalt or other asphaltic material to be first class material for this purpose.
SE¼ SW¼ SE¼ Sec. 15 T1S-R3E	?	9-2	9.52%	Low	Ditto	Qtz. sand Asphalt	Ditto
N½ SW¼ SW¼ Sec. 30 T1S-R3E	?	23-1	3.41%	Medium	Qtz. sand	Asphalt Quartz	Good material for: 1. Road topping.
NE NE NW Sec. 29 T1S-R3E.	?	22-1					
NW NW NE NE Sec. 4 T1S-R3E	2 Bbl. daily	47-1					
SE¼ Sec. 23 T1S-R3E	exposed ¼ mile thickness 20'.	R.H. Dott Special	11.67	Very low	50% L.S. 50% qtz. sand	Asphalt Calcite Quartz	Excellent material for road topping purposes as is.

MURRAY COUNTY - LIQUID ASPHALT

FIELD SHEET NO.:	47-1
LOCATION:	NW NW NE NE Sec. 4 T1S-R3E.
AMOUNT:	2 Bbl. daily
SPECIFIC GRAV. AS REC'D.:	13.81° A.P.I. @ 60° F.
SPECIFIC GRAV., DRY:	14.35° A.P.I. @ 60° F.
MOISTURE:	13.53
1st DROP OVER:	658.4° F.
10% " " :	698.0° F.
20% " " :	748.4° F.
30% " " :	761.0° F.
40% " " :	788.0° F.
50% " " :	788.0° F.
60% " " :	
70% " " :	
80% " " :	
90% " " :	
95% " " :	
RES:% " " :	
INITIAL BOILING POINT:	658.4° F.
END POINT:	788.0° F.
CRACKING POINT:	761.0° F.
OCTANE RATING:	N. D.
DISTILATE:	49.10%
RESIDUE:	50.90%
PENETRATION TEST:	Low

ASPHALT

Murray County - Field Sheet No. 47 1 Sample

Location: NW¼ of NE¼ of NE¼-Sec 4, T 1 S - R 3 E.
In well which belongs to Fohn Fitts.
Quantity: About 240' deep. 307 to 324 Asphalt-Pumps about 2 bbls. per. clay at present.

Accessibility: Well is on a beam.

Laboratory test:
Sample No. [illegible]

Recommendations:

Murray County - Field Sheet No. 21 1 Sample

Location: NE¼ of SW¼ of SW¼-Sec. 11, T 1 S - R 3 E.

Quantity: Deposit covers seceral acres but varies in thickness. There is a limited supply but not enough for commercial use. There is a possible chance of a thicker bed of asphalt lying below this bed.

Accessibility: More testing for this would have been done but due to water no more holes were put down where the overburden should be the least.

Laboratory test:
Sample No. 21-2
Bitumen: 11.4%
Penetration test: High
Mineral residue: Essentially Quartz sand.
Recommendations: Fair material for:
(1) Road topping.
Excellent material for:
(2) Base for floor sweep.

Minerals Identified: Oil, Asphalt, Quartz.

Murray County - Field Sheet No. 28 1 Sample

Location: SW¼ of SW¼-Sec. 16, T 1 S - R 3 E.

Quantity: This Outcrop is 40 ft. showing from 1 to 8 ft. Stratum.

Accessibility: Overburden 1 to 25 ft.

Laboratory test: Sample No. 28-1
Bitumen: 9.38%
Pen. test: High
Residue: Essentially quartz sand.
Minerals identified: Oil, Asphalt, Quartz.
Recommendations: Excellent material for: 1. Base for floor sweep. Fair material for: 2. Road topping material.

Murray County - Field Sheet No. 30 1 Sample

Location: SE¼ of SE¼-Sec. 17, T 1 S - R 3 E

Quantity: This outcrop is along Rock Creek. Length 225 ft. in bluff. Stratum 30 ft.

Accessibility: Overburden 5 to 35 ft.

Laboratory test: Sample No. 30-1
Bitumen: 2.53%
Penetration test: Medium
Mineral residue: Essentially quartz samd
Minerals identified: Quartz, Asphalt, Oil.
Recommendations: Fair material for: 1. Road topping purposes.
2. Base for material for preparation of floor sweep compounds.

Murray County - Field Sheet No. 31 1 Sample

Location: NE¼ of NE¼ of NW¼ of Sec. 20, T 1 S - R 3 E.

Quantity: This outcrop is very small and on a slope of a rocky hill.

Accessibility:

Laboratory test: Bitumen: 9.96%
Penetration test: low.
Mineral residue: 96% qtz. sand, 4% L.S.
Recommendations: Excellent material as is for road topping.
Minerals identified: Asphalt, Quartz, Calcite

ASPHALT

Murray County - Field Sheet No. 8 - 4 Samples

Location: Southern Rock Asphalt Co. owns two deposits in NW¼ of Section 22, T 1 S - R 3 E. One is now abandoned.
NE¼, SE¼, NE¼ Sec. 22, T 1 S - R 3 E, an old Rock Asphalt mine operated about 40 years ago.
NE¼, SE¼, NE¼ , same section, there is a sand asphalt outcrop.

Quantity: Vein in NE¼, SE¼, NE¼, is 10' thick.

Accessibility: There are two shafts to the old Rock Asphalt mine, the one on west is said to be about 100' deep but is full of water at present.

Laboratory test:

Sample No. 8-1
Asphalt: 3.08
Pen. test: Low
Minerals identified: Asphalt, Clay, Quartz
Recommendations: Excellent road material if properly blended with the same grade of Asphalt.

Sample No. 8-2
Asphalt: 7.09
Pen. test: Very low
Physical characteristics: Limestone: 20%
Insoluble clay; Quartz 80%
Minerals Identified: Asphalt, Clay, Quartz,
Recommendations: Most excellent road topping material, needs to be supplemented with small amount of the same grade of asphalt.

Sample No. 8-3
Asphalt: 9.65
Pen. test: High
Physical Characteristics: Limestone, quartz, 20%
Insoluble clay---- 80%
Minerals identified: Asphalt, Clay, Calcite, Oil.
Recommendations: Oil content is too high for road topping. This asphalt would make an excellent base for floor sweep.

Sample No. 8-4
Asphalt: 6.06
Pen. test: Low
Physical Characteristics: Limestone 20%
Quartz, insoluble clay 80%
Minerals identified: Asphalt, clay, Calcite, Quartz
Recommendations: This asphalt is a most excellent material for road topping, but should be supplemented with the same grade of asphalt.

ASPHALT

Murray County - Field Sheet No. 9 - 2 Samples

Location: SE¼ SW¼ SE¼ of Section 15, T 1 S - R 3 E and SW¼ SW¼ SE¼ of same. Both owned by the Southern Rock Asphalt Co.

Accessibility: Is practically on a good graded road and is 3/4 mile from power line, and about 3/4 mile from O. G. & E. sub-station and an Oklahoma pipe-line booster station. 1 3/4 mile from a State highway.
The depth of overburden in the first test area varied from 3½' to 16' and in the second area from 4' to 32'.

Laboratory test:

Sample No. 9-1
Bitumen: 8.48
Penetration test: Medium
Residue: 98.00% quartz sand.
Minerals identified: Quartz, Asphalt.
Recommendations: This is good road material and needs only to be blended with a small amount of cut back refinery asphalt or other asphaltic material to be first class material for this purpose.

Sample No. 9-2
Bitumen: 9.52
Penetration test: Low
Residue: 98.00% quartz sand.
Minerals identified: Quartz sand, Asphalt
Recommendations: This is a very high grade road topping material, and if blended with a small amount of higher penetration test asphalt and other road materials, should make an excellent road topping.

Murray County - Field Sheet No. 22 - 1 Sample

Location: NE-NE-NW, Section 29, T 1 S - R 3 E. Owned and operated by Southern Rock Asphalt Co.

Accessibility: Graded road leads up to it. Power line within a mile of it. Depth of overburden is 20 ft.

Laboratory test:
Sample No. 22-1

Recommendations:

ASPHALT

Murray County - Field Sheet No. 23 - 2 Samples

Location: NE-SW-SW, Sec. 30, T 1 S - R 3 E, location of Sample 23-1. It is operated by the Southern Rock Asphalt Co.
SW-NW-SE, Sec. 30, T 1 S - R 3 E, location of Sample 23-2. This sample came from the bed of Big Sandy Creek.

Quantity: There is an unlimited supply of material, from which Sample No. 23-2 came, all across Sec. 30. There is an unlimited amount of both materials; the extent cannot be determined due to the lack of tools for such work.

Accessibility: Sample 23-1 is about 1/8 mile from both a power line and graded road, while sample 23-2 is crossed by a graded road, and is ¼ mile from power-line. There is no overburden.

Laboratory test:

Sample No. 23-1
Bitumen: 3.41%
Penetration test: Medium
Residue: Essentially quartz sand.
Minerals identified: Asphalt, Quartz.

Recommendations: Good material for road topping.

Sample No. 23-2
Bitumen:
Penetration test:
Residue:
Minerals identified:

Recommendations:

ASPHALT

MURRAY COUNTY - Field Sheet: R. H. Dott, Special.

Location: SE¼ Sec. 23, T 1 S - R 3 E. Abandoned asphalt mine.
Quantity: Exposed for ¼ mile, Thickness: 20'.

Accessibility: Near State Highway No. 18.

Laboratory test:
Sample: Dott special.

Bitumen: 11.67%
Penetration test: Very low
Mineral residue: 50% limestone
50% quartz sand
Minerals identified: Asphalt, Calcite, Quartz.

Recommendations: Excellent material for road topping purposes as is.

OTTAWA COUNTY ASPHALT

Location	Amount	F. S.#	Bitumen	Penetration Test	Residue	Minerals Identified	Used For:

OTTAWA COUNTY - LIQUID ASPHALT

FIELD SHEET NO:	177-1	179-1	179-2	183-1	
LOCATION:	NE¼ NE¼ Sec. 17 T29N-R23E	NE¼ SW¼ Sec. 20 T29N-R23E	NE¼ SW¼ Sec. 20 T29N-R23E	NE¼ & SW¼ Sec. 19 T29N-R23E	
AMOUNT:	57,000 cu.yds.	148,000 cy	148,000 cy.	70,000 cy.	
SPECIFIC GRAV. AS REC'D.:	11.62° A.P.I. 60° F.	9.01° A.P.I. @ 60° F.	11.07° A.I.P. @60° F.	11.27° A.P.I. @ 60° F.	
SPECIFIC GRAV., DRY:	13.01° A.P.I. @ 60° F.	8.88 A.P.I. @ 60° F.	11.14° A.P.I. @ 60° F.	11.76° A.P.I @ 60° F.	
MOISTURE:	44.83%	13.41%	5.47%	30.94%	
1st DROP OVER:	707.0° F.	644.0° F.	698.0° F.	710.6° F.	
10% " " :	734.0° F.	698.0° F.	734.0° F.	737.6° F.	
20% " " :	755.6° F.	725.0° F.	761.0° F.	770.0° F.	
30% " " :	770.0° F.	743.0° F.	779.0° F.	778.0° F.	
40% " " :	788.0° F.	750.0° F.	788.0° F.	788.0° F.	
50% " " :	788.0° F.	752.0° F.	800.0° F.		
60% " " :					
70% " " :					
80% " " :					
90% " " :					
95% " " :					
RES.% " " :					
INITIAL BOILING POINT:	707.0° F.	644.0° F.	698.0° F.	710.6° F.	
END POINT:	788.0° F.	752.0° F.	800.6° F.	788.0° F.	
CRACKING POINT:	788.0° F.	725.0° F.	788.0° F.	788.0° F.	
OCTANE RATING:	N. D.	N. D.	N. D.	N. D.	
DISTILATE:	48.1%	49.3%	49.94%	47.50%	
RESIDUE:	51.9%	50.7%	49.59%	52.50%	
PENETRATION TEST	Low	Low	Low	Low	

ASPHALT

OTTOWA COUNTY - Field Sheet No. 177 - 1 Sample

Location: NE¼ NE¼ Sec. 17, T 29 N - R 23 E. Owner: Eagle-Pitcher Lead and Zinc Co.

Quantity: Drippings in mines. Tar found below shale on top of and sometimes under limestone and flint beds. The Crawfish Mine has a quantity of tar in the upper level.

Accessibility: Of course the mines have railroad connections and good highways already established.

Laboratory test:

OTTAWA COUNTY - Field Sheet No. 179 - 2 Samples.

Location: NE¼ SW¼ Sec. 20, T 29 N - R 23 E. Owner: The Eagle-Pitcher lead and Zinc Co. and Evans-Wallower Lease Owners.

Quantity: Tar found below shale on top of and sometimes in underlying limestone.

Accessibility:

ASPHALT

OTTAWA COUNTY - Field Sheet No. 179 - 2 Samples.

Location: South Half of Section 20, T 29 N - R 23 E. All Lease owned by the Eagle-Pitcher Lead and Zinc Company and Evans-Wallower.

Quantity:

Accessibility: In mines.

Laboratory test:
Sample No. 179-1

OTTAWA COUNTY - Field Sheet No. 183 - 1 Sample (Liquid Asphalt)

Location: NE¼ and SW¼ Sec. 19, T 29 N, R 23 E. (Anna Beaver Lease) Owned by the Commerce Mining & Royalty Co.

Quantity:

Accessibility: In mine district.

Laboratory test:
Sample No. 183-1.

ASPHALT

OTTOWA COUNTY - Field Sheet No. 171 ----

Location: NW¼ Sec. 19, T 29 N - R 23 E.
Eagle-Pitcher Lead and Zinc Co. owners.

Quantity: Drill Hole No. 37. Tar found between 135 & 150'
" " No.T F 1. " " " 70 & 75'
" " No. 26. " " " 120 & 130'
" " No. 33. " " " 140 & 145'

SE¼-NE¼ Sec. 19, T 29 N - R 23 E
Commerce Mining & Royalty Co. (Anna Beaver lease owner)
Drill Hole No. W286. Tar found between 113 and 125'
" " No. W202. " " " 120 and 125'

Accessibility: Tar found below Shale on top of and sometime in the underlying limestone. Served by the same facilities that serve the Eagle-Pitcher Lead and Zinc Co. mines.

OTTOWA COUNTY - Field Sheet No. 173 ----

Location: SW¼ of Sec. 19, T 29 N - R 23 E. Velie Lion, owner.

Quantity: Drill Hole No. 37. Tar found between 150 & 165'
" " No. 53. " " " 215 & 225'
" " No. 59. " " " 155 & 165'
" " No. 65. " " " 145 & 200'
" " No. 92. " " " 135 & 140'
" " No. 95. " " " 125 & 145'
" " No. 137. " " " 140 & 150'
" " No. 142 " " " 215 & 225'
" " No. 291 " " " 110 & 120'

NW¼-SW¼ Sec. 19, T 29 N - R 23 E
Drill Hole No. 166. Tar found between 130 & 145'
" " No. 167. " " " 165 & 175'
" " No. 171. " " " 165 & 170'
" " No. 174. " " " 170 & 180'
" " No. 300. " " " 175 & 195'
" " No. 338. " " " 135 & 140'
" " No. 339. " " " 140 & 165'
" " No. 354. " " " 170 & 180'

NE¼-SW¼ Sec. 19, T 29 N - R 23 E
Drill Hole No. 50L. Tar found between 150 & 165'
" " No. 60L. " " " 160 & 170'
" " No. 73L. " " " 140 & 160'
" " No. 78L. " " " 140 & 150'
" " No. 267. " " " 160 & 170'
" " No. 269. " " " 165 & 170'
" " No. 389. " " " 170 & 180'
" " No. 400. " " " 160 & 165'
" " No. 401. " " " 140 & 160'

Accessibility: Tar found below Shale and top of and sometime in the underlying Limestone.
Served by the same facilities that serve the Velie Lion mines.

ASPHALT

OTTOWA COUNTY - Field Sheet No. 175 ----

Location: SE¼ Section 19, T 27 N - R 23 E.
Commerce Mining and Royalty Co., John Beaver lease owner.

Quantity: SW¼-SE¼ Section 19, T 29 N - R 23 E
Drill Hole No. 8. Tar found between 125 & 135'
NW¼-SE¼ Section 19, T 29 N - R 23 E

Drill	Hole	No. 106.	Tar	found between	150 & 160'
"	"	No. 126.	"	"	170 & 175'
"	"	No. 116.	"	"	150 & 160'
"	"	No. 115.	"	"	95 & 135'
"	"	No. 111.	"	"	130 & 145'
"	"	No. 117.	"	"	155 & 175'

Accessibility: Tar found below Shale and on top of and sometime in the underlying Limestone. Served by the same facilities that serve the Commerce Mining and Royalty Co. mines.

OTTOWA COUNTY - Field Sheet No. 181 ----

Location: Section 18, T 29 N - R 23 E.
Federal-Gordon lease owners. Not being operated at the present time.

Quantity: NW¼-SE¼-Section 18, T 29 N - R 23 E.

N 40A	Drill Hole	No. F105.	Tar found	between	84 & 110'
"	"	No. F166.	"	"	110 & 135'
"	"	No. F108.	"	"	75 & 140'
"	"	No. F 109	"	"	90& 130'
"	"	No. F60.	"	"	85 & 170'
"	"	No. F 19	"	"	61 & 75'
"	"	No. F 58	"	"	100 & 110'
"	"	No. F176	"	"	95 & 105'
"	"	No. F119	"	"	100 & 135'
"	"	No. F 81	"	"	95 & 115'

SE¼-SE¼ Section 18, T 29 N - R 23 E.

SE 40A	Drill Hole	No. F61	Tar	Found between	120 & 145'
"	"	No. F165	"	"	160 & 165'
"	"	No. F150	"	"	115 & 155'
"	"	No. 152	"	"	145 & 155'
"	"	No. B 10	"	"	182 & 188'

SW¼-SE¼ Section 18, T 29 N - R 23 E.

SW 40A	Drill Hole	No. F 90	Tar found	between	90 & 140'
"	"	No. F 80	"	"	100 & 140'
"	"	No. F 82	"	"	70 & 100'
"	"	No. F 85	"	"	205 & 210'
"	"	No. F101	"	"	85 & 165'
"	"	No. F100	"	"	170 & 185'
"	"	No. F167	"	"	100 & 120'
"	"	No. F 41	"	"	95 & 185'

OTTOWA COUNTY - Field Sheet No. 188

Location: Section 16, T 29 N - R 23 E.
Lease owned by Cortez-King Brand Mines Co.

Quantity: Section 16; T 29 N - R 23 E.

Drill Hole	No. F 13.	Tar found	between	150'	& 165'
" "	No. F 43.	"	"	105'	& 130'
" "	No. F-57	"	"	100'	& 105'
" "	No. F 61	"	"	135'	& 145'
" "	No. F 62	"	"	125'	& 135'
" "	No. F 64	"	"	135'	& 140'
" "	No. F 65	"	"	105'	& 110'
" "	No. F 66	"	"	135'	& 145'
" "	No. F 83	"	"	115'	& 125'
" "	No. F104	"	"	115'	& 150'

Accessibility: Tar found below Shale and on top of and sometimes in underlying Limestone.
Served by the same facilities that serve the Cortex-King Brand Mines Co.

OTTAWA COUNTY - Field Sheet No. 190

Location: Section 24, T 29 N - R 22 E.
Lease owner, Eagle-Picher Mining Co.

Quantity: North Drill Hole--No. 10 Tar found 95'-145'
South " " --No. 80 " " 110'-120'

Accessibility: Tar found below shale on top of and sometimes in underlying limestone.

OTTAWA COUNTY - Field Sheet No. 192

Location: Section 23, T 29 N - R 22 E.
Eagle-Picher--Lease Owners.

Quantity:

Kavier Mine--Drill Hole	No. 607	Tar found		316'-320'
" " "	No. 600	"	"	310'-315'
Adams Mine--- " "	No. 82	"	"	320'-325'
Mudd Mine " "	No. 120	"	"	305'-310'

Accessibility: Tar is below shale on top of and sometimes in the underlying Limestone and Chert beds.
Served by same facilities that serve the Eagle-Pitcher mines.

ASPHALT

OTTAWA COUNTY - Field Sheet No. 194

Location: Section 13, T 29 N - R 21 E.
Lease owned by Boston Mining & Royalty Co.

Quantity: SE¼-NE¼ Section 13, T 29 N - R 21 E.

Drill Hole	No. 2.	Tar found	between	230'-240'
"	" No. 14.	"	"	"	205'-210'

SW¼-NE¼

Drill Hole	No. 5.	Tar found	between	220'-235'
"	" No. 10B.	"	"	"	220'-235'
"	" No. 13.	"	"	"	235'-265'
"	" No. 14.	"	"	"	230'-235'
"	" No. 15.	"	"	"	210'-240'
"	" No. 20.	"	"	"	220'-235'
"	" No. 25.	"	"	"	235'-255'
"	" No. C-37.	"	"	"	169'-205'
"	" No. C-5	"	"	"	225'-235'
"	" No. C-9	"	"	"	185'-205'

NW¼-NE¼

Drill Hole	No. C-17	Tar found	between	197'-230'
"	" No. C-19	"	"	"	277'-295'
"	" No. C-20	"	"	"	193'-225'
"	" No. C-27	"	"	"	225'-240'
"	" No. C-31	"	"	"	215'-245'
"	" No. C-32	"	"	"	206'-230'
"	" No. C-33	"	"	"	270'-205'
"	"				

NE¼-NW¼

Drill Hole	No. C-44	Tar found	between	205'-215'
"	" No. C-43	"	"	"	220'-250'
"	" No. C-38	"	"	"	185'-220'
"	" No. C-50	"	"	"	190'-230'

Accessibility: Tar found below shale, on top of and sometimes in the underlying Limestone.

ASPHALT

OTTAWA COUNTY - Field Sheet No. 293 See F.S. Nos. 169,171,173,175, 181,188.

Location: Sections 16,17,18,19,20 T 29 N, R 23 E.

Quantity: Area A-Velie-lion Lease-11 ft.-5 Acres 130,000 cu. yds. SW¼ SEc. 19-29N-23E.
Area B-Velie-Loin Lease-12 ft.-7 Acres 124,000 cu. yds. SW¼ Sec. 19-29N-23E.
Area C-Velie-Lion Lease-16 ft. 5 Acres 118,000 cu. yds. SW¼ Sec. 19-29N-23E.
Area D-Commerce Mining & Roayalty John Beaver Lease 17 ft. 8 Acres 202,000 cu. yds. SE¼ Sec. 19-29N-23E.
Area E-Evans-Walower No. 8 Lease-20 ft. 5 Acres 148,000 cu. yds. Sec 20-29N-23E.
Area F-Federal Gordon Lease 34 ft. 25 Acres 1,260,000 cu. yds. SE Sec. 18-29N-23E.
Area G-Federal Gordon Lease 28 ft. 30 acres1,243,000 cu. yds. SE Sec 18-29N-23E
Area H-Cortez King Brand Cortez Lease 12 ft. 10 acres 178,000 cu. yds. SE Sec. 16-29N-23E.
TOTAL 3,403,000 cu. yds.

Scattered Hole Av. 17 feet---9½ acres.

Velie Lion Lease	6 Holes	44,000 cu. yds.	SW¼ Sec.	19-29N-23E
Eagle-Picher-Tri-State Lease	1 hole	2,000 cu. yds.	NW NW "	19-29N-23E
Commerce Mining & Royalty John Beaver Lease	1 Hole	4,000 cu. yds.	SE "	19-29N-23E
Eagle-Picher Goodwin Lease	2 Holes	24,000 cu. yds.	SWNENE"	17-29N-23E
Eagle-Picher Foch Lease	1 Hole	6,000 cu. yds.	NE NE "	19-29N-23E
Eagle-Picher Alexander Lease	2 Holes	6,000 cu. yds.	SW NW "	19-29N-23E
Commerce Mining & Royalty Anna Beaver Lease	2 Holes	6,000 cu. yds.	SE NW "	19-29N-23E
EaglepPicher-La Salle Lease	2 holes	29,000 cu. yds.	SWSWNE"	17-29N-23E
Eagle-Picher-Crawfish Lease	1 Hole	2,000 cy. yds.	NESESE"	17-29N-23E
Eagle-Picher-Howe Lease	1 Hole	2,000 cu. yds.	SESESW "	17-29N-23E
Evans-Wllower No. 8 Lease	1 Hole	2,000 cu. yds.	"	20-29N-23E
Eagle-Picher-OKO Lease	2 Holes	15,000 cu. yds.	SE¼SE¼"	20-29N-23E
Federal-Gordon Lease	3 Holes	26,000 cu. yds	SE	18-29N-23E
Commerce Mining & Royalty Anna Beaver Lease	9 Holes	70,000 cu. yds.	SE¼ "	19-29N-23E
Cortez-King Brand-Cortez lease	4 Holes	23,000 cu. yds.	SE "	16-29N-23E
	TOTAL	361,000 cu. yds.		
	GRAND TOTAL	3,664,000 cu. yds.		

(cont) OTTAWA COUNTY - Field Sheet No. 293

Accessebelity: Of course the mines have railroad connections and good highways already established.

Laboratory test:

OTTAWA COUNTY - Field Sheet No. 294 See R.S. Nos 186,190,192

Location: Sections23&24 T 29 N - R 22 E

Quantity: Scattered Holes--Av. 13 Feet--1½ acres.

Eagle-Picher--Kitty Lease	NENESE Sec. 24-29N-23E	
2 Holes		22,000 cu. yds.
Eagle-Picher--Xauier Lease	NWNE Sec. 23-29N-23E	
2 Holes		4,000 cu. yds.
Eagle-Picher--Adams Lease	SENENE Sec. 23-29N-23E	
1 Hole		2,000 cu. yds.
Eagle-Picher--Mudd Lease	NESENE Sec. 23-29N-23E	
1 Hole		2,000 cu. yds.
	TOTAL	30,000 cu. yds.

Accessibility: Of course the mines have railroads connections and good highways already established.

Laboratory test:

ASPHALT

OTTAWA COUNTY - Field Sheet No 295

Location: Sec. 13 T 29 N-R 21 E

Quantity: Area A Boston Mining & Royalty 200,000 cu. yds.
Area B Boston Mining& Royalty 563,000 cu. yds.
Area A-Av. 27 Feet-5 Acres TOTAL
Area B-Av. 19 Feet-20 Acres [illegible] cu. yds.

Boston Mining & Roualty 2 Holes 26,000 cu. yds.

GRAND TOTAL
789,000 cu yds.

Accessibility: Of course the mines have railroad connections and good Highways already established.

Laboratory test:

OTTAWA COUNTY - Field Sheet No. 366

Location: S½ Sec. 17 and SE SE Sec. 18, T 29 N - R 23 E.
Operated by Eagle-Picher Mining & Smelting lease.
That in Sec. 18, by Federal Mining & Smelting Co.

Quantity: Depth of overburden and thickness of stratum are unknown.

Accessibility: Served by the same facilities which are used in mining the shafts.

Laboratory test:

ASPHALT

OTTAWA COUNTY - Field Sheet No. 367

Location: N½ NE¼ Sec. 24, T 29 N - R 22 E. Commerce Mining & Royalty Co.

Quantity: Depth of overburden and thickness of stratum unknown. Asphalt flows easily.

Accessibility: Served by the same facilities that serve the Commerce Mining & Royalty Co.

Laboratory test:

Pisher Co. Asphalt

ASPHALT FROM LEAD-ZINC MINE

Asphalt sample in pail was received from Henry Hess, Picher Roofing Company, Picher, Oklahoma. The asphalt is obtained from the Gordon Lease, SW. 40 mine. Mr. Hess states that he uses from 35 to 50 barrels of this asphalt per month for roofing purposes. He also stated that he gets some asphalt from other mines than the Gordon.

The rate of accumulation of the tar on the SW. 40 acres of the Gordon Lease is estimated by Mr. Johnson and Mr. P.XY- George of the Federal Mining and Smelting Company as about five to six barrels per week. The tar drips down from the roof of the abandoned stopes from a roof area of about one-half acre. The tar is collected from small pools on the floor of the stopes, the total area of the pools being about 20 by 100 feet. The tar is dipped up and put into barrels and the barrels hoisted out the mining shaft, known as the Tar Shaft of the Gordon Mine.

Sept. 1929. S. Weidman.

PONTOTOC COUNTY ASPHALT

LOCATION	AMOUNT	F.S.#	BITUMEN	PENETRATION TEST	RESIDUE	MINERALS IDENTIFIED	USED FOR:
SW¼ NW¼ Sec. 31 T4N-R6E	20' thick	20-1	3.76%	Medium	Asphaltic sand mixture. 25%calcite 75% Qtz.	Asphalt Oil Calcite Quartz	Excellent base for floor sweep.
Ditto	?	20-2	2.44%	Low	Asphaltic sand 98% L.S. 2% Qtz.	Asphalt Oil Calcite Quartz	% of Asphalt low, but excellent quality, good road topping material when properly blended.
Ditto	?	20-3	3.34%	Medium	90% Qtz. 10% L.S.	Asphalt Oil Quartz Calcite	Good road topping if properly and sufficiently blended
NW Sec.31 T4N-R6E		36-1	1.06%	High	33% L.S. 66% Qtz. & clay	Asphalt Oil Quartz Calcite	Too low to be of any commercial value.
Ditto		36-2	3.52%	Low	10% L.S. 90% Qtz & clay	Asphalt Quartz Calcite Clay	Good for road topping if properly and sufficiently blended.
Ditto		36-3	3.42%	Low	25% L.S. 75% Qtz. & clay	Asphalt Calcite Quartz	Ditto
Ditto		36-4	3.88%	Low	10% L.S. 90% Qtz. & clay	Asphalt Quartz Calcite Clay	Ditto
Ditto		36-5	11.20%	Medium	Qtz. 95% Clay 5%	Asphalt Oil Quartz Clay	Needs blending with heavy asphalt for good topping. Enough bitumen but pen. is too high.

PONTOTOC COUNTY ASPHALT

LOCATION	AMOUNT	F.S.#	BITUMEN	PENETRATION TEST	RESIDUE	MINERALS IDENTIFIED	USED FOR:
NW Sec. 31 T4N-R6E	?	36-6?	3.58	Medium	20% L.S. Insoluble clay, Qtz, HCL80%	Asphalt Oil Clay Quartz Calcite	Good for road topping if properly and sufficiently blended with a low penetration asphalt.
Ditto	?	36-7	5.94%	Low	20% L.S. Insoluble clay, Quartz, 80%	Asphalt Calcite Clay Quartz	Excellent road topping material if supplemented & adequately blended with similar asphalt.
Ditto	?	36-8	3.28%	Medium	20% L.S. Quartz, insoluble clay, 80%	Asphalt Oil Clay Quartz Calcite	Good road topping if adequately and properly blended with low penetration asphalt.
NE NE SW Sec. 12 T3N-R5E	600' long 3' thick	41-1	2.6	Low	Quartz sand	Quartz Asphalt	Road topping, but must be built up with an additional quantity of low or medium penetration test asphalt.
SW¼ NW¼ Sec. 28 T2N-R6E	?	48-3	12.2%	Very low	Small L.S. Large Qtz sand	Calcite Quartz	Road topping. Should be blended with asphalt of medium pen. (May 1,1936)
Ditto	?	48-1	8.87%	Low	90% Qtz. sand 10% L.S.	Asphalt Quartz Limestone	Excellent material as is for Road topping.(May 2)
Ditto	?	48-2	3.41%	High	90% qtz. sand 10% L.S.	Oil Asphalt Quartz Calcite	Fair material for 1. Road topping. 2. Floor sweep base.

PONTOTOC COUNTY ASPHALT

LOCATION	AMOUNT	F.S.#	BITUMEN	PENETRATION TEST	RESIDUE	MINERALS IDENTIFIED	USED FOR:
SW¼ NW¼ Sec. 28 T2N-R[illegible]	?	48-4	7.73%	Low	80% qtz. sand 20% L.S.	Asphalt Quartz Calcite	Excellent material as is for: 1. Road Topping.
Ditto	?	48-5	12.04%	Medium	Quartz sand	Quartz	Excellent material as is for: 1. Road topping purposes. 2. Floor sweep base.
Ditto	?	48-5 re-check	18.87	High	Equal quantities of L.S. & Qtz. sand	Oil Asphalt Calcite Quartz	Excellent material for: 1.Base for floor sweep. 2.Road topping if blended with the proper amount of high penetration test asphalt.

ASPHALT

PONTOTOC COUNTY - Field Sheet No. 20 - 3 Samples

Location: SW¼ NW¼ Sec. 31, T 4 N - R 6 E. The land is owned by anMrs. Carney of Ada, Oklahoma, but at the present time is in court due to a suit against the lease holder by the owner of theequipment.

Quantity: About 20 acres. Thickness of stratum: 20'

Accessibility: Fair road from deposit to Highway No. 19. One-fourth mile north of section line.

Laboratory test:

Sample 20-1

Asphalt: 3.76%
Penetration test: Medium
Asphaltic sand mixture, Calcite 25% Quartz 25%

Minerals identified: Asphalt, Oil, Calcite, Quartz.

Recommendations: Excellent base for floor sweep.

Sample 20-2

Asphalt: 2.44%
Penetreiontest: Low
Physical Characteristics: Asphaltic Sand 98%
Limestone 2% Quartz.
Minerals identified: Asphalt
Oil
Calcite
Quartz

Recommendations: Percent of asphalt low, but excellent quality; good road topping material when properly blended.

Sample 20-3

Asphalt: 3.34%
Penetration test: Medium
Physical Characteristics: Quartz 90%
Limestone 10%
Minerals identified: Asphalt
Oil
Quartz
Calcite

Recommendations: Good road topping if properly and sufficiently blended.

PONTOTOC COUNTY - Field Sheet No. 36 - 8 Samples

Location: NW¼ NW¼ Sec. 31, T 4 N - R 6 E. Owner: Mrs. Carney appears to be

In Circular No. 19 this deposit ~~is described~~ as in 36-T4N-R5E.

Quantity: Area not given (This may be the same area covered by Field Sheet No. 20)

Accessibility: Pit 26' deep.

PONTOTOC COUNTY - Field Sheet No. 36 (continued)

Laboratory test:

Sample 36-1
Asphalt 1.06
Penetration test: High
Physical Characteristics: Limestone 33%
Quartz and Clay 66%
Mineral identified: Asphalt, Oil, Calcite, Quartz.
Recommendations: Too low to be of any commercial value.

Sample 36-2
Asphalt 3.52
Pen. test: Low
Physical Characteristics: Limestone 10%
Quartz and clay 90%
Minerals identified: Asphalt, Quartz, Calcite, Clay.
Recommendations: Good for road topping if properly and sufficiently blended.

Sample 36-3
Asphalt: 3.42%
Pen. test: Low
Physical Characteristics: Limestone 25%.
Quartz and clay 75%
Minerals identified: Asphalt
Calcite
Quartz
Recommendations: Good material for road topping if properly and sufficiently blended.

Sample 36-4
Asphalt 3.88%
Pen. test: Low
Physical Characteristics: Limestone 10%
Quartz and clays 90%
Minerals identified: Asphalt, Quartz, Calcite, Clay.
Recommendations: Good for road topping if properly and sufficiently blended.

Sample 36-5
Asphalt 11.20%
Pen. test: Medium
Physical Characteristics: Quartz 95%; Clay 5%
Minerals identified: Asphalt, Oil, Quartz, Clay.
Recommendations: This material must be blended with heavy asphalt for good road topping. It has sufficient bitumen, but the penetration is too high.

ASPHALT

PONTOTOC COUNTY - Field Sheet No. 36 (continued)

Laboratory test:

Sample No. 36-6
Asphalt 3.58%
Pen. test: Medium
Physical Characteristics: Limestone 20%
Insolubile clay, quartz HCl 80%
Minerals identified: Asphalt, Oil, Clay, Quartz, Calcite.
Recommendations: Good for road topping if properly and sufficiently blended with a low penetration asphalt.

Sample No. 36-7
Asphalt: 5.94%
Pen. test: Low
Physical Characteristics: Limestone 20%
Insoluble clay, quartz 80%
Minerals identified: Asphalt, Calcite, Clay, Quartz.
Recommendations: Excellent road topping material if supplemented and adequately blended with similar asphalt.

Sample No. 36-8
Asphalt: 3.28%
Pen. test: Medium
Physical Characteristics: Limestone 20%
Quartz, Insoluble clay 80%
Minerals identified: Asphalt, Oil, Clay, Calcite, Quartz.
Recommendations: Good road topping if adequately and properly blended with low penetration asphalt.

PONTOTOC COUNTY - Field Sheet No. 41 - 1 Sample

Location: NE¼ NE¼ SE¼ Sec. 12, T 3 N - R 5 E. C.F.Armstrong, Owner.

Quantity: A three foot ledge of asphalt outcrops along creek bank for 600 ft. Dip 4 or 5 degrees to NW. Extent not ascertained.

Accessibility: Overburden 6' at the outcrop, and increased to NW. There is a good road leading up within an eighth of a mile. A good road could be constructed down to the outcrop very easily. There is a railroad running through the north half of the section and the State Highway No. 12 is only three-fourths mile east.

Laboratory test:

Sample 41-1
Bitumen: 2.6
Pen. test: Low
Residue: Essentially quartz sand
Minerals Identified: Quartz, Asphalt
Recommendations: Excellent material for road topping purposes, but must be built up with an additional quantity of low or medium penetration test asphalt.

ASPHALT

PONTOTOC COUNTY - Field Sheet No. 48 - 5 Samples

Location: SW¼ NW¼ Sec. 28, T 2 N - R 6 E. Owner: Once worked. Quite a bit removed.

Quantity: Unlimited. Width of outcrop 100'. Thickness of stratum 10' to 40'.

Accessibility: Oil trail road that once was used to haul the material out that lead to the northwest corner, of Section 29 where there is a fair section line r road. Proposed Roff and Fittstown highway will run on the North side of the section when completed. Overburden 2' to 8'.

Laboratory test:

Sample No. 48-1 ~~(May 2, 1936)~~ 0f

Bitumen: 6.87%

Penetration test: Low

Mineral residue: 90% quartz sand
10% limestone

Minerals identified: Asphalt, Quartz, Limestone.

Recommendations: Excellent material as is, for:
(1) Road topping.

Sample No. 48-2

Bitumen: 3.41%

Penetration test: High

Mineral residue: 90% quartz sand
10% limestone

Minerals identified: Oil, Asphalt, Quartz, Calcite.

Recommendations: Fair material for: (1) Road topping.
(2) Base for floor sweep compounds.

Sample No. 48-4 (may 2, 1936)

Bitumen: 7.73%

Penetration test: Low

Mineral residue: 80% quartz sand
20% limestone

Minerals identified: Asphalt, Quartz, Calcite.

Recommendations: Excellent material as is, for:
(1) Road topping.

Sample No. 48~~-3~~ ~~(May 1, 1936)~~ 48-3

Bitumen: 12.2%

Penetration test: Very low.

Mineral residue: Small amt. limestone, large amount quartz sand.

Minerals identified: Calcite, Quartz, Asphalt.

Recommendations: Very excellent material for: 1. Road topping purposes. Should be blended with asphalt of medium penetration.

ASPHALT

PONTOTOC COUNTY - Field Sheet No. 48 (continued)

Laboratory test:

Sample No. 48-5
Bitumen: 12.04%
Penetration test: Medium
Mineral residue: Essentially quartz sand.
Minerals identified: Quartz

Recommendations: Excellent material as is for:
1. Road topping purpose.
2. Base for floor sweep.

Sample No. 48-5 (re-sampled)
Bitumen: 18.87
Penetration test: High
Mineral residue: Equal quantities of Limestone and quartz sand.
Minerals identified: Oil, Asphalt, Calcite, Quartz.
Recommendations: Excellent material for:
1. Base for floor sweep.
2. Road topping if blended with the proper amount of high penetration test asphalt.

PUSHMATAHA COUNTY ASPHALT

LOCATION	AMOUNT	F.S.#	BITUMEN	PENETRATION TEST	RESIDUE	MINERALS IDENTIFIED	USED FOR:
NE¼ NW¼ Sec. 28, T1S-R15E		16-1	2.38%	Very low	75% qtz. sand 25% clay minerals	Quartz Clay minerals	Bitumenus low, but quality good. Good for road topping. Needs building with sufficient cut back refinery asphalt or other asphaltic material to make first class material.
Ditto		16-2	12.82%	Very high	89% qtz. sand	Oil Quartz sand	Excellent material <u>as is</u> for floor sweep.

ASPHALT

PUSHMATAHA COUNTY - R. M. Holland, County Supv., Antlers, Okla.

Location: SE Corner SE¼ SE¼, Sec. 16, T 1 S - R 16 E.

Quantity:

Accessibility: In bottom of water well, which is 35' deep and has a Static Head of 33'. The Asphalt is in the nature of an Aquifer. No more information given.

Laboratory test:

ASPHALT

PUSHMATAHA COUNTY - Field Sheet No. 16 - 2 Samples

Location: NE¼ NW¼ Sec. 28, T 1 S - R 15 E. Owner:
Just adjacent to the town of JUMBO, OKLA.
Information may be had from A.W.Thompson, Mining Engineer of Tulsa.

Quantity: Grahamite was mined intermittently for a number of years, beginning 1891 and continuing until 1910, when an explosion of gas killed several men, injuring several others, and operations were discontinued. It was re-opened again and discontinued indefinitely in 1916, and is at present apparently abandoned.
Thickness of asphalt: 2'to 8',possibly thicker.
150' to 200' in length.
Three shafts were dug. No. 3 to a depth of 220'.
No true vein sample taken. Samples from pits,shafts.

Accessibility: The deposit is adjacent to the town of Jumbo, Okla. but the nearest railroad is at Eubanks or Stringtown.

Laboratory test:

Sample No. 16-1 Grahamite from the shafts and pits.
Bitumen: 2.38%
Penetration test: Very low
Residue: Quartz sand: 75%
Clay minerals: 25%
Minerals identified: Quartz, Clay minerals.
Recommendations: While the bitumens ingredients are very low, the quality is very good; the aggregate is also very good for road topping material. It needs, however, to be built up with a sufficient cut back refinery asphalt or other asphaltic material to the proper extent to make first class road material.

Sample No. 16-2 is a sandstone saturated with asphalt.
Bitumen: 12.82%
Penetration test: Very low
Residue: Quartz sand 98%
Minerals identified; Oil, Quartz sand.
Recommendations: This material is of no value for road topping purposes. It is, however, excellent material as is,for the preparation of commercial floor sweeps. It would need only to be barrelled up and the product would be ready for sale.

STEPHENS COUNTY ASPHALT

LOCATION	AMOUNT	F.S.#	BITUMEN	PENETRATION TEST	RESIDUE	MINERALS IDENTIFIED	USED FOR:
SW SW SW SE Sec. 31 T2S-R4W	30 cu. ft.	11-1	0.20%		qtz. sand	Asphalt Quartz	The asphalt content is too low for any commercial purpose.
NE SW NW Sec. 14 T2S-R4W	6 cu.yds	12-1	4.76%	High	98% qtz. sand	Quartz Asphalt	Material needs blending with lower pen. test asphalt on account of the asphalt material contined herein is too high in oily matter.
S½ NE¼ Sec. 6 T2S-R4W	?	14-1	1.54%	Very high	95% qtz. sand	Quartz Small amt. calcite Oil	This material contains too small amount of bitumenus matter for any commercial value, which is quite sufficient and oily.
S½ SE NE Sec. 27 T1S-R5W	4444 cu. yds.	96-A	6.00%	Very low	qtz. sand	Asphalt Quartz	For: Road topping.
Ditto	Ditto	96-B	14.05%	Very low	qtz. sand	Asphalt Quartz	1. Road topping. Might be u used for extraction & manufacture of roofing material & asphalt paints.
Ditto	Ditto	96-C	13.2%	High	qtz. sand	Oil Asphalt Quartz	Excellent material for base for floor sweep. Fair for road topping but should be mixed with high pen. test.
Ditto	Ditto	96-D	15.3%	High	qtz. sand	Ditto	Ditto
Ditto	Ditto	96-?	29.5%	Medium	qtz. sand	Ditto	1.Road topping if blended with proper amt. low pen.test asphalt. 2.Extraction for asphalt paints & roofing material. 3.Floor sweep base.

STEPHENS COUNTY ASPHALT

LOCATION	AMOUNT	F.S.#	BITUMEN	PENETRATION TEST	RESIDUE	MINERALS IDENTIFIED	USED FOR:
NW¼ SE¼ Sec. 22 T1S-R5W	5866 cu. yds.	125-A	5.23%	High	Quartz sand	Asphalt Quartz	1. Road topping. 2. Base for floor sweep.
Ditto	Ditto	125-B	4.55%	Very low	Ditto	Asphalt Quartz sand	1. Road topping.
Ditto	Ditto	125-1	5.0%	High	Ditto	Oil Asphalt Quartz	Fair road topping material if blended with asphalt of low penetration test.
Ditto	Ditto	125-B re-run	1.6%	High	Ditto	Ditto	Bitumen content entirely too low to be of any commercial value.
NW SW SE Sec. 27 T2S-R5W	?	123					
SW NE NE Sec. 10 T3S-R5W	6 Bbls. per day	220					
NW SW SE Sec. 27 T2S-R5W	?	123					
NE SW NW SEC. 14 T25N-R4W		317					Not considered commercial.
sw SW SW Sec. 31 T2S-R4W		316					Not commercial.
Sterling NW¼ Sec. 6 T2S-R5W		218	Culture sheet showing asphalt deposit in East line of the NW¼ of Sec. 6, T2S-R5W				

STEPHENS COUNTY ASPHALT

LOCATION	AMOUNT	F.S.#	BITUMEN	PENETRATION TEST	RESIDUE	MINERALS IDENTIFIED	USED FOR:
NW¼ SE¼ Sec. 22 T13-R5W	5966 cu. yds.	125-A	6.50%	High	Quartz sand	Oil Asphalt Quartz	Fair road material if mixed with high penetration test asphalt. Good material for floor sweep base as is.
Ditto	Ditto	125-B	Less than 1%				Too low for any commercial value at this time.

CHEROKEE COUNTY - LIQUID ASPHALT

FIELD SHEET NO.:	220-1
LOCATION	SW NE NE Sec. 27 T32-R5W
AMOUNT:	6 Bbls daily
SPECIFIC GRAV. AS REC'D:	12.76° A.P.I @ 60° F.
SPECIFIC GRAV., DRY:	12.89° A.P.I. @ 60° F.
MOISTURE:	6.13%
1st DROP OVER:	545.0° F.
10% " " :	622.4° F.
20% " " :	707.0° F.
30% " " :	752.0° F.
40% " " :	772.4° F.
50% " " :	788.0° F.
60% " " :	
70% " " :	
80% " " :	
90% " " :	
95% " " :	
RES: % DROP OVER:	
INITIAL BOILING POINT:	545.0° F.
END POINT:	788.0° F.
CRACKING POINT:	788.0° F.
OCTANE RATING:	N. D.
DISTILATE:	47.10%
RESIDUE:	52.90%
PENETRATION TEST:	High

ASPHALT

STEPHENS COUNTY - Field Sheet No. 11 - 1 Sample

Location: SW Corner of the SW¼ of Sec. 31, T 2 S - R 4 W. Owner--
Tested and asphalt content found to be too low for commercial use.

STEPHENS COUNTY - Field Sheet No. 12 - 1 Sample.

Location: SW¼ NW¼ Sec. 14, T 2 S - R 4 W. Owner--

Quantity: 8' wide, 25' long, 4" thick at outcrop. Possibly not of commercial quantity. Estimated 6 tons.

Accessibility: Not easily accessible. Overburden on side of creek, ten to twelve feet.

Laboratory test:
Sample No. 12-1
Bitumen-----4.76%
Penetration test: High
Residue--Quartz sand 98%
Materials identified: Quartz, Asphalt.

Recommendations: This material needs to be blended with asphalt material of lower penetration test on account of the asphalt material contained herein is too high in oily matter.

STEPHENS COUNTY - Field Sheet No. 14----1 Sample
(Grahamite)

Location: NE¼ Sec. 6, T 2 S - R 4 W. Owner--E.B.Cox, Ardmore, Okla.

Quantity: Area estimated at 2 acres. There are six of these abandoned shafts.

Accessibility: Overburden 27 ft. Thickness of vein 6' then 40' to next vein. Some of these shafts 158' deep.? Apparently a great amount of Grahamite. The government demanded that the mine be modernized, but instead of it being modernized, it was abandoned. With investment, could be operated profitably as there is a large amount of Grahamite.

Sandstone stratum in the mine, 7' to 10' speckled with asphalt, very hard.

Pigment for paints--Red.

Laboratory tests:
Sample 14-1
Bitumen---1.54%
Penetration test: Very high
Residue - Quartz sand--95%
Minerals identified: Quartz, small amount of Calcite, Oil.

STEPHENS COUNTY * Field Sheet No. 14 (continued)

Recommendations: This material contains too small amount of bitumenus matter for any commercial value, which is quite sufficient and oily.

STEPHENS COUNTY - Field Sheet No. 123 - 1 Sample

Location: SW¼ SE¼ Sec. 27, T 2 S - R 5 W. Owner:

Quantity: Thickness of stratum 13'. Area unknown. Sample taken from a dug well 40' deep.

Accessibility: Overburden 10'.

Laboratory test: by error is typed as 125-1 on page following "C".

Bitumen 5.0%

STEPHENS COUNTY - Field Sheet No. 96 - 5 Samples

Location: SE¼ NE¼ Sec. 27, T 1 S - R 5 W. Owner--information from C.D.Harmon, who resides on the next place.

Quantity: 4444 cu. yds. estimated. Probably much more, 3/4 mile. Depth of asphalt not found at 10' plus.

Accessibility: Overburden 2' of soil. Outcrop in bed of creek, with overlaying strata of rock on either side. Quantity so extensive that it would appear that this deposit is well worth development. County commissioners have information of this deposit.

Laboratory test:

Sample No. 96-A

Bitumen----6.00
Penetration test - Very low
Residue: Essentially quartz sand
Minerals Identified: Asphalt, Quartz

Recommendations: Good material for: Road topping.

Sample 96-B

Bitumen: 14.00%
Penetration test: Very low
Residue: Essentially quartz sand
Minerals identified: Asphalt, Quartz.

Recommendations: This mineral excellent for: (1). Road topping. (2). Might be used for extration and manufacture of roofing material & asphalt paints.

ASPHALT

STEPHENS COUNTY - Field Sheet No. 96 (continued)

Laboratory test:
Sample No. 96-A (Retest)

Bitumen: 15.3%
Penetration test: High
Mineral residue: Essentially quartz sand.
Minerals identified: Oil, Asphalt, Quartz.

Recommendations:
Excellent material for:
(1) Base for floor sweep compound. Fair material for road topping but should be mixed with asphalt with high penetration test.

Sample No. 96-B (Retest)

Bitumen: 13.2%
Penetration test: High
Mineral residue: Essentially quartz sand.
Minerals identified: Oil, Asphalt, Quartz.

Recommendations:
Excellent material for base for floor sweep compound. Fair material for road topping but should be mixed with asphalt of high penetration test.

STEPHENS COUNTY - Field Sheet No. 125 (continued)

Laboratory test:
Sample No. 125-A
Bitumen: 5.50
Penetration test: High
Mineral residue: Principally quartz sand
Minerals identified: Oil, Asphalt, Quartz.
Recommendations: Fair road material if mixed with high penetration test asphalt. Good material for floor sweep, as is.

Sample No. 125-B: Bitumen: Less than 1%.

Recommendations: Too low for any commercial value at this time.

ASPHALT

STEPHENS COUNTY - Field Sheet No. 125 - 6 Samples.

Location: NW¼-SE¼ Sec. 22, T 1 S - R 5 W. Owner:

Quantity: 5866 cu. yds or more. Deposit along a creek for a 1/4 mile. Thickness of stratum 3'.

Accessibility: Extends along creek bed for 1/4 mile. Another sample taken from a dug well about ½ one-quarter mile away.
Overburden on Sample 125-A: 0 On sample 125-A: 5'

Laboratory test:
Sample 125-A OK
Bitumen: 5.23
Penetration test: High
Residue: Essentially Quartz sand.
Minerals identified: Asphalt, Quartz.
Recommendations: Good material for: (1) Road topping.
(2) Base for floor sweep.

~~(* See next page for rest of sample.)~~
Sample 125-B from the well in NW corner of SW¼ of Sec. 22.
OK Bitumen: 4.55%
Penetration test: Very low
Residue: Essentially quartz sand.
Mineral identified: Asphalt, Quartz sand.

STEPHENS COUNTY - Field Sheet No. 218--Culture sheet showing asphalt deposit in East line of the NW¼ of SEC. 6, T 2 S - R 5 W.

STEPHENS COUNTY - Field Sheet No. 225---Culture sheet showing asphalt oil well 300' from water well. This oil-asphalt well is 1020 ft. deep. 16' of sand at 600'. There was 10' of heavey liquid asphalt. Specific Gravity ~~XX~~ 22.

STEPHENS COUNTY - Field Sheet No. 220 1 sample. Also shown on field sheet No. 225.

Location: NW¼ NE¼ Sec.10, T3S, R5W Owner, fee simple is J.C Taylor, Duncan, Okla. He also owns production.

Quantity: This sample of Asphalt base oil, with an approximate gravity of 22, comes from a well 1020' deep, and which has been producing 6 bbls daily since 1914. 70 acres. About 1500 bbls in storage and ready for sale(4/9/36) Mr.Taylor is very anxious to make contact for outlet for his present and future production. Estimated daily production could be 168 bbls. Ten feet of very heavy asphalt at 600'

Accessibility:

Laboratory test:

STEPHENS COUNTY - Field Sheet No. 125-B Samples.(continued)

Laboratory test:
Sample No. [redacted] 123-1
Bitumen: 5.0%
Penetration test: High
Mineral residue: Essentially quartz sand
Minerals identified: Oil, Asphalt, Quartz.

Recommendations: Fair road topping material if blended with asphalt of low penetration test.

Sample No. 125-B (Re-sampled)

Bitumen: 1.6%
Penetration test: High
Mineral residue: Essentially quartz sand.
Minerals identified: Oil, Asphalt, Quartz

Recommendations: Bitumen content entirely too low to be of any commercial value.

STEPHENS COUNTY - Field Sheet No. 38 - (Asphalt)

Location:

Same land description as I.A. 880.96

Laboratory test:
Sample No. ~~38~~
Bitumen: 89.5%
Penetration test: Medium
Mineral residue: Essentially quartz sand
Minerals identified: Oil, Asphalt, Quartz

Recommendations: Excellent material for: 1. Road topping purposes if blended with the proper amount of low penetration test asphalt. 2. For extraction purposes to be used in the manufacture of asphalt paints and roofing material. 3. Base for floor sweep compounds.

ASPHALT

STEPHENS COUNTY - Field Sheet No. 316 (Same as TS No 11)

Location: SW SW SW Section 31, T 2 S - R 4 W.
North east of Loco.

Quantity: Large quantity but poor quality.

Accessibility: Overburden from two to ten feet.

Remarks: Not commercial.

STEPHENS COUNTY - Field Sheet No. 317.

Location: NE SW NW Section 14, T 2 S - R 4 W.

Quantity: 4 inches thick, 8 feet wide, 25 feet long.

Accessibility: Deposit in bed of creek; not easily accessible. Overburden on south of creek from 10 to 12 feet.

Remarks: Not considered commercial.