STATE OF ARKANSAS

ARKANSAS GEOLOGICAL COMMISSION

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ARKANSAS LIGNITE INVESTIGATIONS

Preliminary Report

by

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INTRODUCTION

Lignite is the lowest rank coal with anthracite being the highest rank. Lignite is brown to black in color, has a high moisture and volatile content, and a heating value of less than 8300 Btu/lb on a moist, mineral matter free basis. The high volatile content makes it more readily converted into gas and liquid products than most of the higher grade coals. The high moisture content and its susceptibility to spontaneous combustion present problems in transportation and storage.

Arkansas lignite is a potentially valuable source of energy. Major energy companies have spent millions of dollars investigating lignite in Arkansas since 1973. These companies have leased about 200,000 acres of land for lignite, and have announced that they have over 2 billion tons of lignite in proven reserves. In addition to expenditures for exploration, these major energy companies have invested substantially in studies on mine planning, product research, surface and ground water, mine reclamation, and the environmental impact of mining.

The Arkansas General Assembly recognizing the significance of lignite as a potential energy source appropriated \$100,000 a year for the period 1975-1979 for Arkansas Geological Commission to investigate lignite. The Commission initiated these investigations in areas of the state where lignite could be expected to occur at depths of 150 feet or less. The program consists of core-drilling the more promising areas and analyzing the recovered lignite core samples. As an adjunct to this program, the U.S. Geological Survey Ground Water Branch has begun a program of monitoring the ground water in the lignite areas of south Arkansas to obtain a history of water quality and water levels in advance of mining. With the data that they collect before mining begins they will have a reliable basis for determining the effect of strip mining lignite.

Since 1973, interest in Arkansas lignite has increased steadily. Besides company and government interest, the news media and public are keenly interested in Arkansas lignite and in the possibility of extensive strip mining in lignite areas. Lignite is a major energy resource in Arkansas, and with orderly development can become a major economic asset.

ACKNOWLEDGMENTS

The proximate and ultimate analyses of lignite samples performed under the direction of Mr. Forrest E. Walker at the U. S. Bureau of Mines Laboratory

(currently a part of the U. S. Department of Energy) is greatly appreciated. The U. S. Geological Survey Laboratory, under the direction of Mr. Joseph R. Hatch, is presently performing trace element analysis on the lignite samples and this work adds much needed data on the characteristics of Arkansas lignite.

The Dow Chemical Company, General Crude Oil Company, Reynolds Metals Company, Carter Oil Company, and Phillips Petroleum Company supplied information on lignite and gave advice on drilling procedures. In addition, the Carter Oil Company furnished at no charge a Widco electric logger.

The cooperation of the Arkansas Highway Department and numerous county judges assisted the drilling program. The Geology Commission appreciates the attitude and warm reception of the many property owners in the areas of our drilling operations.

All of the members of the Arkansas Geological Commission staff have assisted with the lignite progject; especially Mac Woodward and Dave Lumbert (presently with the State Energy Office), and Mike Howard and Pat Kelone of the Commission's staff who have devoted much time and hard work on the lignite project and deserve special recognition.

HISTORY

Lignite was mined and used in south Arkansas before the War Between the States. The lignite was first used for steam-boiler fuel and as fuel for small locomotives near the mines in Ouachita County. In 1907 a small oil-distilling plant was in operation in Camden and another distillery was operating in Lester. Both of these plants were producing oils distilled from canneloid lignite mined from the Camden coal field near Lester. White (1913) stated, "Such lignite is said to yield as high as 38 gallons of oil per ton, though the average oil production from the lignite as it is mined and distilled approximates 25 gallons per ton." There is no record as to the length of time that these plants remained in operation, nor of their production.

In 1938 a plant was constructed in El Dorado by the Arkansas Dye and Chemical Company to produce Vandyke brown dye from lignite. In 1943 the American Dyewood Company of New Jersey moved its plant to Malvern and produced Vandyke brown dye from lignite. The dye was used in labelling ammunition boxes during World War 2.

Although lignite has been produced sporadically in Arkansas for over a century, production figures are not available and total production was small.

STRATIGRAPHY

Lignite occurs in sedimentary rocks of Tertiary age in the Gulf Coastal Plain region of Arkansas. These rocks are divided into the Wilcox, Claiborne, and Jackson Groups. Jackson sediments have not been found to contain lignite beds more than a few inches thick in Arkansas. Lignite does occur in beds up to several feet thick in both the Wilcox and Claiborne strata.

The Wilcox and Claiborne Groups are composed of sediments deposited in non-marine and shallow marine environments. These environments of deposition varied from fluvial to deltaic.

EOCENE SERIES

Wilcox Group:

The Wilcox Group is exposed in outcrops trending southwest from northwestern Lonoke County through northern Miller County and along Crowley's Ridge in Craighead, Greene, and Clay Counties of northeastern Arkansas (Fig. 1). The Wilcox is as much as 850 feet thick in this area and has a maximum outcrop width of 21 miles in southern Hot Spring and northern Dallas Counties. This group is made up predominatly of fine to very-fine sands, silty sands, and clays. The sands are generally light gray when unweathered and alter to white, light brown, and red when weathered. The clays are generally light shades of gray or brown and contain varying amounts of fine sand. The sands and clays frequently contain enough carbonaceous material to make them dark brown to black. Lignite occurs as beds within this predominantly sand and clay sequence. In the course of the present investigation, beds of lignite over three feet thick were encountered at a depth of less than 150 feet in many of the drill holes. Indications are that the lignite beds are not restricted to a specific stratigraphic horizon in the Wilcox Group, but are dependent upon the depositional environment and history. In addition to lignite, commercial deposits of bauxite, clay, and to a lesser extent siderite are, or have been, mined from the Wilcox in Arkansas.

Claiborne Group:

The Wilcox Group in Arkansas is overlain by the sands, silts, and clays of the Claiborne Group. Outcrops of the Claiborne Group occur from eastern Saline through central Miller Counties, and from northern Jefferson through western Ashley Counties (Fig. 1). The Claiborne Group is also exposed in outcrops along Crowley's Ridge in St. Francis, Cross, Poinsett, and southern Craighead Counties in northeastern Arkansas. This group is as much as 1500 feet thick in Arkansas

and is made up predominantly of fine to very-fine sands, silts, and silty clays. The sands are generally light to dark gray when unweathered and alter to white, brown, and red when weathered. The silts are medium to dark gray and clayey. The clays are light to dark gray, blue-gray, and usually very silty or sandy. The sands, silts, and clays contain enough carbonaceous material at many places to make them dark brown to black. Several holes drilled during this investigation encountered beds of lignite three met or more thick at depths less than 150 feet. The lignite beds in the Claiborne do not appear to be restricted to specific stratigraphic units, but are dependent upon the depositional environment and subsequent history.

QUATERNARY SYSTEM

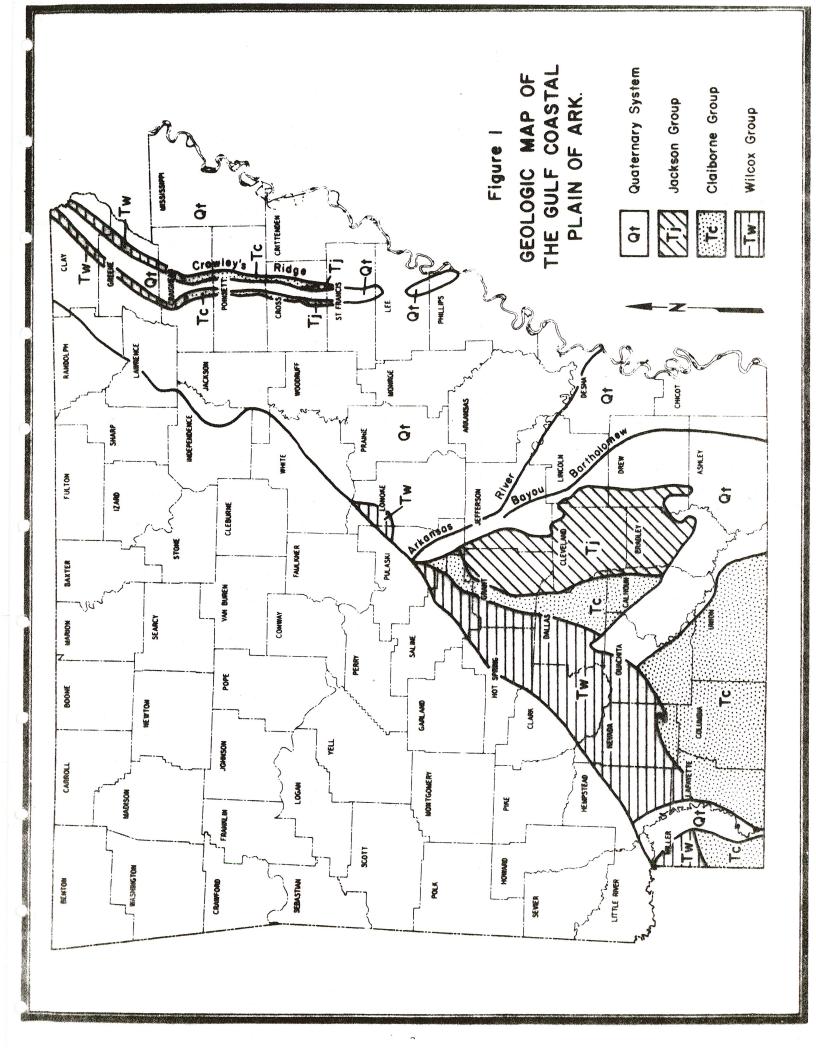
Quaternary deposits overlay the Wilcox and Claiborne strata in much of southern and eastern Arkansas. The Quaternary is made up of Pleistocene terrace and loess deposits and Holocene alluvial deposits. The Pleistocene is composed primarily of deposits of river gravel, sand, silt, and clay that lie above the present flood plains. Loess deposits of Pleistocene age cap Crowley's Ridge from Poinsett through Phillips Counties. Holocene alluvial deposits occur along the streams and are made up of gravel, sand, silt, and clay. West of the Arkansas River and Bayou Bartholomew in southern Arkansas, the Quaternary deposits vary from 0 to 90 feet thick and are generally less than 30 feet thick. From Bayou Bartholomew northward and eastward the Quaternary deposits range from 0 to over 200 feet thick and, with the exception of Crowley's Ridge, the deposits are generally over 100 feet thick.

PRESENT INVESTIGATION

The Arkansas General Assembly recognized the importance of lignite as a major energy resource, and appropriated \$100,000 a year for the period 1975-1981 for the Arkansas Geological Commission lignite investigations. It was decided that these funds would be best used by gathering factual data in areas of the state where lignite could be expected to occur at depths of 150 feet or less.

Purpose:

The Commission's staff geologist decided that the primary purposes of this lignite investigation should be to: determine the geographical and geological distribution of lignite occurrences in Arkansas at minable depths; obtain heat and chemical analyses from the deposits encountered; obtain data relating to overburden and ground water; and calculate lignite resources in Arkansas.



Methods:

The most practical method to achieve the project goals was with a drilling and coring program. It was decided to begin the drilling program in northeast Arkansas on Crowley's Ridge because in 1975 company exploration was concentrated in south Arkansas. Lignite was known to occur in the Tertiary sediments of Crowley's Ridge from outcrops and drill hole data.

Initially the core drilling was accomplished by a drilling contractor. A field geologist chose the drill site, logged the drill cuttings, picked the intervals to be cored, and described and sampled the cores and packaged them in airtight plastic to prevent loss of moisture. The geologist also operated an electric logging device after the drill hole was completed to record the electrical properties of the rocks. Periodically all information and samples were delivered to the project geologist. The project geologist shipped the lignite core samples to the United State Bureau of Mines laboratory in Pittsburgh, Pennsylvania for proximate and ultimate analyses and a split of the samples were then sent to the U.S. Geological Survey laboratory in Denver, Colorado for trace element analysis. The project geologist also reviewed and made a permanent record of the information and made suggestions for continued operations.

At most locations on Crowley's Ridge the drill encountered Quaternary gravels and coarse sands above the prospective Tertiary beds. In places the Quaternary deposits were as much as 100 feet thick and caused many drilling problems. Drill holes were spaced about one mile apart. When lignite was encountered in beds three feet or more thick, the crew would move the drill a few feet and core the lignite. Drilling and coring data from northeastern Arkansas appear in Appendix A, and analyses of lignite samples are in Appendix C of this report.

In the spring of 1976 the Arkansas Geological Commission purchased a Failing model 1500 drill. In August, 1976, the drill was delivered and the lignite investigation moved to south Arkansas. Much of the company activity at this time consisted of development drilling and did not conflict with the Commission's reconnaissance drilling program. In south Arkansas

holes were drilled along highway rights-of-way at about one mile spacings for the state project. Field and office procedures were essentially the same as for the northeast Arkansas part of the project. In the spring of 1977 another contract drilling company was employed for a few weeks to augment our own drilling. In the summer of 1977 a gamma-ray tool was purchased to be used as a part of our regular electric logging program. The gamma-ray tool records natural samma radiation contained in the rocks and is used extensively in uranium exploration. Drilling and coring data from south Arkansas are compiled as Appendix B, and analyses of lignite samples are reported as Appendix C in this report.

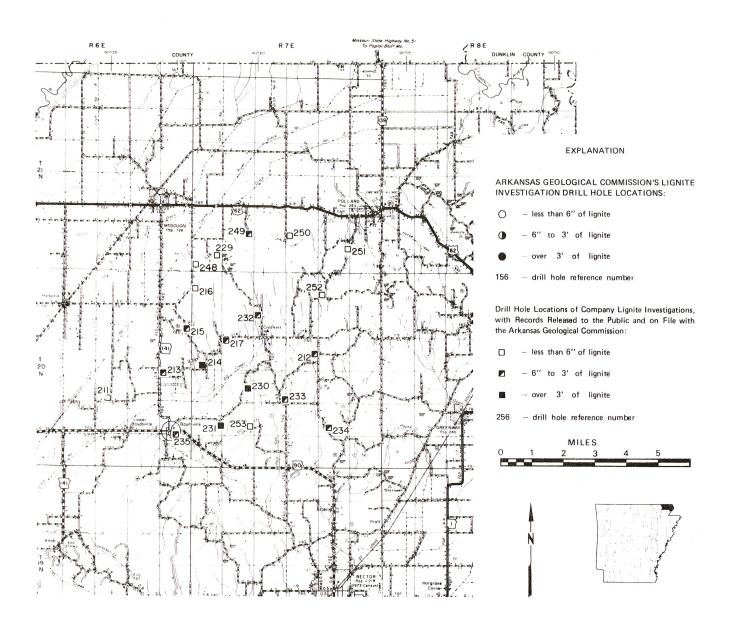
Results:

The Arkansas Geological Commission is publishing this preliminary report to distribute the information gained thus far although this project will not be completed before June 30, 1981. Incomplete results indicate that potentially economic deposits of lignite may occur throughout the Wilcox and Claiborne Groups rather than restricted to certain horizons. Prior to January, 1978, 55 lignite samples were taken from 47 core holes and sent to the U.S. Bureau of Mines for proximate and ultimate analyses. The average of the 55 analyses is as follows: on an as received basis, moisture 38%, ash 17%, sulphur 0.6% and 5500 Btu/lb; on a moisture free basis, ash 27%, sulphur 1.0%, and 9000 Btu/lb; on a moisture and ash free basis, sulphur 1.4%, and 12,300 Btu/lb. Sixteen of the samples had an ash content on an as received basis greater than 20%. When these 16 samples are disregarded, the average of the remaining 39 analyses is as follows: on an as received basis, moisture 41%, ash 12%, sulphur 0.6%, and 6000 Btu/lb; on a moisture free basis, ash 20%, sulphur 1.0% and 10,000 Btu/lb; on a moisture and ash free basis, sulphur 1.3% and 12,300 Btu/lb. The moisture content of the lignite samples ranged from 19.4% to 47.9%. On a moisture free basis the sulphur ranged from 0.3% to 5.4% with 40 of the 55 samples containing less than 1% sulphur. The heat value of the liquite on a moisture free basis ranged from 3,115 Btu/ lb on a sample with high ash content to 11,874 Btu/lb on a sample with low ash content. Chemical analyses and overburden data are reported in the appendices. Beds of lignite account for 0.8% of all Tertiary age rocks drilled for this project. A resource figure based on this percentage and calculated for an overburden of 150 feet or less is 13.5 billion tons.

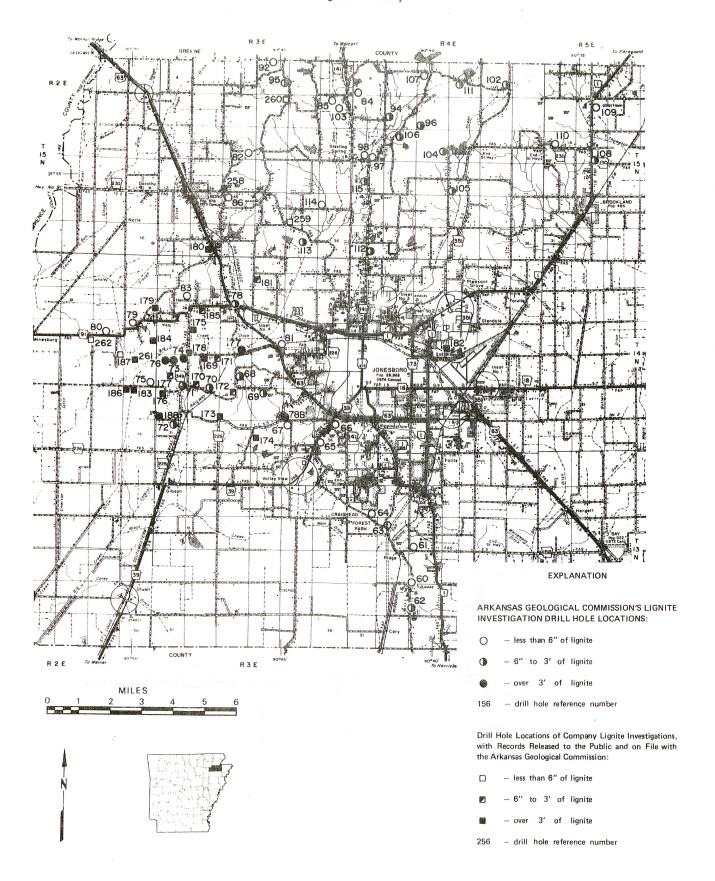
APPENDIX A

County location maps and drill logs of northeastern Arkansas

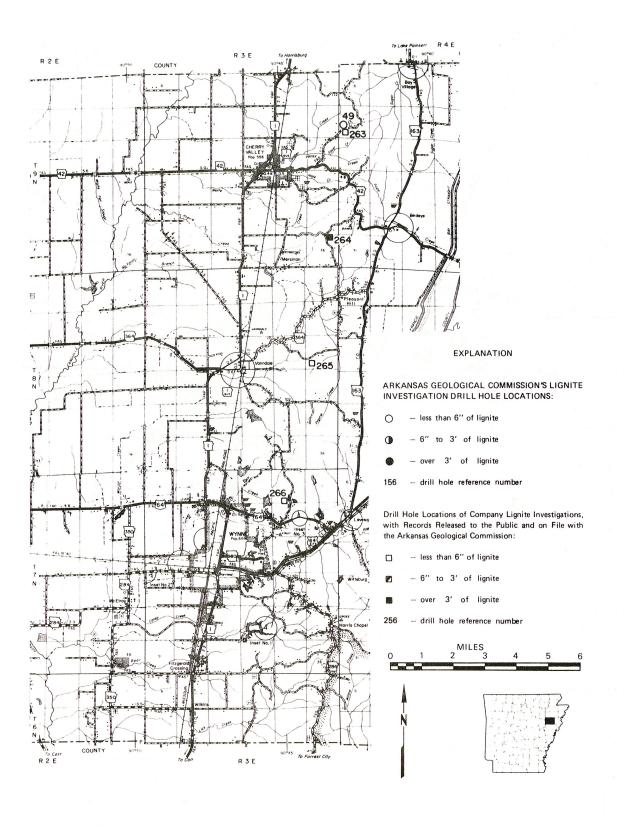
Clay County



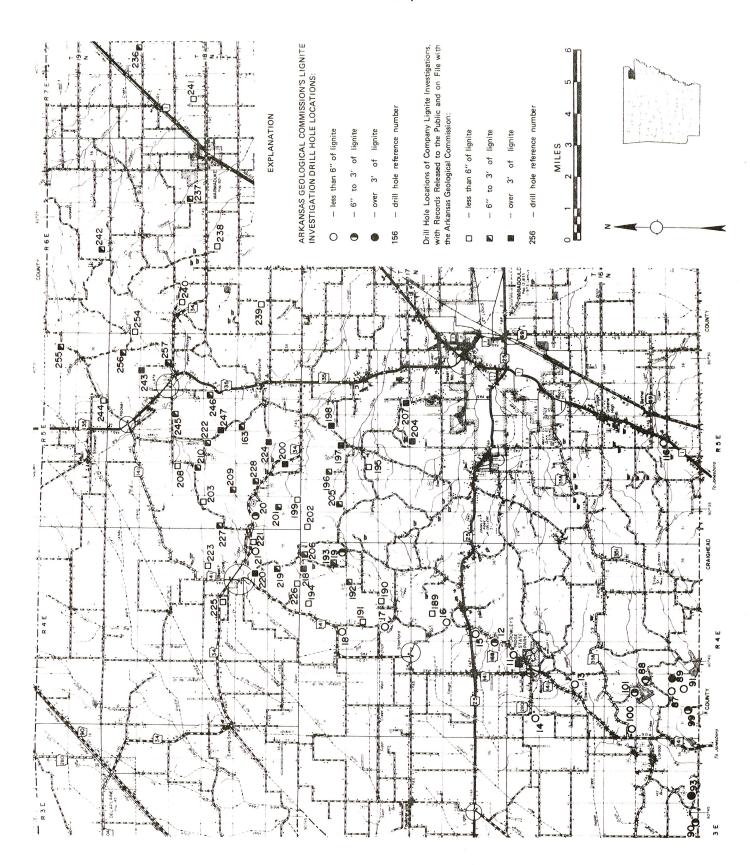
Craighead County



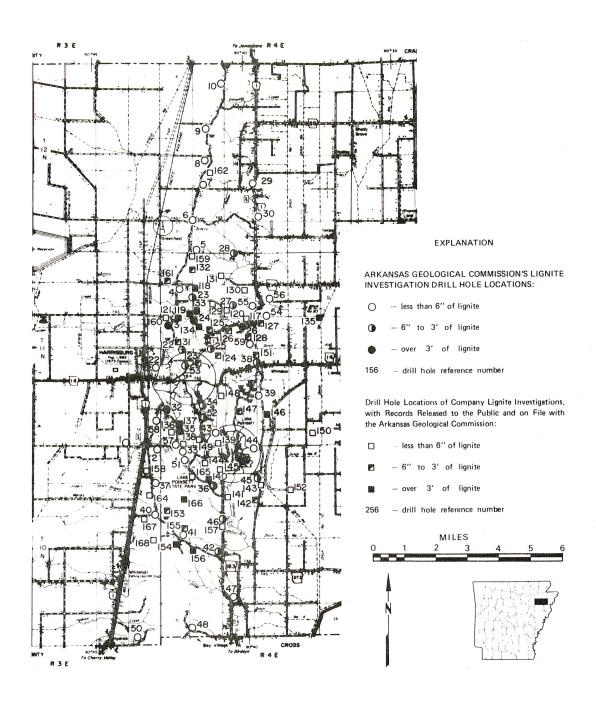
Cross County



Greene County



Poinsett County



			TO ELOUTE HEY ENTING TO NO		•
	e No. 1. Elevation 272'	12'- 14'	Clay, tan and gray, with gravels	Drill Hole	No. 7. Elevation 365'
	: SE¼, Sec. 35, T. 11 N., R. 3 E.	14'- 16'	Clay, tan and gray, with a de-	Location:	SW¼, Sec. 20, T. 12 N., R. 4 E.
County, F Logged b	y: D. W. Lumbert 10/75.	16'- 22'	crease in sand	County, P	oinsett
		22'- 40'	Clay, tan and gray, with sand Clay, tan and gray, with iron	Logged by	7: D. W. Lumbert 10/75.
0'- 25' 25'- 40'	Clay, brown, silty, with gravel	404	staining	0'- 5'	
40'- 72'	Clay, brown, sandy, with gravel Clay, brown, sandy, with some	40'- 50'	Clay, tan and gray, with iron staining	5'- 10'	Clay, tan, with sand
	shale fragments	50'- 58'	Clay, tan and gray, with iron	10'- 15' 15'- 21'	Clay, gray, with sand Sand, gray, with clay
72'- 78'			staining and a trace of lignite	21'- 50'	Sand, gray, with clay
78'- 9 0 '	very fine-grain sand 'Clay, brown to light-tan, with	58'- 66'	Clay, gray, with a thin layer of lignite @651/4', approximately 6"	50′-100′	Sand, gray with thin layers of
00/445/	coarse sand	66'- 70'	Clay, gray, with sand	100'-150'	gray clay Sand, gray, with thin layers of
90′-115′		70′- 80′	Cored interval, ten feet:		gray to blue clay
115'-126'	with iron staining Sand, very coarse up to 2mm		Recovered: Lost: 5.0 feet 5.0 feet		T. D.: 150'
	with well-rounded characteris-		5.0 feet 5.0 feet 3.2' Lignite, dark-layered carbo-	Drill Hole	No. 8. Elevation 300'
126'-136'	tics ' Clay, light-tan, with sand and		naceous material, clay, light-	Location:	NW¼, Sec. 20, T. 12 N., R. 4 E.
120 100	chert pebbles		gray and tan, with sand, and good zoning	County, P	
136′- 13 8′	Clay, tan		1.3'Lignite	Logged by	r: D. W. Lumbert 10/75.
138′- 160 ′	Sand, coarse, with chert and with iron staining		0.5' Lignite with layers of clay,	0'- 9'	
160'-190'	Sand, coarse, with thin layers	80'- 82'	gray Lignite, with dark-gray clay	9'- 11' 11'- 22'	
400/040/	of light-gray clay	82'-117'	Clay, blue-gray, with trace of	11 - 22	Clay, tan and gray, with sand and gravel
. 190′-210′	Sand, coarse, with thin layers of light-gray clay	117/105/	lignite	22'- 40'	Clay, gray, with sand
210'-220'	Clay, gray and tan, with traces	117′-135′ 135′-150′		40'- 62' 62'- 75'	Sand, gray, w/some clay layers
	of lignite		T. D.: 150'	75'-1 00 '	Sand, gray, w/some clay layers Sand, gray, w/some clay layers
	T. D.: 220'	Daill Hala	No. 4 Et	100'-120'	Sand, gray, with black specks of
Drill Hole	No. 2. Elevation 302'		No. 4. Elevation 310' NE¼, Sec. 7, T. 11 N., R. 4 E.	120'-150'	carbonaceous material Same
Location:	NE¼, Sec. 1, T. 10 N., R. 3 E.	County, P	oinsett	120 -150	T. D.: 150'
County, P	y: D. W. Lumbert 10/75.	Logged by	D. W. Lumbert 10/75.	5	
		0'- 10'	Gravel, clay, tan, with sand		No. 9. Elevation 278' NE¼, Sec. 17, T. 12 N., R. 4 E.
0'- 7'	The second secon	10'- 13'	Clay, gray, with sand	County, P	oinsett
7'- 12'	staining Clay, light-tan, sandy with iron	13′- 22′		Logged by	: D. W. Lumbert 10/75.
	staining	22'- 32'	naceous material Clay, light-gray to blue, slightly	0'- 7'	Clay brown with and
12′- 1 7′			silty	7'- 12'	Clay, brown, with sand Gravel
17'- 21'	staining Sand, small gravel	32'- 40' 40'- 70'	Clay, gray, silty	12'- 14'	Clay, gray to tan, with silt
21'- 24'		70′-100′	Same Sand, gray to white, fine-	14'- 27' 27'- 30'	Clay, gray, with sand
24'- 28'	crease in gravel		grained	30'- 33'	Clay, gray, with sand Clay, dark-gray, lignite, approxi-
24 - 20	Clay, tan, with large rounded chert	100′-113′	Clay, gray, with sand, lignite at		mately 1 to 2 inches
28'- 30'	Clay, gray	113'-120'	112', approximately 4 inches Clay, gray, sandy	33'- 36' 36'- 60'	Clay, gray, with very-fine sand
30'- 35' 35'- 40'		120′-150′	Clay, gray, sandy with carbo-	60'-147'	
40'- 50'			naceous material T. D.: 150'		T. D.: 147'
50'- 54'	Clay, tan and gray, with sand		1. 5 100		
54'- 58'	Clay, tan and gray, with de- crease in sand	Drill Hole	No. 5. Elevation 380'	Drill Hole	No. 10. Elevation 290'
58'- 74'	Clay, tan and gray, silty	County, Po	SW%, Sec. 32, T. 12 N., R. 4 E.	Location:	SE14, Sec. 5, T. 12 N., R. 4 E.
74'- 80'	Clay, gray, with trace of iron		: D. W. Lumbert 10/75.	County, Po	oinsett : D. W. Lumbert 10/75.
80'- 90'	stain Clay, gray, with iron stain, with			· · · · · · · · · · · · · · · · · · ·	
	trace of lignite	0'- 6' 6'- 8'	Clay, tan, gravel Clay, tan, sand, gravel	0'- 10'	
90'- 94'	Clay, gray, with increase in sand	8'- 10'	Clay, tan, sand	10'- 27' 27'- 28'	Gravel, sand Clay, gray, with sand
94'-100' 100'-135'	Clay, sandy, with iron stain Clay, sandy, with iron stain	10'- 12' 12'- 13'	Clay, red, sand	28'- 35'	Sand, gray, with thin clay layers
135'-142'	Clay, tan and gray, with sand.	12 - 13 13'- 18'	Clay, tan, sand Sand, fine-grained	35'- 40'	Gravel, well-rounded, clay, gray, with sand
142′-175′	with trace of lignite		T. D.: 18'	40'- 50'	Gravel, sand, clay, white
175′-190′	Sand, clay, tan, with layers Clay, gray and tan, with increase	Drill Hole	No. 6. Elevation 367'	50'- 60'	Sand, very-fine
	of sand, with trace of lignite	Location:	NE%, Sec. 31, T. 12 N., R. 4 E.	60′ 70′ 70′- 80′	Clay, light-gray, with sand
190′-200′	Clay, gray and tan, with increase	County, Pa	oinsett	70 - 80	Clay, light-gray, with very-fine sand
200'-205'	of sand, with trace of lignite Clay, tan and gray, with silt	Logged by	: D. W. Lumbert 10/75.	80'- 90'	Same
205'-230'	Clay, tan and gray, with silt.	0'- 5'	Weathered surface material	90′-100′ 100′-120′	Clay, tan and gray, with sand
230'-238'	and a trace of lignite	5'- 10'	Clay, tan, sand and gravel	100 120	Clay, light-gray to tan, with very-fine sand
200 200	Clay, tan and gray, with approximately 3 inch siltstone layer	10'- 12'	Clay, tan to gray, with sand and gravel	120′-125′	Clay, gray, carbonaceous with
	at 235'	12'- 18'	Gravel	125'-135'	Clay dark-gray with cond with
	T. D.: 238'	18'- 20'	Clay, gray, with sand		Clay, dark-gray, with sand, with trace of lignite
Drill Hole	No. 3. Elevation 352'	20'- 27' 27'- 50'	Clay, gray, with very-fine sand Sand, white	135′-145′	Cored interval, ten feet
Location:	NW¼, Sec. 18, T. 11 N., R. 4 E.	50'- 70'	Clay, gray, sand		Recovered: Lost: 0 feet 10 feet
County, Po	oinsett	70'- 90'	Clay, tan and gray	145'-150'	O feet 10 feet Clay, dark-brown, with lignite
		90′-100′ 100′-120′	Clay, tan and gray Clay, tan and gray, with sand	150/ 100:	partings
0'- 8'	Clay, red, gravel, with sand	120'-150'	Clay, tan and gray, with sand Clay, tan and gray, with sand	150′-180′	Clay, gray, with medium-grained sand
8'- 12'	Clay, tan, with gravel		T. D.: 150'		T. D.: 180'
				4	

Drill Hole No. 11 Elevesion 240'	191/100/	are allere anare	6' 10'	Count municipality with tunns of
Drill Hole No. 11. Elevation 340' Location: NE%, Sec. 4, T. 16 N., R. 4 E.		ay, silty, gray . D.: 190′	6'- 10'	Sand, gray, clay, with trace of lignite
County, Greene		. Б 190	10'- 16'	Sand, light-gray, clay
Logged by: D. W. Lumbert 11/75.	Drill Hole No.	15. Elevation 335'	16'- 35'	Sand, with gravel
	Location: SV	V¼, Sec. 27, T. 17 N., R. 4 E.	35'- 36'	
0'- 5' Weathered topsoil, clay, brown,	County, Gree	ne	36'- 37'	Clay, light-gray, with sand and
with gravel	Logged by D.	W. Lumbert 11/75.	11 Por	gravel, with layer of lignite
5'- 10' Clay, gray, with sand and gravel			37'- 41'	Clay, gray with sand, @ 40'
10'- 19' Siltstone, approximately 2		and, dark, tan, clay		lignite
inches, clay, gray, with sand 19'- 23' Clay, tan to gray, @ 20' lignite.		and, coarse, gravel	41'- 45'	Clay, silty, dark-brown, with
19'- 23' Clay, tan to gray, @ 20' lignite, approximately 2 inches	35'- 86' Sa	and, white, very fine		stringers of lignite
23'- 28' Gravel, sand, well-rounded		lay, light gray, with sand, with ace of lignite		T. D.: 45'
28'- 32' Clay, tan to gray, with sand		ignite	Drill Hole	No. 20. Elevation 365'
32'- 38' Sand, 2 inches, at 32 feet,		lay, light gray		SW14, Sec. 30, T. 18 N., R. 5 E.
gravel with sand		lay, with trace of lignite,	County, G	
38'- 40' Gravel, pebble, with sand	Ca	rbonaceous		: M. A. Stoyanov 11/75.
40'- 44' Sand, gray		lay, light-gray, with sand		
44'- 46' Sand, clay, white		and, hard layer with clay, gray	0'- 9'	ciay, right tarry carray triar
46'- 50' Gravel, clay 50'-116' Sand, very-fine, white		lay, light-gray, with sand, fine	01 401	gravel, trace of lignite at 6'
50'-116' Sand, very-fine, white 116'-120' Sand, trace of lignite	1	. D.: 150'	9'- 16'	Clay, light-tan to gray, sandy
120'-122' Sand, very-fine, clay, gray	Drill Hole No.	. 16. Elevation 420'	16'- 35'	with gravel Sand, coarse
122'-134' Clay, dark-gray, with silt		N¼, Sec. 27, T. 17 N., R. 4 E.	35'-36.6'	
134'-150' Clay, dark-gray, with silt	County, Gree		35 -36.0	gravel
T. D.: 150'). W. Lumbert 11/75.	36.6'- 37'	Lignite
			37'- 45'	Clay, dark-brown, with lignite
Drill Hole No. 12. Elevation 382'		and, red, cla		stringers
Location: SW¼, Sec. 34, T. 17 N., R. 4 E.		andstone, tan, clay with gravel	45'- 90'	Clay, dark-gray, silty
County, Greene		and, fine-grained, with trace of	9 0 ′- 95′	Clay, dark-gray, silty with
Logged by: D. W. Lumbert 11/75.		inite	05/446/	lignite stringers
0'- 7' Gravel, (pebble size), with sand		and, fine-grained, with trace of	95′-116′	Clay, light-tan, with lignite trace
7'- 16' Gravel, clay, tan, with sand		and, with clay, tan, thin layers	116′-150′	Clay, dark-gray, silty T. D.: 150"
16'- 52' Sand, very-fine, trace lignite at		and, with clay, tall, thin layers		1, 0.: 150
47'		lay, light, layered with sand	Drill Hole	No. 21. Elevation 330'
52'- 64' Sand, clay, silty, gray		and		NW¼, Sec. 25, T. 18 N., R. 4 E.
64'- 75' Clay, gray, with trace of lignite	T	. D.: 150'	County, G	
75'-106' Clay, gray				: M. A. Stoyanov 11/75.
106'-114' Clay, dark-gray, silty		. 17. Elevation 300'		_
114'-116' @ 115' lignite, approximately 6-12 inches, clay, gray, silty		N¼, Sec. 15, T. 17 N., R. 4 E.		Sand, red, tan, with clay
116'-138' Clay, gray, silty	County, Gree	D. W. Lumbert 11/75.	15'- 161/2	Gravel
138'-140' @ 138' lignite, approximately	Logged by. L	v. vv. Lumbert 11/75.	52'- 78'	Sand, red and tan, with clay Sand, fine, clay, light-tan
2 feet	0'- 6' Sa	and, gravel	78'- 88'	
140'-160' Clay, trace lignite		lay, light-gray, tan with sand	88'-110'	Clay, light-gray, very sandy
T. D.: 160'	ar	nd gravel	110'-118'	Clay, dark-gray, with sand,
Dell Hele No. 42 5:		and, light-tan, clay		at 118', trace of lignite
Drill Hole No. 13. Elevation 405'		and, tan, gray, clay	118′-133′	Clay, dark-gray, with sand
Location: NW¼, Sec. 17, T. 16 N., R. 4 E. County, Greene		lay, dark-gray, lignite trace,	133′-170′	
Logged by: D. W. Lumbert 11/75.	ur De	in layers, approximately 1-2'' er layer		T. D.: 170'
		ay, dark-gray, increasing	Drill Hale	No. 22. Elevation 278'
0'- 30' Clay, reddish-brown		ones		SE¼, Sec. 24, T. 11 N., R. 3 E.
30'- 37' Clay, tan and gray, with gravel	67'- 96' C	ay, dark-gray, with sand,	County, Po	
37'- 64' Gravel, sand, very-fine		67' a 3" seam of lignite		: D. W. Lumbert 11/75.
64'- 80' Clay, tan, with trace of lignite		Itstone, 2-4" layers	7.00	
80'- 88' Clay, sandy 88'- 93' Sand, fine		and, dark-gray, clay, silty	0'- 10'	Clay, tan, gray, with possible
		. D.: 150'	4.04 4.04	trace of lignite
93'- 98' Clay, white, silty with sand 98'-110' Clay, white, with trace of lignite	Drill Holo No	. 18. Elevation 302'	10'- 15'	Clay, tan, gray, with silt
110'-136' Sand gravel	Location: SI	N%. Sec. 3, T. 17 N., R. 4 E.	15'- 24' 24'- 35'	Gravel, seam with clay, sandy
136'-150' Clay, gray	County, Gree		35'- 40'	Sand with clay, gray Sand with clay, gray
150'-160' Clay, gray, with sand). W. Lumbert 11/75.	40'- 50'	Sand with clay, gray Sand with gravel
T. D.: 160'			50'- 70'	Sand, fine-grained
	0'- 25' C	ay, light-gray, tan, with sand	70'- 78'	Clay, gray, with sand, fine
Drill Hole No. 14. Elevation 290'		nd gravel		grained
Location: SW¼, Sec. 6, T. 16 N., R. 4 E. County, Greene		ay, dark-gray, tan, with sand	∍78′- 88′	Clay, gray, with sand, fine-
Logged by: D. W. Lumbert 11/75.		id gravel		grained
Lagged by . D. W. Lambert 11/75.		ravel w/clay, light-tan and gray and, fine-grained	88'-110'	Clay, gray
0'- 20' Clay, silty, tan and gray		ay, light-gray	110′-120′ 120′-122′	Clay, dark-gray, w/lignite trace
20'- 25' Clay, light-gray, with sand		ind, light-tan, clay, light-gray	120-122	Clay, dark-gray, with lignite stringer at 118'
25'- 28' Sand		yers, with chert conglomerate	122'-135'	Clay, dark-gray, with clay, tan
		D.: 113'	135'-140'	Clay, tan, gray
37'- 50' Sand, coarse			140'-150'	Clay, gray, with sand, fine-
50'- 79' Sand, fine, gray 79'-79.2' Lignite stringer	Drill Hole No.	19. Elevation 348'		grained
		1/ Sec 1 T 17 N D 4 F	150'-160'	Clay, gray, with sand, fine-
	Location: SI	14, Sec. 1, T. 17 N., R. 4 E.		
79.2'-98' Sand, gray, fine-grained	Location: SE County, Green	ne		grained
79.2'-98' Sand, gray, fine-grained 98'-116' Sand, coarse 116'-160' Clay, silty, gray	Location: SE County, Green	ne . W. Lumbert 11/75.	160′-170′	Lignite, approximately 1-2",
79.2'-98' Sand, gray, fine-grained 98'-116' Sand, coarse 116'-160' Clay, silty, gray 160'-180' Clay, silty, gray	Location: SE County, Green Logged by: D	ne . W. Lumbert 11/75.		Lignite, approximately 1-2", with sand, iron cemented with
79.2'- 98' Sand, gray, fine-grained 98'-116' Sand, coarse 116'-160' Clay, silty, gray	Location: SE County, Green Logged by: D	ne . W. Lumbert 11/75. and, gray, clay, with trace of	160′-170′	Lignite, approximately 1-2", with sand, iron cemented with clay, tan, gray
79.2'-98' Sand, gray, fine-grained 98'-116' Sand, coarse 116'-160' Clay, silty, gray 160'-180' Clay, silty, gray	Location: SE County, Green Logged by: D	ne . W. Lumbert 11/75.		Lignite, approximately 1-2", with sand, iron cemented with

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Drill Hole No. 23. Elevation 348' Location: NE¼, Sec. 7, T. 11 N., R. 4 E.	Drill Hole No. 26. Elevation 350' Location: NE¼, Sec. 16, T. 11 N., R. 4 E.	21'- 37' Clay, light-gray, kaolin 37'- 40' Clay, changing to dark-gray
County, Poinsett Logged by: D. W. Lumbert 12/75.	County, Poinsett Logged by: D. W. Lumbert 12/75.	40'- 50' Clay, changing to light-gray 50'- 60' Clay, silty, changing to blue-
0'- 1' Humus, with red-clay and sand 1'- 10' Clay, red with scattered pebbles	0'- 6' Clay, red, with sand 6'- 22' Sand, coarse with pea-gravel	green 60'- 62' Lignitic clay, dark-gray, with sand, very-fine, silty
and sand 10'- 19' Clay, red, with gravel	22'- 35' Sand and gravel 35'- 41' Clay, light-gray, sandy, with	62'-110' Clay, dark-gray, with sand, with trace of lignite
19'- 30' Clay, red to dark-brown, sandy 30'- 62' Clay, light-gray, sandy, with	trace of lignite 41'- 42' Lignite	110'-150' Clay, gray, with sand, with trace of lignite
lignite stringers 62'- 69' Lignite with clay, gray	Core 42' - 50' No recovery, estimated 30% clay, 70% lignite	T. D.: 150'
69'- 70' Clay, red to light-gray, sandy 70'- 80' Clay, light-gray to bluish, with	Core 49' - 50' No recovery due to large gravel falling into hole	Drill Hole No. 30. Elevation 274' Location: SW¼, Sec. 27, T. 12 N., R. 4 E.
sand 80'-114' Clay, light-gray to bluish, with	Main lignite deposit between 40' - 50' with little clayfrom	County, Poinsett
sand 114'-115' Stringer of lignite	cuttings. It indicated good grade of lignite.	Logged by: D. W. Lumbert 12/75.
115'-150' Clay, light-gray to blue, with silt	60'- 70' 25% lignite, 25% sand, and 50%	0'- 52' Clay, reddish-brown, with sand and gravel
T. D.: 150'	clay T. D.: 70'	52'-118' Sand, with clay, red, white, tan, with lignite trace
Drill Hole No. 24. Elevation 368'	Drill Hole No. 27. Elevation 365'	118'-120' Clay, gray, with sand 120'-150' Sand, gray
Location: NE%, Sec. 18, T. 11 N., R. 4 E. County, Poinsett	Location: SE¼, Sec. 9, T. 11 N., R. 4 E. County, Poinsett	T. D.: 150'
Logged by D. W. Lumbert 12/75.	Logged by: D. W. Lumbert 12/75. 0'- 27' Clay, red, with very fine-grained	Drill Hole No. 31. Elevation 398'
0'- 1' Humus, with well-rounded gravel	sand	Location: SE¼, Sec. 18, T. 11 N., R. 4 E. County, Poinsett
1'- 5' Clay, brown to light-gray, with sand	27'- 40' Sand, very fine-grained, with iron stained gravel 40'- 41' Gravel, with white clay and sand	Logged by: D. W. Lumbert 12/75.
5'- 10' Clay, silty, red-brown to gray 10'- 20' Clay, light-gray, with iron stains,	41'- 44' Gravel, fine-grained sand, and white clay with a trace of lignite	20'- 30' Clay, red, with sand increasing
silty 20'- 40' Clay, light-gray, with iron stains,	44'- 50' Sand, very fine-grained and white clay	50'- 60' Sand, very-fine
fine sand, and pea-gravel 40'- 50' Clay, light-gray, with thin layer	50'- 63' Clay, gray, with sand with trace of lignite. At this point, casing	60'- 95' Sand, tan and gray, with clay 95'-105' Clay, gray, with trace of lignite 105'-118' Clay, with lignite, thin layers
of iron cemented sandstone 50'- 77' Clay, dark-gray	was installed to eliminate the gravel problem. We cleaned the	118'-120' Clay, tan, gray, with sand
77'- 88' Clay, dark-gray, with trace of lignite	hole in purpose to obtain a good recovery on the core.	120'-130' Sand, with clay, dark-gray 130'-140' Sand, with lignite, thin layers 140'-150' Cored interval 10'
80'- 90' Cored interval, ten feet: Recovered: Lost:	63'- 73' Core Interval 10' Recovered: Lost:	Recovered: Lost:
10' 0 4.5' Lignite	10' 0 63- 64.5' Lignitic clay	2.5' Lignite 1.5' Lignite, clay layers, dark-
2.5' Lignite with inter layers of clay, dark gray	64.5'-66.8' Lignite, 2.3' 66.8'- 68' Lignitic clay	gray 2.0' Clay, dark-gray
3.0' Lignite, with clay, dark- gray, with sand	68'- 73' Sand, with gray clay 73'-140' Clay, gray, with very fine sand	T. D.: 150
90'-100' Clay, light-gray to light-blue 100'-120' Clay, blue-gray, with fine sand	T. D.: 140'	Drill Hole No. 32. Elevation 362' Location: SW¼, Sec. 30, T. 11 N., R. 4 E.
120'-150' Clay, blue to tan, with iron stains	Drill Hole No. 28. Elevation 264' Location: SE¼, Sec. 33, T. 12 N., R. 4 E.	County, Poinsett Logged by: D. W. Lumbert 12/75.
T. D.: 150'	County, Poinsett Logged by: D. W. Lumbert 12/75.	0'- 10' Clay, red, with sand
Drill Hole No. 25. Elevation 398'	0'- 10' Clay, red, with sand and gravel	10'- 20' Clay, white 20'- 44' Clay, white, with sand
Location: SW¼, Sec. 17, T. 11 N., R. 4 E. County, Poinsett	10'- 20' Gravel 20'- 40' Clay, red, with gravel	44'- 48' Clay, gray, with sand, @ 45' - 47.5' lignite
Logged by: D. W. Lumbert 12/75	40'- 60' Clay, light-tan to white, with very fine sand	48'- 51' Clay, white, with sand 51'- 70' Clay, white, with sand, very-fine
0'- 20' Clay, red with sand, gravel	60'- 70' Clay, gray, with trace of lignite 70'- 80' Clay, gray	70'- 74' Clay, white, with lignite, 2-4" 74'- 90' Clay, brown, white, with sand
cemented and well consolidated	80'- 82' Clay, dark-gray, with approxi- mately 6 inches of lignite	90'-100' Clay, dark-gray, with sand, very-fine
40'- 49' Clay, dark-brown, with sand and	82'- 86' Clay, dark-gray, to black (lignitic)	100'-108' Clay, gray, with very-fine sand 108'-110' Lignite
narrow lignite seams 49'- 60' Clay, dark-brown, with sand 60'- 62' Lignite	86'-89' Clay, dark-gray to black (ligni- tic) with sand	110'-138' Clay, gray, with very-fine sand 138'-140' Clay, dark-gray, with sand
62'- 86' Clay, light to dark-blue, with	89'- 92' Clay, light-gray, with very-fine sand	T. D.: 140'
sand 86'-104' Clay, blue to dark-gray, with	92'- 98' Clay, blue-gray, with sand 98'-130' Clay, blue to light-gray, w/sand	Drill Hole No. 33. Elevation 355' Location: NE½, Sec. 6, T. 10 N., R. 4 E.
sand 104'-129' Clay, blue to dark-gray, with	T. D.: 130'	County, Poinsett Logged by: M. A. Stoyanov 12/75.
sand and narrow lignite seams 129'-144' Clay, blue to dark-gray, with sand	Drill Hole No. 29. Elevation 254' Location: SE¼, Sec. 21, T. 12 N., R. 4 E.	0'- 10' Clay, red. sandy with gravel
144'-150' Clay, dark blue to dark-gray, with sand	County, Poinsett Logged by: D. W. Lumbert 12/75.	10'- 20' Sand, red, small 20'- 30' Sand, white, small
T. D.: 150'	0'- 21' Clay, dark-tan, with sand	30'- 40' Clay, red, sandy, with gravel ABANDONED HOLE

Drill Hole No. 34. Elevation 340'	0'- 10' Clay, red, with sand	10'- 20' Clay, gray, with very-fine sand,
Location: SW%, Sec. 29, T. 11 N., R. 4 E. County, Poinsett	10'- 20' Sand 20'- 48' Clay, tan, with sand	@ 18' lignite 3'' 20'- 30' Sand, very-fine, with clay, dark-
Logged by: D. W. Lumbert 12/75.	48'- 50' Clay, tan and gray, lignite tra	ace, brown
O' 10' Cand and siles	sand with wood parts 50'- 70' Clay, tan and gray, with sand	30'-60' Clay,dark-gray,w/sand, very-fine 60'-70' Sand, very-fine with clay, dark-
0'- 10' Sand, red, silty 10'- 20' Sand, black, w/clay, dark-gray	50'- 70' Clay, tan and gray, with sand 70'-102' Clay, gray, with sand	60'-70' Sand, very-fine with clay, dark- brown, trace of lignite
20'- 30' Clay, dark-gray, with sand	102'-103' Sand with lignite partings	70'- 80' Clay,blue-green,w/sand,very-fine
30'- 40' Clay, dark-gray, with sand, with	103'-110' Sand, with clay, gray	80'- 90' Clay, dank and with lighte
trace of lignite 40'- 70' Clay, dark-gray, with sand	110'-120' Clay, blue-gray, with sand 120'-130' Clay, blue-gray, with sand	stringer and 90'-120' Clay, blus-green, with sand,
70'- 80' Clay, gray, with sand, very-fine	6" of siltstone, hard white	very-fine
80'- 97' Clay, blue-gray, with sand 97'-97.3' Lignite	130'-150' Clay, blue-gray, with sand T. D.: 150'	120'-130' Clay, blue-green, with sand, very-fine, 4" hard siltstone
97.3'-148' Clay, blue-gray	1. D 100	130'-150' Clay, blue-green, with sand,
148'-150' Lignite	Drill Hole No. 39. Elevation 260'	very-fine
150'-160' Clay, dark-gray, clay, blue T. D.: 160'	Location: NW¼, Sec. 27, T. 11 N., R. 4 County, Poinsett	T. D.: 150'
	Logged by: D.W. Lumbert 12/	75. Drill Hole No. 44. Elevation 360'
Drill Hole No. 35. Elevation 306' Location: SE¼, Sec. 31, T. 11 N., R. 4 E.	0'- 10' Gravel	Location: NE¼, Sec. 4, T. 10 N., R. 4 E.
County, Poinsett	0'- 10' Gravel 10'- 20' Clay, light-gray, with sand	County, Poinsett Logged by: D. W. Lumbert 12/75.
Logged by: D. W. Lumbert 12/75.	20'- 30' Clay, dark-gray, with sand	
0'- 10' Sand, tan, with tan clay	30'- 40' Clay, gray, with sand 40'- 60' Clay, dark-gray, with sand	0'- 10' Clay, red, with sand 10'- 20' Pea gravel, sand and tan clay
10'- 20' Clay, with gravel, sandy	40'- 60' Clay, dark-gray, with sand 60'- 70' Clay, light-gray, with sand	10'- 20' Pea gravel, sand and tan clay 20'- 30' Clay, dark to light-tan to red,
20'- 40' Ciay, dark-gray	70'- 90' Clay, blue-gray, with sand	with sand
40'- 50' Clay, light-gray to tan, with fine sand	90'-100' Sand, light-gray, with sand	30'-40' Clay, dark-brown, with sand and trace of lignite at 40'
50'- 58' Clay, light to dark-gray, with	120'-130' Clay, blue-gray, with sand	40'- 50' Clay, dark-brown, with sand
trace of lignite 58'- 60' Clay, light to dark-gray, with	130'-160' Clay, light-gray, with sand	50'- 60' Clay, dark-brown
58'- 60' Clay, light to dark-gray, with very-fine sand	T. D.: 160'	60'- 70' Clay, dark-brown, with stringer of lignite @ 63'
60'- 73' Clay,dark-gray,w/trace of lignite	Drill Hole No. 40. Elevation 358'	70'-100' Clay, dark-gray, with sand
73'- 83' Cored Interval 10' Recovered: Lost:	Location: SE¼, Sec. 12, T. 10 N., R. 3	E. 100'-130' Clay, light-gray
10' 0'	County, Poinsett Logged by: D. W. Lumbert 12/	T. D.: 130′ 75.
4.5' Lignite, with clay intervals		Drill Hole No. 45. Elevation 342'
2.7' Lignite, with clay and in- crease in silt	0'- 10' Clay, red, with sand and gra 10'- 20' Gravel and clay, tan, with s	
2.8' Lignite, w/clay, dark-gray	20'- 40' Clay, white, with sand	end County, Poinsett Logged by: D. W. Lumbert 12/75.
83'- 87' Clay, dark-brown	40'- 50' Clay, dark-gray	
87'- 90' Clay, blue-gray with sand 90'-150' Sand, very-fine, white	50'- 70' Clay, dark-gray, with trace	
T. D.: 150'	70'-100' Clay, light-gray, with sand	and sand 10'- 30' Clay, light-tan, with very-fine
Drill Hole No. 26 Floreston 220/	100'-118' Clay, light-gray, tan and yell	ow, sand
Drill Hole No. 36. Elevation 332' Location: NE%, Sec. 8, T. 10 N., R. 4 E.	with sand 118'-120' Clay, white and light-gray, v	30'- 40' Clay, dark-brown, with very-fine
County, Poinsett	sand	sand and lignite stringer at 39' 40'- 50' Clay, dark-gray, with lignite
Logged by: D. W. Lumbert 12/75.	120'-140' Clay, white, with sandstone	stringer at 43'
0'- 10' Gravel, with sand, clay, red	140'-150' Clay, dark-gray, with sand T. D.: 150'	50'- 56' Clay, dark-gray 56'- 58' Lignite, and clay, dark-gray,
10'- 20' Sand, yellow, with clay, tan		with sand
20'- 30' Clay, yellow to tan, with sand, very-fine	Drill Hole No. 41. Elevation 448' Location: SE%. Sec. 18, T. 10 N., R. 5	58'- 60' Clay, dark-gray, with sand E. 60'- 80' Clay, light-gray, with sand
30'- 50' Clay, yellow, with sand	County, Poinsett	E. 60'- 80' Clay, light-gray, with sand 80'-120' Clay, bluish-green, with sand
50'- 61' Clay, dark-brown 61'- 65' Lignite @ 61'-62' with clay	Logged by: M. A. Stoyanov 12/	75. 120'-140' Clay, tan, with sand
61'- 65' Lignite @ 61'-62', with clay, dark-brown	0'- 10' Clay, tan, with sand, very-	140'-150' Clay, blue-green, with sand ine T. D.: 150'
65'- 98' Clay,blue-gray,w/sand, very-fine	10'- 20' Sand, tan, very-fine, with o	
98'-110' Clay, dark-brown, with sand 110'-148' Clay, dark-brown, with sand,	20' 40' Gravel 40' 70' Sand and gravel	Drill Hole No. 46. Elevation 258'
with trace of lignite	T. D.: 70'	Location: SE¼, Sec. 16, T. 10 N., R. 4 E. County, Poinsett
148'-150' Clay, blue-gray, with sand		Logged by: D. W. Lumbert 12/75.
T. D.: 150'	Drill Hole No. 42. Elevation 332'	0'- 10' Clay, red, with sand and gravel
Drill Hole No. 37. Elevation 342'	Location: NE¼, Sec. 20, T. 10 N., R. 4	
Location: SE¼, Sec. 1, T. 10 N., R. 3 E. County, Poinsett	County, Poinsett	and sand
Logged by: D. W. Lumbert 12/75.	Logged by: M. A. Stoyanov 12/	75. 20'- 28' Clay, red, with sand 28'- 30' Clay, dark-gray, with sand
	0'- 20' Clay, red, w/sand, very-fine,	and 30'- 36' Gravel
0'- 20' Clay, gray, tan, with sand 20'- 26' Gravel	pea-size gravel 10'- 20' Sand and gravel	36'- 40' Clay, dark-gray, with sand, trace
26'- 36' Clay, dark-gray	10'- 20' Sand and gravėl 20'- 60' Clay, whitė, w/sand, very-fine	of lignite at 39' 40'- 50' Clay, dark-brown, with sand
36'- 50' Clay, dark-brown, with trace of	60'- 80' Clay, silty, brown, lignite str	ng- 50'- 51%' Lignite
lignite 50'- 60' Clay, gray, with sand	ers @ 68′ and 71′ T. D.: 80′	51½'-55' Clay, dark-gray, with sand
60'-150' Clay, blue-gray, with sand		55'- 70' Clay, light-gray, with sand 70'- 80' Clay, bluish-green, with sand
T. D.: 150'	Drill Hole 43. Elevation 340'	80'-100' Clay, bluish-green with lignite
Drill Hole No. 38. Elevation 310'	Location: SE¼, Sec. 32, T. 11 N., R. 4 County, Poinsett	
Location: SE¼, Sec. 21, T. 11 N., R. 4 E.	Logged by: M. A. Stoyanov 12/	
County, Poinsett Logged by: D. W. Lumbert 12/75.		130'-150' Clay, bluish-gray, with sand
	0'- 10' Sand, tan, very-fine w/clay	T. D.: 150'

Drill Hole No. 47. Elevation 245'	10'- 40' Sand, coarse with gravel	4'- 10' Clay, light-gray to tan, with
Location: SW¼, Sec. 28, T. 10 N., R. 4 E.	40'- 90' Clay, white, with sand	sand
County, Poinsett	90'-100' Clay, light-brown, with sand	10'- 20' Clay, light-tan to light-gray,
Logged by: D. W. Lumbert 12/75.	100'-110' Pea gravel	with coarse sand and large to
	110'-120' Clay, light-gray, with sand	medium gravel
0'- 5' Clay, red to tan, with sand	120'-128' Sand, dark-gray, with clay	20'- 30' Clay, gray to light-gray, with
5'- 10' Clay, bluish-gray, tan, with sand	128'-150' Clay, dark-gray, with sand	sand
10'- 40' Clay, tan, with sand 40'- 50' Clay, dark-gray, with sand	T. D.: 150"	30'- 35' Clay, gray, with silt and trace
9.47,	D-10 11-1- N - E4 - E1	of lignite
lignite at 48' 2'' thickness 50'- 60' Clay, dark-gray, with sand, very-	Drill Hole No. 51. Elevation 355'	35'- 42' Clay, dark-gray, with silt
fine	Location: NE¼, Sec. 6, T. 10 N., R. 4 E.	42'- 50' Clay, blue-gray with silt
60'- 70' Clay, tan and gray, with sand	County, Poinsett	50'-110' Clay, blue-gray and tan, with
70'- 80' Sand, salt and pepper	Logged by: M. A. Stoyanov 12/75.	silt and fine sand
80'- 90' Sand, with clay, light-gray,	0'- 6' Clay, dark-tan, with sand and	T. D.: 110'
trace of lignite at 83'	gravel	Drill Hole No. 56. Elevation 240'
90'-100' Clay, gray to dark-brown, with	6'- 8' Pea-gravel	Location: NW¼, Sec. 10, T. 11 N., R. 4 E.
trace of lignite in thin layers	8'- 9' Clay, red with sand	County, Poinsett
100'-110' Clay, bluish-green, with sand	9'- 20' Gravel, pea-sized	Logged by: D. W. Lumbert 1/76.
110'-120' Clay, light-gray	T. D.: 20'	,,,,,,
120'-130' Clay, dark-brown, with trace of	Ph 111 1 1 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2	0'- 10' Clay, dark-brown, with sand
lignite in thin layers 130'-150' Clay, bluish-green, with sand	Drill Hole No. 52. Elevation 388'	and gravel
	Location: NW¼, Sec. 32, T. 11 N., R. 4 E.	10'- 20' Clay, brown, with sand and silt
T. D.: 150'	County, Poinsett	20'- 30' Clay, dark to light-gray, with
	Logged by: M. A. Stoyanov 12/75.	sand
Drill Hole No. 48. Elevation 407'	0'- 10' Clay, dark-tan with sand	30'- 40' Clay, dark to light-gray, with
Location: SE¼, Sec. 31, T. 10 N., R. 4 E.	0'- 10' Clay, dark-tan, with sand 10'- 30' Clay, red, with sand	sand 40'- 50' Black spongy peat
County, Poinsett	30'- 40' Clay, light-tan, with sand	
Logged by: D. W. Lumbert 12/75.	40'- 57' Clay, white, with sand	
	57'- 67' Clay, dark-brown, with sand	55'- 60' Fossil bed containing gastropods and pelecypods, sand, silt, and
0'- 10' Clay, red to tan, with very-fine	67'-70' Clay dark-gray with sand	gray-clay
sand	70'- 70'6" 6 inch lignite stringer	60'-100' Clay, white-light gray, with sand
10'- 20' Clay, dark-tan, with very-fine	70'6''-160' Clay, dark-gray, with sand	100'-110' Clay, gray, with silt
sand 20'- 30' Clay, red to dark-tan, with sand	160'-200' Clay, blue-green, with silt	T. D.: 110'
and to dark tall, with saila	T. D.: 200'	
	D-11 11-1- N - F2	Drill Hole No. 57. Elevation 262'
34'- 37' Gravel, small, with sand and clay, red	Drill Hole No. 53. Elevation 386'	Location: SE¼, Sec. 31, T. 11 N., R. 4 E.
37'- 45' Sand, salt and pepper	Location: SE¼, Sec. 19, T. 11 N., R. 4 E. County, Poinsett	County, Poinsett
45'- 50' Sand, black and white, with	Logged by: M.A. Stoyanov 12/75.	Logged by: M. A. Stoyanov 1/76.
grav el	1270	0'- 18' Clay, dark-tan
50'- 60' Sand, large	0'- 38' Clay, dark-tan, with sand	18'- 19' Pea gravel
60'- 79' Sand, iron cemented 79'- 90' Clay, dark-gray, with very-fine	38'- 42' Pea-gravel and sand	19'- 55' Clay, light-tan, with red silt
and gray, with voly line	42'- 60' Clay, brown to tan, with sand	55'- 74' Clay, and silt, light-tan to gray,
sand 90'-112' Clay, dark-brown, with very-fine	60'- 72' Pea gravel	with trace of lignite
7,, 10101, 11110	72'- 75' Lignite, with sand	74'- 93' Clay, gray, with silt
sand 112'-115' Clay, bluish-gray, with sand	75'- 88' Clay, gray, with sand	93'-107' Clay, gray, with silt and lignite
112'-115' Clay, bluish-gray, with sand 115'-115'3' Lignite, 3 in., hard	88'- 98' Clay, light-tan, with sand	stringers
115'3" 116' Clay, bluish-green to gray, with	98'-120' Clay, dark-gray 120'-121' Clay, dark-brown, with trace	107'-112' Clay, dark-brown, lignitic
sand	120'-121' Clay, dark-brown, with trace of lignite	112'-115' Clay, light-gray to tan
116'-120' Clay, bluish-gray, lignite trace	121'-124' Clay, dark-gray, with sand	115'-129' Clay, brown, with sand
120'-130' Clay, blue, light-gray, lignite	124'-125' Lignite stringer	129'-136' Clay, blue-gray, with silt 136'-190' Sand, very-fine, with lignite
trace	125'-163' Clay, gray to blue	tery tery tricin inglifts
130'-150' Clay, blue-gray, with sand,	163'-174' Clay, dark-gray, with lignite	stringer at 154' T. D.: 190'
lignite traces	stringers	1. D.: 190
T. D.: 150'	174'-194' Clay, dark-gray, with sand	
	194'-200' Clay, blue-gray	Drill Hole No. 58. Elevation 325'
Drill Hole No. 49 Elevenian 4454	T. D.: 200'	Location: NE¼, Sec. 36, T. 11 N., R. 3 E.
Drill Hole No. 49. Elevation 445' Location: SW¼, Sec. 7, T. 9 N., R. 4 E.	Delli Hala Na E4 E1	County, Poinsett
County, Cross	Drill Hole No. 54. Elevation 276'	Logged by: M. A. Stoyanov 1/76.
Logged by: D. W. Lumbert 12/75.	Location: SW¼, Sec. 10, T. 11 N., R. 4 E. County, Poinsett	0/ 40/ 0/
12/75.		0'- 10' Clay, dark-tan to dark-brown,
0'- 30' Clay, dark-tan, with sand	Logged by: M. A. Stoyanov 12/75.	with sand 10'- 14' Clay, dark-tan, with sand
30'- 40' Clay, reddish brown, with sand	0'- 42' Sand, white, tan and red	10'- 14' Clay, dark-tan, with sand 14'- 15' Gravel
40'- 50' Sand, salt and pepper	42'- 69' Sand with silt and clay gray	15'- 19' Clay, dark-tan, with silt
50'- 60' Sand 60'- 66' Gravel, pea-size, with sand	69'- 80' Clay, light-gray, with sand	19'- 22' Silt light-gray
60'- 66' Gravel, pea-size, with sand 66'- 70' Gravel, pea-size	80'-110' Sand, coarse, light-gray	22'- 34' Clay, white, with sand
70'- 80' Clay, red and tan, with very-	110'-134' Sand, very-fine, light gray	34'- 36' Clay, brown
fine sand	134'- Lignite stringer 134'-190' Sand, very-fine, light-gray	36'- 43' Clay, dark-gray
80'- 90' Sand and gravel	134'-190' Sand, very-fine, light-gray 190'-200' Clay, blue-green, with fine sand	43'- 53' Clay, dark-gray, with lignite
T. D.: 90'	T. D.: 200'	stringers
		53'- 59' Clay, dark-gray, with silt 59'- 61' Clay, lignitic
Drill Hole No. EO. EL.	Drill Hole No. 55. Elevation 262'	59′- 61′ Clay, lignitic 61′- 64′ Clay, dark-gray
Drill Hole No. 50. Elevation 402' Location: SW¼, Sec. 36, T. 10 N., R. 3 E.	Location: SE¼, Sec. 9, T. 11 N., R. 4 E.	64'- 69' Clay, lignitic
County, Poinsett	County, Poinsett	69'- 97' Clay, dark-gray
Logged by: M. A. Stoyanov 12/75.	Logged by: D. W. Lumbert 1/76.	97'-110' Clay, dark-brown
	0'- 4' Clay, brown, with coarse sand	110'-120' Clay, light-brown, with silt
0'- 10' Sand and gravel, red	0'- 4' Clay, brown, with coarse sand and gravel	120'-130' Clay, light-brown
	g	T. D.: 130'

Drill Hole No. 59. Elevation 312'	5'- 10' Sand	80'-100' Sand, light tan, with clay
Location: SE¼, Sec. 16, T. 11 N., R. 4 E.	10'- 17' Gravel	100'-120' Sand, white to tan
County, Poinsett Logged by: M. A. Stoyanov 1/76.	17'- 36' Clay, light gray, with silt 36'- 38' Clay, dark gray	120'-130' Sand, gray to light-gray
Logged by: M. A. Stoyanov 1/76.	36'- 38' Clay, dark gray 38'- 40' Clay, dark-brown, with si	130'-170' Sand, gray to light-gray and lt tan, with clay, gray
0' 22' Sand, dark-tan, with clay	40'- 48' Clay, gray	T. D.: 170'
22'- 23' Gravel 23'- 27' Sand, dark-tan, with clay	48'- 57' Clay, blue-gray, with silt	D. 11 1 1 1 07 m
23'- 27' Sand, dark-tan, with clay 27'- 34' Clay, light-gray, with sand	57'- 58' Clay, dark-brown, lignitic 58'- 64' Clay, gray, with silt	Drill Hole No. 67. Elevation 368' Location: NW¼, Sec. 35. T. 14 N., R. 3 E.
34'- 39' Clay, light-gray to light-tan		County, Craighead
with sand	67'- 68' Clay, dark-brown, with si	It Logged by: M. A. Stoyanov 2/76.
39'- 43' Clay, dark-brown, with sand 43'- 48' Clay, gray, with sand and		
trace of lignite	70'- 75' Peat (soft lignite?)	0'- 30' Sand and gravel (CAVE IN)
48'- 57' Clay, dark-gray, with sand	75'- 85' Cored Interval 10'	
57'- 71' Clay, dark-brown, lignitic 71'- 75' Clay, lignitic, with lignite	Recovered: Lost:	Drill Hole No. 68. Elevation 282'
stringer	3.5 Lignitic clay	Location: SE½, Sec. 21, T. 14 N., R. 3 E. County, Craighead
75'- 96' Clay, light-gray, with silt	1.5 Lignite	Logged by: M. A. Stoyanov 2/76.
96'-150' Clay, blue-green with silt T. D.: 150'	5.0 Clay, gray, with silt 85'-118' Clay, blue-gray, with silt	0'- 16' Clay, dark tan, with silt
	118'-126' Clay, dark-brown, with si	
Drill Hala No. 60 Floreston 200/	126'-134' Clay, blue-green, with silt	20'- 33' Clay, mottled, with silt
Drill Hole No. 60. Elevation 388' Location: NW¼, Sec. 28, T. 13,N., R. 4 E	134'-150' Clay, light gray, with silt T. D.: 150'	33' 38' Sand, white, with clay, tan 38'- 43' Clay, tan, with sand and silt
County, Craighead	1. 5 100	38'- 43' Clay, tan, with sand and silt 43'- 62' Clay, white, with sand, white,
Logged by: M. A. Stoyanov 1/76.		and silt
0'- 10' Sand, fine, with gravel	Location: NW¼, Sec. 17, T. 13 N., R. 4 E County, Craighead	
10'- 20' Sand, very-fine	Logged by: M. A. Stovanov 1/76	and silt 5. 102'-105' Siltstone layer,
20'- 30' Sand, very-fine, with white		105'-108' Lignitic clay
to gray clay, and trace of lignite		108'-118' Clay, white to tan, with silt
30'- 40' Clay, gray, to brown, with silt		d 118'-130' Clay, brown to white, with lignite
40'- 50' Clay, gray, with silt	38'- 60' Clay, gray, with silt	130'-138' Clay, white to tan, with silt
50'- 60' Clay, gray, with silt, very-fine sand, and glauconite	the state of the s	te 138'-156' Clay, gray, with silt
60'- 70' Clay, gray and white	stringer 70'-150' Clay, light-gray, with silt	156'-157' Clay, gray, w/lignite and silt 157'-160' Clay, gray, with silt
70'- 90' Clay, blue-green to brown, with	150'- Sand, white	160'-168' Core interval 8'
silt 90'-100' Clay, light blue to gray, with	T. D.: 150'	Recovered: Lost:
silt		8′ 0
		160' 162 E' Clay many with all
100'-105' Clay, blue-green, with silt	Drill Hole No. 64. Elevation 372'	160'-163.5' Clay, gray, with silt 163.5'-164' Lignite
100'-105' Clay, blue-green, with silt 105'-120' Clay, light-gray, with silt	Location: SE¼, Sec. 7, T. 13 N., R. 4 E	163.5'-164' Lignite
100'-105' Clay, blue-green, with silt 105'-120' Clay, light-gray, with silt 120'-130' Clay, light blue-gray and white, with silt	Location: SE¼, Sec. 7, T. 13 N., R. 4 E County, Craighead	163.5'-164' Lignite 164'-165' Clay, gray, with sand and siltstone
100'-105' Clay, blue-green, with silt 105'-120' Clay, light-gray, with silt 120'-130' Clay, light blue-gray and white with silt 130'-160' Clay, light gray-green, with silt	Location: SE¼, Sec. 7, T. 13 N., R. 4 E County, Craighead Logged by: D. W. Lumbert 2/76	163.5'-164' Lignite 164'-165' Clay, gray, with sand and siltstone 165'-168' Clay, gray, with silt
100'-105' Clay, blue-green, with silt 105'-120' Clay, light-gray, with silt 120'-130' Clay, light blue-gray and white, with silt	Location: SE¼, Sec. 7, T. 13 N., R. 4 E County, Craighead Logged by: D. W. Lumbert 2/76 0'- 40' Sand, large, with gravel, pea-siz	163.5'-164' Lignite 164'-165' Clay, gray, with sand and siltstone 5. 165'-168' Clay, gray, with silt 168'-170' Clay, gray, with silt te 170'-174' Siltstone, with clay, white
100'-105' Clay, blue-green, with silt 105'-120' Clay, light-gray, with silt 120'-130' Clay, light blue-gray and white, with silt 130'-160' Clay, light gray-green, with silt T. D.: 160 Drill Hole No. 61. Elevation 292'	Location: SE¼, Sec. 7, T. 13 N., R. 4 E County, Craighead Logged by: D. W. Lumbert 2/76 0'- 40' Sand, large, with gravel, pea-siz 40'- 45' Sand, large	163.5'-164' Lignite 164'-165' Clay, gray, with sand and siltstone 165'-168' Clay, gray, with silt 168'-170' Clay, gray, with silt 170'-174' Siltstone, with clay, white 174'-180' Clay, gray, lignite trace
100'-105' Clay, blue-green, with silt 105'-120' Clay, light-gray, with silt 120'-130' Clay, light blue-gray and white, with silt 130'-160' Clay, light gray-green, with silt T. D.: 160 Drill Hole No. 61. Elevation 292' Location:SW½, Sec. 16, T. 13 N., R. 4 E.	Location: SE¼, Sec. 7, T. 13 N., R. 4 E County, Craighead Logged by: D. W. Lumbert 2/76 0'- 40' Sand, large, with gravel, pea-siz 40'- 45' Sand, large 45'- 47' Clay, light gray 47'- 50' Sand, large	163.5'-164' Lignite 164'-165' Clay, gray, with sand and siltstone 165'-168' Clay, gray, with silt 168'-170' Clay, gray, with silt 170'-174' Siltstone, with clay, white 174'-180' Clay, gray, lignite trace 180'-185' Recovered:
100'-105' Clay, blue-green, with silt 105'-120' Clay, light-gray, with silt 120'-130' Clay, light blue-gray and white, with silt 130'-160' Clay, light gray-green, with silt T. D.: 160 Drill Hole No. 61. Elevation 292' Location:SW½, Sec. 16, T. 13 N., R. 4 E. County, Craighead	Location: SE¼, Sec. 7, T. 13 N., R. 4 E County, Craighead Logged by: D. W. Lumbert 2/76 O'- 40' Sand, large, with gravel, pea-siz 40'- 45' Sand, large 45'- 47' Clay, light gray 47'- 50' Sand, large 50'- 90' Sand, large, w/gravel, pea siz	163.5'-164' Lignite 164'-165' Clay, gray, with sand and siltstone 165'-168' Clay, gray, with silt 168'-170' Clay, gray, with silt 2 170'-174' Siltstone, with clay, white 174'-180' Clay, gray, lignite trace 180'-185' Core interval 5' Recovered: Lost: 5' 0'
100'-105' Clay, blue-green, with silt 105'-120' Clay, light-gray, with silt 120'-130' Clay, light blue-gray and white, with silt 130'-160' Clay, light gray-green, with silt T. D.: 160 Drill Hole No. 61. Elevation 292' Location:SW¼, Sec. 16, T. 13 N., R. 4 E. County, Craighead Logged by: M. A. Stoyanov 1/76.	Location: SE¼, Sec. 7, T. 13 N., R. 4 E County, Craighead Logged by: D. W. Lumbert 2/76 0'- 40' Sand, large, with gravel, pea-siz 40'- 45' Sand, large 45'- 47' Clay, light gray 47'- 50' Sand, large	163.5'-164' Lignite 164'-165' Clay, gray, with sand and siltstone 165'-168' Clay, gray, with silt 168'-170' Clay, gray, with silt 20'-174' Siltstone, with clay, white 174'-180' Clay, gray, lignite trace 180'-185' Recovered: Lost: 5' 0' 180'-181' Clay, light-brown,
100'-105' Clay, blue-green, with silt 105'-120' Clay, light-gray, with silt 120'-130' Clay, light-gray, with silt 130'-160' Clay, light gray-green, with silt T. D.: 160 Drill Hole No. 61. Elevation 292' Location:SW¼, Sec. 16, T. 13 N., R. 4 E. County, Craighead Logged by: M. A. Stoyanov 1/76.	Location: SE¼, Sec. 7, T. 13 N., R. 4 E County, Craighead Logged by: D. W. Lumbert 2/76 O'- 40' Sand, large, with gravel, pea-siz 40'- 45' Sand, large 45'- 47' Clay, light gray 47'- 50' Sand, large 50'- 90' Sand, large, w/gravel, pea siz	163.5'-164' Lignite 164'-165' Clay, gray, with sand and siltstone 165'-168' Clay, gray, with silt 168'-170' Clay, gray, with silt 170'-174' Siltstone, with clay, white 174'-180' Clay, gray, lignite trace 180'-185' Core interval 5' Recovered: Lost: 5' 0' 180'-181' Clay, light-brown, with silt
100'-105' Clay, blue-green, with silt 105'-120' Clay, light-gray, with silt 120'-130' Clay, light blue-gray and white, with silt 130'-160' Clay, light gray-green, with silt T. D.: 160 Drill Hole No. 61. Elevation 292' Location:SW½, Sec. 16, T. 13 N., R. 4 E. County, Craighead Logged by: M. A. Stoyanov 1/76. 0'- 4' Clay, light-tan, with sand 4'- 20' Clay, dark-tan, with sand and	Location: SE¼, Sec. 7, T. 13 N., R. 4 E County, Craighead Logged by: D. W. Lumbert 2/76 0'- 40' Sand, large, with gravel, pea-siz 40'- 45' Sand, large 45'- 47' Clay, light gray 47'- 50' Sand, large 50'- 90' Sand, large, w/gravel, pea siz T. D.: 90' Drill Hole No. 65. Elevation 409' Location: SW¼, Sec. 36, T. 14 N., R. 3 E	163.5'-164' Lignite 164'-165' Clay, gray, with sand and siltstone 165'-168' Clay, gray, with silt 168'-170' Clay, gray, with silt 170'-174' Siltstone, with clay, white 174'-180' Clay, gray, lignite trace 180'-185' Recovered: Lost: 5' 0' 180'-181' Clay, light-brown, with silt 181'-183' Lignite 183'-184' Clay, light-brown,
100'.105' Clay, blue-green, with silt 105'-120' Clay, light-gray, with silt 120'-130' Clay, light blue-gray and white, with silt 130'-160' Clay, light gray-green, with silt T. D.: 160 Drill Hole No. 61. Elevation 292' Location:SW¼, Sec. 16, T. 13 N., R. 4 E. County, Craighead Logged by: M. A. Stoyanov 1/76. 0'- 4' Clay, light-tan, with sand 4'- 20' Clay, dark-tan, with sand and gravel 20'- 30' Clay, white, with sand	Location: SE¼, Sec. 7, T. 13 N., R. 4 E County, Craighead Logged by: D. W. Lumbert 2/76 0'- 40' Sand, large, with gravel, pea-siz 40'- 45' Sand, large 45'- 47' Clay, light gray 47'- 50' Sand, large 50'- 90' Sand, large, w/gravel, pea siz T. D.: 90' Drill Hole No. 65. Elevation 409' Location: SW¼, Sec. 36, T. 14 N., R. 3 E County, Craighead	163.5'-164' Lignite 164'-165' Clay, gray, with sand and siltstone 165'-168' Clay, gray, with silt 168'-170' Clay, gray, with silt 170'-174' Siltstone, with clay, white 174'-180' Clay, gray, lignite trace 180'-185' Recovered: Lost: 5' 0' 180'-181' Clay, light-brown, with silt 181'-183' Lignite 183'-184' Clay, light-brown, 184'-185' Clay, light-brown
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100'.105' Clay, blue-green, with silt 105'-120' Clay, light-gray, with silt 120'-130' Clay, light blue-gray and white, with silt 130'-160' Clay, light gray-green, with silt T. D.: 160 Drill Hole No. 61. Elevation 292' Location:SW½, Sec. 16, T. 13 N., R. 4 E. County, Craighead Logged by: M. A. Stoyanov 1/76. 0'- 4' Clay, light-tan, with sand 4'- 20' Clay, dark-tan, with sand and gravel 20'- 30' Clay, white, with sand 30'- 32' Clay, white to light-gray, with sand	Location: SE¼, Sec. 7, T. 13 N., R. 4 E County, Craighead Logged by: D. W. Lumbert 2/76 0'- 40' Sand, large, with gravel, pea-siz 45'- 47' Clay, light gray 47'- 50' Sand, large 50'- 90' Sand, large, w/gravel, pea siz T. D.: 90' Drill Hole No. 65. Elevation 409' Location: SW¼, Sec. 36, T. 14 N., R. 3 E County, Craighead Logged by: D. W. Lumbert 2/76 0'- 20' Sand and gravel, with some clay	163.5'-164' Lignite 164'-165' Clay, gray, with sand and siltstone 165'-168' Clay, gray, with silt 168'-170' Clay, gray, with silt 170'-174' Siltstone, with clay, white 174'-180' Clay, gray, lignite trace 180'-185' Recovered: Lost: 5' O' 180'-181' Clay, light-brown, with silt 181'-183' Lignite 183'-184' Clay, light-brown, 184'-185' Clay, light-brown, with silt 185'-186' Clay, very-lignitic
100'-105' Clay, blue-green, with silt 105'-120' Clay, light-gray, with silt 120'-130' Clay, light blue-gray and white, with silt 130'-160' Clay, light gray-green, with silt T. D.: 160 Drill Hole No. 61. Elevation 292' Location:SW'/s, Sec. 16, T. 13 N., R. 4 E. County, Craighead Logged by: M. A. Stoyanov 1/76. 0'- 4' Clay, light-tan, with sand 4'- 20' Clay, dark-tan, with sand and gravel 20'- 30' Clay, white, with sand 30'- 32' Clay, white, with sand 30'- 32' Clay, white to light-gray, with sand 32'- 50' Sand, gray, very-fine, with white clay	Location: SE¼, Sec. 7, T. 13 N., R. 4 E County, Craighead Logged by: D. W. Lumbert 2/76 0'- 40' Sand, large, with gravel, pea-siz 40'- 45' Sand, large 45'- 47' Clay, light gray 47'- 50' Sand, large 50'- 90' Sand, large, w/gravel, pea siz T. D.: 90' Drill Hole No. 65. Elevation 409' Location: SW¼, Sec. 36, T. 14 N., R. 3 E County, Craighead Logged by: D. W. Lumbert 2/76 0'- 20' Sand and gravel, with some clay dark tan	163.5'-164' Lignite 164'-165' Clay, gray, with sand and siltstone 165'-168' Clay, gray, with silt 168'-170' Clay, gray, with silt 170'-174' Siltstone, with clay, white 174'-180' Clay, gray, lignite trace 180'-185' Recovered: Lost: 5' 0' 180'-181' Clay, light-brown, with silt 181'-183' Lignite 183'-184' Clay, light-brown, 184'-185' Clay, light-brown to blue-green, with silt 1, 185'-186' Clay, very-lignitic 186'-190' Clay, blue, with silt
100'.105' Clay, blue-green, with silt 105'-120' Clay, light-gray, with silt 120'-130' Clay, light blue-gray and white, with silt 130'-160' Clay, light gray-green, with silt T. D.: 160 Drill Hole No. 61. Elevation 292' Location:SW%, Sec. 16, T. 13 N., R. 4 E. County, Craighead Logged by: M. A. Stoyanov 1/76. 0'- 4' Clay, light-tan, with sand 4'- 20' Clay, dark-tan, with sand and gravel 20'- 30' Clay, white, with sand 30'- 32' Clay, white, with sand 32'- 50' Sand, gray, very-fine, with white clay 50'- 60' Clay, gray, with sand	Location: SE¼, Sec. 7, T. 13 N., R. 4 E County, Craighead Logged by: D. W. Lumbert 2/76 0'- 40' Sand, large, with gravel, pea-siz 40'- 45' Sand, large 45'- 47' Clay, light gray 47'- 50' Sand, large 50'- 90' Sand, large, w/gravel, pea siz T. D.: 90' Drill Hole No. 65. Elevation 409' Location: SW¼, Sec. 36, T. 14 N., R. 3 E County, Craighead Logged by: D. W. Lumbert 2/76 0'- 20' Sand and gravel, with some clay dark tan 20'- 42' Gravel, pebble-size, with san-42'- 50' Clay, light-gray to tan	163.5'-164' Lignite 164'-165' Clay, gray, with sand and siltstone 165'-168' Clay, gray, with silt 168'-170' Clay, gray, with silt 170'-174' Siltstone, with clay, white 174'-180' Clay, gray, lignite trace 180'-185' Recovered: Lost: 5' 0' 180'-181' Clay, light-brown, with silt 181'-183' Lignite 183'-184' Clay, light-brown, 184'-185' Clay, light-brown to blue-green, with silt (7, 185'-186' Clay, very-lignitic 186'-190' Clay, blue, with silt 190'-200' Core interval 10'
100'-105' Clay, blue-green, with silt 105'-120' Clay, light-gray, with silt 120'-130' Clay, light-gray, with silt 120'-130' Clay, light blue-gray and white, with silt 130'-160' Clay, light gray-green, with silt T. D.: 160 Drill Hole No. 61. Elevation 292' Location:SW½, Sec. 16, T. 13 N., R. 4 E. County, Craighead Logged by: M. A. Stoyanov 1/76. 0'- 4' Clay, light-tan, with sand 4'- 20' Clay, light-tan, with sand and gravel 20'- 30' Clay, white, with sand 30'- 32' Clay, white to light-gray, with sand 32'- 50' Sand, gray, very-fine, with white clay 50'- 60' Clay, gray, with sand 60'-118' Clay, gray to light-tan, with	Location: SE¼, Sec. 7, T. 13 N., R. 4 E County, Craighead Logged by: D. W. Lumbert 2/76 0'- 40' Sand, large, with gravel, pea-siz 40'- 45' Sand, large 45'- 47' Clay, light gray 47'- 50' Sand, large 50'- 90' Sand, large, w/gravel, pea siz T. D.: 90' Drill Hole No. 65. Elevation 409' Location: SW¼, Sec. 36, T. 14 N., R. 3 E County, Craighead Logged by: D. W. Lumbert 2/76 0'- 20' Sand and gravel, with some clay dark tan 20'- 42' Gravel, pebble-size, with san 42'- 50' Clay, light-gray to tan 50'- 70' Sand, with clay, light-gray	163.5'-164' Lignite 164'-165' Clay, gray, with sand and siltstone 165'-168' Clay, gray, with silt 168'-170' Clay, gray, with silt 170'-174' Siltstone, with clay, white 174'-180' Clay, gray, lignite trace 180'-185' Recovered: Lost: 5' 0' 180'-181' Clay, light-brown, with silt 181'-183' Lignite 183'-184' Clay, light-brown, 184'-185' Clay, light-brown, 186'-190' Clay, blue, with silt 190'-200' Recovered: Lost: 10' 0' 0'
100'-105' Clay, blue-green, with silt 105'-120' Clay, light-gray, with silt 120'-130' Clay, light-gray, with silt 130'-160' Clay, light gray-green, with silt T. D.: 160 Drill Hole No. 61. Elevation 292' Location:SW½, Sec. 16, T. 13 N., R. 4 E. County, Craighead Logged by: M. A. Stoyanov 1/76. 0'- 4' Clay, light-tan, with sand 4'- 20' Clay, dark-tan, with sand and gravel 20'- 30' Clay, white, with sand 30'- 32' Clay, white to light-gray, with sand 32'- 50' Sand, gray, very-fine, with white clay 50'- 60' Clay, gray, with sand 60'-118' Clay, gray to light-tan, with sand 118'-137' Clay, dark-gray with silt	Location: SE¼, Sec. 7, T. 13 N., R. 4 E County, Craighead Logged by: D. W. Lumbert 2/76 0'- 40' Sand, large, with gravel, pea-siz 40'- 45' Sand, large 45'- 47' Clay, light gray 47'- 50' Sand, large 50'- 90' Sand, large, w/gravel, pea siz T. D.: 90' Drill Hole No. 65. Elevation 409' Location: SW¼, Sec. 36, T. 14 N., R. 3 E County, Craighead Logged by: D. W. Lumbert 2/76 0'- 20' Sand and gravel, with some clay dark tan 20'- 42' Gravel, pebble-size, with san 42'- 50' Clay, light-gray to tan 50'- 70' Sand, with clay, light-gray 70'-138' Sand	163.5'-164' Lignite 164'-165' Clay, gray, with sand and siltstone 165'-168' Clay, gray, with silt 168'-170' Clay, gray, with silt 170'-174' Siltstone, with clay, white 174'-180' Clay, gray, lignite trace 180'-185' Recovered: Lost: 5' Recovered: Lost: 5' O' 180'-181' Clay, light-brown, with silt 181'-183' Lignite 183'-184' Clay, light-brown, 184'-185' Clay, light-brown to blue-green, with silt 186'-190' Clay, very-lignitic 186'-190' Clay, blue, with silt 190'-200' Recovered: Lost: 10' 0' 190'-197.5' Clay, tan and gray,
100'-105' Clay, blue-green, with silt 105'-120' Clay, light-gray, with silt 120'-130' Clay, light-gray, with silt 130'-160' Clay, light gray-green, with silt T. D.: 160 Drill Hole No. 61. Elevation 292' Location:SW¼, Sec. 16, T. 13 N., R. 4 E. County, Craighead Logged by: M. A. Stoyanov 1/76. 0'- 4' Clay, light-tan, with sand 4'- 20' Clay, dark-tan, with sand and gravel 20'- 30' Clay, white, with sand 30'- 32' Clay, white to light-gray, with sand 32'- 50' Sand, gray, very-fine, with white clay 50'- 60' Clay, gray, with sand 60'-118' Clay, gray to light-tan, with sand 118'-137' Clay, dark-gray, with silt 137'-137'4'' Siltstone	Location: SE¼, Sec. 7, T. 13 N., R. 4 E County, Craighead Logged by: D. W. Lumbert 2/76 0'- 40' Sand, large, with gravel, pea-siz 40'- 45' Sand, large 45'- 47' Clay, light gray 47'- 50' Sand, large 50'- 90' Sand, large, w/gravel, pea siz T. D.: 90' Drill Hole No. 65. Elevation 409' Location: SW¼, Sec. 36, T. 14 N., R. 3 E County, Craighead Logged by: D. W. Lumbert 2/76 0'- 20' Sand and gravel, with some clay dark tan 20'- 42' Gravel, pebble-size, with san 42'- 50' Clay, light-gray to tan 50'- 70' Sand, with clay, light-gray 70'-138' Sand 138'-145' Clay, light-gray to tan, with sand	163.5'-164' Lignite 164'-165' Clay, gray, with sand and siltstone 165'-168' Clay, gray, with silt 168'-170' Clay, gray, with silt 170'-174' Siltstone, with clay, white 174'-180' Clay, gray, lignite trace 180'-185' Recovered: Lost: 5' 0' 180'-181' Clay, light-brown, with silt 181'-183' Lignite 183'-184' Clay, light-brown, 184'-185' Clay, light-brown, with silt 181'-183' Clay, light-brown, 184'-185' Clay, light-brown, 186'-190' Clay, blue, with silt 190'-200' Clay, blue, with silt 190'-200' Recovered: Lost: 10' 0' 190'-197.5' Clay, tan and gray, very sandy, with silt
100'-105' Clay, blue-green, with silt 105'-120' Clay, light-gray, with silt 120'-130' Clay, light-gray, with silt 130'-160' Clay, light gray-green, with silt Clay, light gray-green, with silt T. D.: 160 Drill Hole No. 61. Elevation 292' Location:SW'4, Sec. 16, T. 13 N., R. 4 E. County, Craighead Logged by: M. A. Stoyanov 1/76. 0'- 4' Clay, light-tan, with sand 4'- 20' Clay, dark-tan, with sand and gravel 20'- 30' Clay, white, with sand 30'- 32' Clay, white to light-gray, with sand 30'- 50' Sand, gray, very-fine, with white clay 50'- 60' Clay, gray, with sand 60'-118' Clay, gray to light-tan, with sand 118'-137' Clay, dark-gray, with silt 137'-137'4'' Slitstone 137'4''-144' Clay, dark-gray, with silt	Location: SE¼, Sec. 7, T. 13 N., R. 4 E County, Craighead Logged by: D. W. Lumbert 2/76 40′- 45′ Sand, large 45′- 47′ Clay, light gray 47′- 50′ Sand, large 50′- 90′ Sand, large, w/gravel, pea siz T. D.: 90′ Drill Hole No. 65. Elevation 409′ Location: SW¼, Sec. 36, T. 14 N., R. 3 E County, Craighead Logged by: D. W. Lumbert 2/76 0′- 20′ Sand and gravel, with some clay dark tan 20′- 42′ Gravel, pebble-size, with san 42′- 50′ Clay, light-gray to tan 50′- 70′ Sand, with clay, light-gray to tan, with sand 138′-145′ Clay, light-gray to tan, with sand 145′-150′ Clay, red with sand, and very	163.5'-164' Lignite 164'-165' Clay, gray, with sand and siltstone 165'-168' Clay, gray, with silt 168'-170' Clay, gray, with silt 170'-174' Siltstone, with clay, white 174'-180' Clay, gray, lignite trace 180'-185' Recovered: Lost: 5' 0' 180'-181' Clay, light-brown, with silt 181'-183' Lignite 183'-184' Clay, light-brown, 184'-185' Clay, light-brown to blue-green, with silt 186'-190' Clay, very-lignitic 186'-190' Clay, blue, with silt 190'-200' Recovered: Lost: 10' 0' 190'-197.5' Clay, tan and gray, very sandy, with silt
100'-105' Clay, blue-green, with silt 105'-120' Clay, light-gray, with silt 120'-130' Clay, light-gray, with silt 130'-160' Clay, light gray-green, with silt 130'-160' Clay, light gray-green, with silt T. D.: 160 Drill Hole No. 61. Elevation 292' Location:SW½, Sec. 16, T. 13 N., R. 4 E. County, Craighead Logged by: M. A. Stoyanov 1/76. 0'- 4' Clay, light-tan, with sand 4'- 20' Clay, dark-tan, with sand and gravel 20'- 30' Clay, white, with sand 30'- 32' Clay, white to light-gray, with sand 32'- 50' Sand, gray, very-fine, with white clay 50'- 60' Clay, gray, with sand 60'-118' Clay, gray to light-tan, with sand 118'-137' Clay, dark-gray, with silt 137'-137'4'' Siltstone 137'4''-144' Clay, dark-gray, with silt 144'-162' Clay, dark-gray, with silt and sand	Location: SE¼, Sec. 7, T. 13 N., R. 4 E County, Craighead Logged by: D. W. Lumbert 2/76 0'- 40' Sand, large, with gravel, pea-siz 40'- 45' Sand, large 45'- 47' Clay, light gray 47'- 50' Sand, large 50'- 90' Sand, large, w/gravel, pea siz T. D.: 90' Drill Hole No. 65. Elevation 409' Location: SW¼, Sec. 36, T. 14 N., R. 3 E County, Craighead Logged by: D. W. Lumbert 2/76 0'- 20' Sand and gravel, with some clay dark tan 20'- 42' Gravel, pebble-size, with san 42'- 50' Clay, light-gray to tan 50'- 70' Sand, with clay, light-gray 70'-138' Sand 138'-145' Clay, light-gray to tan, with sand 145'-150' Clay, red with sand, and very fine silt	163.5'-164' Lignite 164'-165' Clay, gray, with sand and siltstone 165'-168' Clay, gray, with silt 168'-170' Clay, gray, with silt 2 170'-174' 174'-180' Clay, gray, lignite trace 180'-185' Recovered: 2 180'-181' Clay, light-brown, with silt 2 181'-183' Lignite 2 183'-184' Clay, light-brown, 184'-185' Clay, light-brown to blue-green, with silt 2 186'-190' Clay, very lignitic 2 186'-190' Clay, blue, with silt 2 190'-200' Recovered: 3 10' 190'-197.5' Clay, tan and gray, very sandy, with silt 3 197.5'-198.5' Clay, blue-green, with lignite
100'-105' Clay, blue-green, with silt 105'-120' Clay, light-gray, with silt 120'-130' Clay, light-gray, with silt 130'-160' Clay, light gray-green, with silt T. D.: 160 Drill Hole No. 61. Elevation 292' Location:SW¼, Sec. 16, T. 13 N., R. 4 E. County, Craighead Logged by: M. A. Stoyanov 1/76. 0'- 4' Clay, light-tan, with sand 4'- 20' Clay, dark-tan, with sand and gravel 20'- 30' Clay, white, with sand 30'- 32' Clay, white to light-gray, with sand 30'- 32' Clay, white to light-gray, with sand 32'- 50' Sand, gray, very-fine, with white clay 50'- 60' Clay, gray, with sand 60'-118' Clay, gray, with sand 118'-137' Clay, dark-gray, with silt 137'-137'4'' Siltstone 137'4''-144' Clay, dark-gray, with silt and sand 162'-166' Clay, gray, with siltstone, sand	Location: SE¼, Sec. 7, T. 13 N., R. 4 E County, Craighead Logged by: D. W. Lumbert 2/76 40′- 45′ Sand, large 45′- 47′ Clay, light gray 47′- 50′ Sand, large 50′- 90′ Sand, large, w/gravel, pea siz T. D.: 90′ Drill Hole No. 65. Elevation 409′ Location: SW¼, Sec. 36, T. 14 N., R. 3 E County, Craighead Logged by: D. W. Lumbert 2/76 0′- 20′ Sand and gravel, with some clay dark tan 20′- 42′ Gravel, pebble-size, with sand 42′- 50′ Clay, light-gray to tan 50′- 70′ Sand, with clay, light-gray to tan 50′- 138′ Sand 138′-145′ Clay, light-gray to tan, with sand 145′-150′ Clay, light-gray to tan, with sand 145′-150′ Clay, light-gray to tan, with sand 145′-150′ Clay, light-gray, with silt 150′-160′ Clay, light-gray, with sand and silt 160′-190′ Clay, light-gray, with sand and silt 160′-190′ Clay, red, with sand and silt	163.5'-164' Lignite 164'-165' Clay, gray, with sand and siltstone 165'-168' Clay, gray, with silt 168'-170' Clay, gray, with silt 170'-174' Siltstone, with clay, white 174'-180' Clay, gray, lignite trace 180'-185' Recovered: Lost: 5' 0' 180'-181' Clay, light-brown, with silt 181'-183' Lignite 183'-184' Clay, light-brown, 184'-185' Clay, light-brown to blue-green, with silt 190'-200' Clay, blue, with silt 190'-200' Cre interval 10' 190'-197.5' Clay, tan and gray, very sandy, with silt 197.5'-198.5' Clay, blue-green, with lignite
100'-105' Clay, blue-green, with silt 105'-120' Clay, light-gray, with silt 120'-130' Clay, light blue-gray and white, with silt 130'-160' Clay, light gray-green, with silt T. D.: 160 Drill Hole No. 61. Elevation 292' Location:SW½, Sec. 16, T. 13 N., R. 4 E. County, Craighead Logged by: M. A. Stoyanov 1/76. 0'- 4' Clay, light-tan, with sand 4'- 20' Clay, dark-tan, with sand and gravel 20'- 30' Clay, white, with sand 30'- 32' Clay, white to light-gray, with sand 32'- 50' Sand, gray, very-fine, with white clay 50'- 60' Clay, gray, with sand 60'-118' Clay, gray to light-tan, with sand 118'-137' Clay, dark-gray, with silt 137'-137'4' Siltstone 137'4''-144' Clay, dark-gray, with silt 144'-162' Clay, dark-gray, with silt and sand 162'-166' Clay, gray, with siltstone, sand and trace of lignite	Location: SE¼, Sec. 7, T. 13 N., R. 4 E County, Craighead Logged by: D. W. Lumbert 2/76 0'- 40' Sand, large, with gravel, pea-siz 40'- 45' Sand, large 45'- 47' Clay, light gray 47'- 50' Sand, large 50'- 90' Sand, large, w/gravel, pea siz T. D.: 90' Drill Hole No. 65. Elevation 409' Location: SW¼, Sec. 36, T. 14 N., R. 3 E County, Craighead Logged by: D. W. Lumbert 2/76 0'- 20' Sand and gravel, with some clay dark tan 20'- 42' Gravel, pebble-size, with san 42'- 50' Clay, light-gray to tan 50'- 70' Sand, with clay, light-gray 70'-138' Sand 138'-145' Clay, light-gray to tan, with sand 145'-150' Clay, red with sand, and very fine silt 150'-160' Clay, red with sand and sil 190'-200' Clay, red, with sand 190'-200' Clay, red, with sand	163.5'-164' Lignite 164'-165' Clay, gray, with sand and siltstone 165'-168' Clay, gray, with silt 168'-170' Clay, gray, with silt 2 170'-174' 174'-180' Clay, gray, lignite trace 180'-185' Core interval 5' Recovered: Lost: 5' 0' 180'-181' Clay, light-brown, with silt 181'-183' Lignite 183'-184' Clay, light-brown, 184'-185' Clay, light-brown to blue-green, with silt 2 (Clay, very-lignitic Clay, blue, with silt 190'-200' Clay, blue, with silt 2 (Clay, very-lignitic Clay, blue, with silt 2 (Clay, blue, with silt 3 (Clay, blue, with silt 3 (Clay, blue, with silt 4 (Clay, blue, with silt 5 (Clay, blue, with silt 6 (Clay, blue, with silt 7 (Clay, blue, with lignite 197.5'-198.5' Clay, blue-green, with lignite 198.5'-200' Clay, blue-green
100'-105' Clay, blue-green, with silt 105'-120' Clay, light-gray, with silt 120'-130' Clay, light-gray, with silt 130'-160' Clay, light gray-green, with silt T. D.: 160 Drill Hole No. 61. Elevation 292' Location:SW¼, Sec. 16, T. 13 N., R. 4 E. County, Craighead Logged by: M. A. Stoyanov 1/76. 0'- 4' Clay, light-tan, with sand 4'- 20' Clay, dark-tan, with sand and gravel 20'- 30' Clay, white, with sand 30'- 32' Clay, white to light-gray, with sand 30'- 32' Clay, white to light-gray, with sand 32'- 50' Sand, gray, very-fine, with white clay 50'- 60' Clay, gray, with sand 60'-118' Clay, gray, with sand 60'-118' Clay, gray, with silt 137'-137'4'' Siltstone 137'4''-144' Clay, dark-gray, with silt 144'-162' Clay, dark-gray, with silt and sand 162'-166' Clay, gray, with siltstone, sand and trace of lignite 166'-200' Sand, red to tan, with clay and silt	Location: SE¼, Sec. 7, T. 13 N., R. 4 E County, Craighead Logged by: D. W. Lumbert 2/76 40′- 45′ Sand, large 45′- 47′ Clay, light gray 47′- 50′ Sand, large 50′- 90′ Sand, large, w/gravel, pea siz T. D.: 90′ Drill Hole No. 65. Elevation 409′ Location: SW¼, Sec. 36, T. 14 N., R. 3 E County, Craighead Logged by: D. W. Lumbert 2/76 0′- 20′ Sand and gravel, with some clay dark tan 20′- 42′ Gravel, pebble-size, with sand 42′- 50′ Clay, light-gray to tan 50′- 70′ Sand, with clay, light-gray to tan 50′- 138′ Sand 138′-145′ Clay, light-gray to tan, with sand 145′-150′ Clay, light-gray to tan, with sand 145′-150′ Clay, light-gray to tan, with sand 145′-150′ Clay, light-gray, with silt 150′-160′ Clay, light-gray, with sand and silt 160′-190′ Clay, light-gray, with sand and silt 160′-190′ Clay, red, with sand and silt	163.5'-164' Lignite 164'-165' Clay, gray, with sand and siltstone 165'-168' Clay, gray, with silt 168'-170' Clay, gray, with silt 170'-174' Siltstone, with clay, white 174'-180' Clay, gray, lignite trace 180'-185' Recovered: Lost: 5' 0' 180'-181' Clay, light-brown, with silt 181'-183' Lignite 183'-184' Clay, light-brown, 184'-185' Clay, light-brown, with silt 183'-184' Clay, light-brown, 184'-185' Clay, light-brown, 18
100'-105' Clay, blue-green, with silt 105'-120' Clay, light-gray, with silt 120'-130' Clay, light-gray, with silt 120'-130' Clay, light blue-gray and white, with silt 130'-160' Clay, light gray-green, with silt T. D.: 160 Drill Hole No. 61. Elevation 292' Location:SW½, Sec. 16, T. 13 N., R. 4 E. County, Craighead Logged by: M. A. Stoyanov 1/76. 0'- 4' Clay, light-tan, with sand 4'- 20' Clay, dark-tan, with sand and gravel 20'- 30' Clay, white, with sand 30'- 32' Clay, white to light-gray, with sand 32'- 50' Sand, gray, very-fine, with white clay 50'- 60' Clay, gray, with sand 60'-118' Clay, gray to light-tan, with sand 18'-137' Clay, dark-gray, with silt 137'-137'4'' Slitstone 137'4''-144' Clay, dark-gray, with silt 144'-162' Clay, dark-gray, with silt and sand 162'-166' Clay, gray, with siltstone, sand and trace of lignite 166'-200' Sand, red to tan, with clay and	Location: SE¼, Sec. 7, T. 13 N., R. 4 E County, Craighead Logged by: D. W. Lumbert 2/76 0'- 40' Sand, large, with gravel, pea-siz 40'- 45' Sand, large 45'- 47' Clay, light gray 47'- 50' Sand, large 50'- 90' Sand, large, w/gravel, pea siz T. D.: 90' Drill Hole No. 65. Elevation 409' Location: SW¼, Sec. 36, T. 14 N., R. 3 E County, Craighead Logged by: D. W. Lumbert 2/76 0'- 20' Sand and gravel, with some clay dark tan 20'- 42' Gravel, pebble-size, with san 42'- 50' Clay, light-gray to tan 50'- 70' Sand, with clay, light-gray 70'-138' Sand 138'-145' Clay, light-gray to tan, with sand 145'-150' Clay, light-gray with sand 145'-150' Clay, light-gray, with sand 150'-160' Clay, light-gray, with sand 190'-200' Clay, red, with sand and sil 190'-200' Clay, red, with sand T. D.: 200' Drill Hole No. 66. Elevation 382'	163.5'-164' Lignite 164'-165' Clay, gray, with sand and siltstone 165'-168' Clay, gray, with silt 168'-170' Clay, gray, with silt 170'-174' Siltstone, with clay, white 174'-180' Clay, gray, lignite trace 180'-185' Recovered: Lost: 5' 0' 180'-181' Clay, light-brown, with silt 181'-183' Lignite 183'-184' Clay, light-brown, 184'-185' Clay, light-brown, with silt 180'-180' Clay, erry lignitic 186'-190' Clay, blue, with silt 190'-200' Recovered: Lost: 10' 190'-197.5' Clay, tan and gray, very sandy, with silt 197.5'-198.5' Clay, blue-green, with lignite 198.5'-200' Clay, blue-green, with lignite 198.5'-200' Clay, blue-green Core interval 10' Recovered: Lost: 10' 0' 200'-202' Clay, tan to gray, with silt
100'-105' Clay, blue-green, with silt 105'-120' Clay, light-gray, with silt 120'-130' Clay, light-gray, with silt 130'-160' Clay, light gray-green, with silt T. D.: 160 Drill Hole No. 61. Elevation 292' Location:SW¼, Sec. 16, T. 13 N., R. 4 E. County, Craighead Logged by: M. A. Stoyanov 1/76. 0'- 4' Clay, light-tan, with sand 4'- 20' Clay, dark-tan, with sand and gravel 20'- 30' Clay, white, with sand 30'- 32' Clay, white to light-gray, with sand 30'- 32' Clay, white to light-gray, with sand 32'- 50' Sand, gray, very-fine, with white clay 50'- 60' Clay, gray, with sand 60'-118' Clay, gray, with sand 60'-118' Clay, gray, with silt 137'-137'4'' Siltstone 137'4''-144' Clay, dark-gray, with silt 144'-162' Clay, dark-gray, with silt and sand 162'-166' Clay, gray, with siltstone, sand and trace of lignite 166'-200' Sand, red to tan, with clay and silt	Location: SE¼, Sec. 7, T. 13 N., R. 4 E County, Craighead Logged by: D. W. Lumbert 2/76 0'- 40' Sand, large, with gravel, pea-siz 40'- 45' Sand, large 45'- 47' Clay, light gray 47'- 50' Sand, large 50'- 90' Sand, large, w/gravel, pea siz T. D.: 90' Drill Hole No. 65. Elevation 409' Location: SW¼, Sec. 36, T. 14 N., R. 3 E County, Craighead Logged by: D. W. Lumbert 2/76 0'- 20' Sand and gravel, with some clay dark tan 20'- 42' Gravel, pebble-size, with san 42'- 50' Clay, light-gray to tan 50'- 70' Sand, with clay, light-gray 70'-138' Sand 138'-145' Clay, light-gray to tan, with sand 138'-145' Clay, light-gray to tan, with sand 145'-150' Clay, red with sand, and very fine silt 150'-160' Clay, red, with sand and sil 190'-200' Clay, red, with sand T. D.: 200' Drill Hole No. 66. Elevation 382' Location: NE¼, Sec. 36, T. 14 N., R. 3 E	163.5'-164' Lignite 164'-165' Clay, gray, with sand and siltstone 165'-168' Clay, gray, with silt 168'-170' Clay, gray, with silt 170'-174' Siltstone, with clay, white 174'-180' Clay, gray, lignite trace 180'-185' Recovered: Lost: 5' 0' 180'-181' Clay, light-brown, with silt 181'-183' Lignite 181'-183' Lignite 183'-184' Clay, light-brown, 184'-185' Clay, light-brown, with silt 180'-200' Clay, blue, with silt 190'-200' Clay, blue, with silt 190'-200' Recovered: Lost: 10' 190'-197.5' Clay, tan and gray, very sandy, with silt 197.5'-198.5' Clay, blue-green, with lignite 198.5'-200' Clay, blue-green, with lignite 198.5'-200' Clay, blue-green Core interval 10' Recovered: Lost: 10' 0' 200'-202' Clay, tan to gray, with silt 202'-203.5' Lignite
100'-105' Clay, blue-green, with silt 105'-120' Clay, light-gray, with silt 120'-130' Clay, light-gray, with silt 130'-160' Clay, light gray-green, with silt 130'-160' Clay, light gray-green, with silt T. D.: 160 Drill Hole No. 61. Elevation 292' Location:SW½, Sec. 16, T. 13 N., R. 4 E. County, Craighead Logged by: M. A. Stoyanov 1/76. 0'- 4' Clay, light-tan, with sand 4'- 20' Clay, light-tan, with sand and gravel 20'- 30' Clay, white, with sand 30'- 32' Clay, white to light-gray, with sand 32'- 50' Sand, gray, very-fine, with white clay 50'- 60' Clay, gray, with sand 60'-118' Clay, gray, with sand 60'-118' Clay, gray to light-tan, with sand 18'-137' Clay, dark-gray, with silt 137'-137'4'' Slitstone 137'4''-144' Clay, dark-gray, with silt 144'-162' Clay, dark-gray, with silt and sand 162'-166' Clay, gray, with siltstone, sand and trace of lignite Sand, red to tan, with clay and silt T. D.: 200'	Location: SE¼, Sec. 7, T. 13 N., R. 4 E County, Craighead Logged by: D. W. Lumbert 2/76 0'- 40' Sand, large, with gravel, pea-siz 40'- 45' Sand, large 45'- 47' Clay, light gray 47'- 50' Sand, large 50'- 90' Sand, large, w/gravel, pea siz T. D.: 90' Drill Hole No. 65. Elevation 409' Location: SW¼, Sec. 36, T. 14 N., R. 3 E County, Craighead Logged by: D. W. Lumbert 2/76 0'- 20' Sand and gravel, with some clay dark tan 20'- 42' Gravel, pebble-size, with sand 42'- 50' Clay, light-gray to tan 50'- 70' Sand, with clay, light-gray 70'-138' Sand 138'-145' Clay, light-gray to tan, with sand 145'-150' Clay, light-gray to tan, with sand 145'-150' Clay, light-gray, with silt 150'-160' Clay, red, with sand, and very fine silt 150'-200' Clay, red, with sand and sil 190'-200' Clay, red, with sand T. D.: 200' Drill Hole No. 66. Elevation 382' Location: NE¼, Sec. 36, T. 14 N., R. 3 E County, Craighead	163.5'-164' Lignite 164'-165' Clay, gray, with sand and siltstone 165'-168' Clay, gray, with silt 168'-170' Clay, gray, with silt 170'-174' Siltstone, with clay, white 174'-180' Clay, gray, lignite trace 180'-185' Recovered: Lost: 5' 0' 180'-181' Clay, light-brown, with silt 181'-183' Lignite 183'-184' Clay, light-brown, 184'-185' Clay, light-brown to blue-green, with silt 190'-200' Clay, blue, with silt 190'-200' Clay, blue, with silt 190'-197.5' Clay, tan and gray, very sandy, with silt 197.5'-198.5' Clay, blue-green, with lignite 198.5'-200' Clay, blue-green 198.5'-200' Clay, blue-green 10' 0' 200'-202' Clay, tan to gray, with silt 10' 0' 200'-202' Clay, tan to gray, with silt 202'-203.5' Lignite 203.5'-204' Clay, gray, with
100'-105' Clay, blue-green, with silt 105'-120' Clay, light-gray, with silt 120'-130' Clay, light-gray, with silt 120'-130' Clay, light blue-gray and white, with silt 130'-160' Clay, light gray-green, with silt T. D.: 160 Drill Hole No. 61. Elevation 292' Location:SW'4, Sec. 16, T. 13 N., R. 4 E. County, Craighead Logged by: M. A. Stoyanov 1/76. 0'- 4' Clay, light-tan, with sand 4'- 20' Clay, dark-tan, with sand and gravel 20'- 30' Clay, white, with sand 30'- 32' Clay, white to light-gray, with sand 32'- 50' Sand, gray, very-fine, with white clay 50'- 60' Clay, gray, with sand 60'-118' Clay, gray to light-tan, with sand 118'-137' Clay, dark-gray, with silt 137'-137'4'' Siltstone 137'4''-144' Clay, dark-gray, with silt 144'-162' Clay, dark-gray, with silt and sand 162'-166' Clay, gray, with siltstone, sand and trace of lignite Sand, red to tan, with clay and silt T. D.: 200' Drill Hole No. 62. Elevation 388' Location: SW'4, Sec. 28, T. 13 N., R. 4 E.	Location: SE¼, Sec. 7, T. 13 N., R. 4 E County, Craighead Logged by: D. W. Lumbert 2/76 0'- 40' Sand, large, with gravel, pea-siz 40'- 45' Sand, large 45'- 47' Clay, light gray 47'- 50' Sand, large 50'- 90' Sand, large, w/gravel, pea siz T. D.: 90' Drill Hole No. 65. Elevation 409' Location: SW¼, Sec. 36, T. 14 N., R. 3 E County, Craighead Logged by: D. W. Lumbert 2/76 0'- 20' Sand and gravel, with some clay dark tan 20'- 42' Gravel, pebble-size, with sand 50'- 70' Sand, with clay, light-gray 70'-138' Sand 138'-145' Clay, light-gray to tan, with sand 145'-150' Clay, light-gray to tan, with sand 145'-150' Clay, red with sand, and very fine silt 150'-160' Clay, light-gray, with silt 160'-190' Clay, red, with sand 190'-200' Clay, red, with sand T. D.: 200' Drill Hole No. 66. Elevation 382' Location: NE¼, Sec. 36, T. 14 N., R. 3 E County, Craighead Logged by: M. A. Stoyanov 2/76	163.5'-164' Lignite 164'-165' Clay, gray, with sand and siltstone 165'-168' Clay, gray, with silt 168'-170' Clay, gray, with silt 170'-174' Siltstone, with clay, white 174'-180' Clay, gray, lignite trace 180'-185' Recovered: Lost: 5' 0' 180'-181' Clay, light-brown, with silt 181'-183' Lignite 183'-184' Clay, light-brown, 184'-185' Clay, light-brown, 184'-185' Clay, light-brown to blue-green, with silt 190'-200' Clay, blue, with silt 190'-200' Recovered: Lost: 10' 0' 190'-197.5' Clay, tan and gray, very sandy, with silt 197.5'-198.5' Clay, blue-green, with lignite 198.5'-200' Clay, blue-green 198.5'-200' Clay, blue-green 10' 0' 200'-202' Clay, tan to gray, with silt 202'-203.5' Lignite 203.5'-204' Clay, gray, with lignite
100'-105' Clay, blue-green, with silt 105'-120' Clay, light-gray, with silt 120'-130' Clay, light-gray, with silt 130'-160' Clay, light gray-green, with silt Clay, light gray-green, with silt T. D.: 160 Drill Hole No. 61. Elevation 292' Location:SW¼, Sec. 16, T. 13 N., R. 4 E. County, Craighead Logged by: M. A. Stoyanov 1/76. 0'- 4' Clay, light-tan, with sand 4'- 20' Clay, dark-tan, with sand and gravel 20'- 30' Clay, white, with sand 30'- 32' Clay, white to light-gray, with sand 32'- 50' Sand, gray, very-fine, with white clay 50'- 60' Clay, gray, with sand 60'-118' Clay, gray, with sand 60'-118' Clay, gray, with silt 137'-137'4'' Slitstone 137'4''-144' Clay, dark-gray, with silt 144'-162' Clay, dark-gray, with silt and sand 162'-166' Clay, gray, with siltstone, sand and trace of lignite 166'-200' Sand, red to tan, with clay and silt T. D.: 200' Drill Hole No. 62. Elevation 388' Location: SW%, Sec. 28, T. 13 N., R. 4 E. County, Craighead	Location: SE¼, Sec. 7, T. 13 N., R. 4 E County, Craighead Logged by: D. W. Lumbert 2/76 0'- 40' Sand, large, with gravel, pea-siz 40'- 45' Sand, large 45'- 47' Clay, light gray 47'- 50' Sand, large 50'- 90' Sand, large, w/gravel, pea siz T. D.: 90' Drill Hole No. 65. Elevation 409' Location: SW¼, Sec. 36, T. 14 N., R. 3 E County, Craighead Logged by: D. W. Lumbert 2/76 0'- 20' Sand and gravel, with some clay dark tan 20'- 42' Gravel, pebble-size, with san 42'- 50' Clay, light-gray to tan 50'- 70' Sand, with clay, light-gray 70'-138' Sand 138'-145' Clay, light-gray to tan, with sand 145'-150' Clay, light-gray to tan, with sand 145'-150' Clay, light-gray, with silt 160'-190' Clay, red, with sand and sil 190'-200' Clay, red, with sand T. D.: 200' Drill Hole No. 66. Elevation 382' Location: NE¼, Sec. 36, T. 14 N., R. 3 E County, Craighead Logged by: M. A. Stoyanov 2/76	163.5'-164' Lignite 164'-165' Clay, gray, with sand and siltstone 165'-168' Clay, gray, with silt 168'-170' Clay, gray, with silt 170'-174' Siltstone, with clay, white 174'-180' Clay, gray, lignite trace 180'-185' Recovered: Lost: 5' 0' 180'-181' Clay, light-brown, with silt 181'-183' Lignite 183'-184' Clay, light-brown, 184'-185' Clay, light-brown to blue-green, with silt 190'-200' Clay, blue, with silt 190'-200' Clay, blue, with silt 190'-200' Clay, blue, with silt 197.5'-198.5' Clay, tan and gray, very sandy, with silt 197.5'-198.5' Clay, blue-green, with lignite 198.5'-200' Clay, tan to gray, with silt 200'-210' Core interval 10' Recovered: Lost: 10' 0' 190'-210' Clay, tan to gray, with silt 200'-202' Clay, tan to gray, with silt 202'-203.5' Lignite 203.5'-204' Clay, gray, with silt 1975'-210' Clay, gray, with silt 204'-205' Clay, gray, with silt 204'-205' Clay, gray, with silt 205'-210' Clay, gray, with silt
100'-105' Clay, blue-green, with silt 105'-120' Clay, light-gray, with silt 120'-130' Clay, light-gray, with silt 120'-130' Clay, light gray-green, with silt 130'-160' Clay, light gray-green, with silt T. D.: 160 Drill Hole No. 61. Elevation 292' Location:SW'4, Sec. 16, T. 13 N., R. 4 E. County, Craighead Logged by: M. A. Stoyanov 1/76. 0'- 4' Clay, light-tan, with sand 4'- 20' Clay, dark-tan, with sand and gravel 20'- 30' Clay, white, with sand 30'- 32' Clay, white to light-gray, with sand 32'- 50' Sand, gray, very-fine, with white clay 50'- 60' Clay, gray, with sand 60'-118' Clay, gray to light-tan, with sand 118'-137' Clay, dark-gray, with silt 137'-137'4'' Siltstone 137'4''-144' Clay, dark-gray, with silt 144'-162' Clay, dark-gray, with silt and sand 162'-166' Clay, gray, with siltstone, sand and trace of lignite Sand, red to tan, with clay and silt T. D.: 200' Drill Hole No. 62. Elevation 388' Location: SW'4, Sec. 28, T. 13 N., R. 4 E. County, Craighead Logged by: M.A. Stoyanov 1/76.	Location: SE¼, Sec. 7, T. 13 N., R. 4 E County, Craighead Logged by: D. W. Lumbert 2/76 0'- 40' Sand, large, with gravel, pea-siz 40'- 45' Sand, large 45'- 47' Clay, light gray 47'- 50' Sand, large 50'- 90' Sand, large, w/gravel, pea siz T. D.: 90' Drill Hole No. 65. Elevation 409' Location: SW¼, Sec. 36, T. 14 N., R. 3 E County, Craighead Logged by: D. W. Lumbert 2/76 0'- 20' Sand and gravel, with some clay dark tan 20'- 42' Gravel, pebble-size, with san 42'- 50' Clay, light-gray to tan 50'- 70' Sand, with clay, light-gray 70'-138' Sand 138'-145' Clay, light-gray to tan, with sand 145'-150' Clay, red with sand, and very fine silt 150'-160' Clay, red, with sand 190'-200' Clay, red, with sand T. D.: 200' Drill Hole No. 66. Elevation 382' Location: NE¼, Sec. 36, T. 14 N., R. 3 E County, Craighead Logged by: M. A. Stoyanov 2/76	163.5'-164' Lignite 164'-165' Clay, gray, with sand and siltstone 165'-168' Clay, gray, with silt 168'-170' Clay, gray, with silt 170'-174' Siltstone, with clay, white 174'-180' Clay, gray, lignite trace 180'-185' Recovered: Lost: 5' 0' 180'-181' Clay, light-brown, with silt 181'-183' Lignite 183'-184' Clay, light-brown, 184'-185' Clay, with silt 190'-200' Clay, blue-green, with lignite 190'-210' Cre interval 10' 190'-197.5' Clay, tan and gray, very sandy, with silt 197.5'-198.5' Clay, blue-green 198.5'-200' Clay, blue-green 10' 200'-202' Clay, tan to gray, with silt 202'-203.5' Clay, gray, with silt 202'-203.5' Clay, gray, with silt 204'-205' Clay, gray, with silt 205'-210' Clay, blue-green 210'-214' Clay, blue-green, with lignite
100'-105' Clay, blue-green, with silt 105'-120' Clay, light-gray, with silt 120'-130' Clay, light-gray, with silt 130'-160' Clay, light gray-green, with silt Clay, light gray-green, with silt T. D.: 160 Drill Hole No. 61. Elevation 292' Location:SW¼, Sec. 16, T. 13 N., R. 4 E. County, Craighead Logged by: M. A. Stoyanov 1/76. 0'- 4' Clay, light-tan, with sand 4'- 20' Clay, dark-tan, with sand and gravel 20'- 30' Clay, white, with sand 30'- 32' Clay, white to light-gray, with sand 32'- 50' Sand, gray, very-fine, with white clay 50'- 60' Clay, gray, with sand 60'-118' Clay, gray, with sand 60'-118' Clay, gray, with silt 137'-137'4'' Slitstone 137'4''-144' Clay, dark-gray, with silt 144'-162' Clay, dark-gray, with silt and sand 162'-166' Clay, gray, with siltstone, sand and trace of lignite 166'-200' Sand, red to tan, with clay and silt T. D.: 200' Drill Hole No. 62. Elevation 388' Location: SW%, Sec. 28, T. 13 N., R. 4 E. County, Craighead	Location: SE¼, Sec. 7, T. 13 N., R. 4 E County, Craighead Logged by: D. W. Lumbert 2/76 0'- 40' Sand, large, with gravel, pea-siz 40'- 45' Sand, large 45'- 47' Clay, light gray 47'- 50' Sand, large 50'- 90' Sand, large, w/gravel, pea siz T. D.: 90' Drill Hole No. 65. Elevation 409' Location: SW¼, Sec. 36, T. 14 N., R. 3 E County, Craighead Logged by: D. W. Lumbert 2/76 0'- 20' Sand and gravel, with some clay dark tan 20'- 42' Gravel, pebble-size, with san 42'- 50' Clay, light-gray to tan 50'- 70' Sand, with clay, light-gray 70'-138' Sand 138'-145' Clay, light-gray to tan, with sand 145'-150' Clay, light-gray to tan, with sand 145'-150' Clay, light-gray, with silt 160'-190' Clay, red, with sand and sil 190'-200' Clay, red, with sand T. D.: 200' Drill Hole No. 66. Elevation 382' Location: NE¼, Sec. 36, T. 14 N., R. 3 E County, Craighead Logged by: M. A. Stoyanov 2/76	163.5'-164' Lignite 164'-165' Clay, gray, with sand and siltstone 165'-168' Clay, gray, with silt 168'-170' Clay, gray, with silt 170'-174' Siltstone, with clay, white 174'-180' Clay, gray, lignite trace 180'-185' Recovered: Lost: 5' 0' 180'-181' Clay, light-brown, with silt 181'-183' Lignite 183'-184' Clay, light-brown, 184'-185' Clay, light-brown to blue-green, with silt 190'-200' Clay, blue, with silt 190'-200' Clay, blue, with silt 190'-200' Clay, blue, with silt 197.5'-198.5' Clay, tan and gray, very sandy, with silt 197.5'-198.5' Clay, blue-green, with lignite 198.5'-200' Clay, tan to gray, with silt 200'-210' Core interval 10' Recovered: Lost: 10' 0' 190'-210' Clay, tan to gray, with silt 200'-202' Clay, tan to gray, with silt 202'-203.5' Lignite 203.5'-204' Clay, gray, with silt 1975'-210' Clay, gray, with silt 204'-205' Clay, gray, with silt 204'-205' Clay, gray, with silt 205'-210' Clay, gray, with silt

Drill Hole No. 69. Elevation 302'	minor gravěl	5.0' Lignite
Location: NW1/4, Sec. 27, T. 14 N., R. 3 E.	159'-165' Clay, light-gray, with sand and	
County, Craighead Logged by: D. W. Lumbert 2/76.	silt 165'-168' Clay, light-gray, with silt an	2.5' Clay, gray to bluish-green
0'- 10' Clay, tan, with medium sand	sand 168'-170' Clay, brown, lignitic with lignit	gray e 60'- 70' Clay, blue-gray, with silt
10'- 12' Clay, light-gray, with médium sand	stringer 170'-176' Clay, gray, with sand and sil	70'- 80' Clay, dark-gray, with silt t 80'- 95' Sand, very-fine, tan
12'- 20' Clay, tan, with pea-size gravel	176'-176.5' Lignite, soft	t 80'- 95' Sand, very-fine, tan 95'-110' Clay, dark-gray
and sand	176.5'-180' Lignité	110'-112' Sand, very fine, light-tan
20'- 26' Clay, tan, with sand 26'- 27' Gravel, pea-size with clay, tan	180'-182' Lignite, soft, with wood fiber 182'-192' Clay, gray, with silt and san	
27'- 32' Clay, tan, with sand	182'-192" Clay, gray, with silt and sand 192'-195' Clay, light-gray, with silt and	d 113'-120' Sand, very-fine, light-tan d 120'-130' Clay, light green
32'- 40' Clay, light-gray, with sand 40'- 72' Sand, with clay, light-gray	sand	130'-140' Clay, light-gray
40'- 72' Sand, with clay, light-gray 72'- 90' Clay, light-gray, with sand	195'-200' Clay, blue-green, with silt	140′-142′ Siltstone 142′-150′ Clay, light-gray
90'-100' Clay, light-tan, with silt	Core interval 10' (175'-185	T. D.: 150'
100'-153' Sand, with clay, light-gray 153'-154.6' Lignite, 6''	Bagged 2'7" for analysis; th	e
154.6"-170'Sand, with clay, tan	rest was lignitic clay.	
170'-180' Sand, with lignite stringers 180'-193' Clay, brown, with silt	Recovered: Lost	
193'-200' Silt, lignitic	10′ 0′	Location: SE¼, Sec. 18, T. 14 N., R. 3 E. County, Craighead
200'-206' Clay, gray, with silt 206'-206.2''Lignite	T. D.: 200'	Logged by: D. W. Lumbert 2/76.
206.2"-210'Clay, gray, with silt	Drill Hole No. 72. Elevation 275'	0'-16' Clay, light tan, with medium
210'-220' Clay, gray, with large sand T. D.: 220'	Location: NE¼, Sec. 31, T. 14 N., R. 3 E	. sand
1. D.: 220	County, Craighead Logged by: D. W. Lumbert 2/76	16'- 26' Clay, light-gray, with medium . sand
Drill Hole No. 70. Elevation 320'		26'- 32' Clay, dark-gray, with sand, very-
Location: NE1/4, Sec. 29, T. 14 N., R. 3 E.	0'- 24' Clay, tan, with medium san 24'- 50' Sand, very-fine, with clay, ta	d fine n 32'-33' Gravel
County, Craighead	50'- 70' Sand, medium, with clay, light	- 33'- 52' Sand, salt and pepper
Logged by: M. A. Stoyanov 2/76.	tan and light-gray 70'- 80' Sand, clean, with clay, ta	52'- 55' Lignite T. D.: 55' - Due to waterline
0'- 6' Clay, brown-tan, with sand and silt	80'- 90' Sand, coarse, with clay, ta	1
6'- 8' Gravel	90'-124' Sand, clean, medium with ver- little clay	Drill Hole No. 74-b. Elevation 265'
8'- 17' Clay, tan, with silt	124'-125' Lignite	Location: SE¼, Sec. 18, T. 14 N., R. 3 E.
	1000	
17'- 20' Clay, tan, with sand 20'- 30' Sand, tan, medium	125'-148' Clay, light-gray, with sand	County, Craighead
17'- 20' Clay, tan, with sand 20'- 30' Sand, tan, medium 30'- 67' Sand, fine, tan	125'-148' Clay, light-gray, with sand 148'-163' Clay, dark-gray, with silt 163'- Siltstone, very hard	County, Craighead Logged by: D. W. Lumbert 2/76.
17'- 20' Clay, tan, with sand 20'- 30' Sand, tan, medium 30'- 67' Sand, fine, tan 67'- 87' Sand, tan, with clay 87'- 90' Clay, red, with sand	125'-148' Clay, light-gray, with sand 148'-163' Clay, dark-gray, with silt	County, Craighead Logged by: D. W. Lumbert 2/76. 0'- 16' Clay, light tan, with sand,
17'- 20' Clay, tan, with sand 20'- 30' Sand, tan, medium 30'- 67' Sand, fine, tan 67'- 87' Sand, tan, with clay 87'- 90' Clay, red, with sand 90'- 96' Sand, red	125'-148' Clay, light-gray, with sand Clay, dark-gray, with silt Siltstone, very hard T. D.: 163'	County, Craighead Logged by: D. W. Lumbert 2/76.
17'- 20' Clay, tan, with sand 20'- 30' Sand, tan, medium 30'- 67' Sand, fine, tan 67'- 87' Sand, tan, with clay 87'- 90' Clay, red, with sand 90'- 96' Sand, red 96'-108' Clay, red, with sand 108'-110' Lignite, with brown lignitic clay	125'-148' Clay, light-gray, with sand Clay, dark-gray, with silt Siltstone, very hard T. D.: 163'	County, Craighead Logged by: D. W. Lumbert 2/76. 0'- 16' Clay, light tan, with sand, medium 16'- 26' Clay, light-gray, with sand, medium
17'- 20' Clay, tan, with sand 20'- 30' Sand, tan, medium 30'- 67' Sand, fine, tan 67'- 87' Sand, tan, with clay 87'- 90' Clay, red, with sand 90'- 96' Sand, red 96'-108' Clay, red, with sand 108'-110' Lignite, with brown lignitic clay 110'-115' Clay, tan, with silt	125'-148' Clay, light-gray, with sand 148'-163' Clay, dark-gray, with silt 163'- Siltstone, very hard T. D.: 163' Drill Hole No. 73. Elevation 275' Location: NE¼, Sec. 19, T. 14 N., R. 3 E County, Creighead	County, Craighead Logged by: D. W. Lumbert 2/76. 0'- 16' Clay, light tan, with sand, medium 16'- 26' Clay, light-gray, with sand, medium 26'- 32' Clay, dark-gray, with sand, very-fine
17'- 20' Clay, tan, with sand 20'- 30' Sand, tan, medium 30'- 67' Sand, fine, tan 67'- 87' Sand, tan, with clay 87'- 90' Clay, red, with sand 90'- 96' Sand, red 96'-108' Clay, red, with sand 108'-110' Lignite, with brown lignitic clay 110'-115' Clay, tan, with silt 115'-117' Lignite 117'-117.5' Clay, brown lignitic	125'-148' Clay, light-gray, with sand 148'-163' Clay, dark-gray, with silt 163'- Siltstone, very hard T. D.: 163' Drill Hole No. 73. Elevation 275' Location: NE¼, Sec. 19, T. 14 N., R. 3 E	County, Craighead Logged by: D. W. Lumbert 2/76. 0'- 16' Clay, light tan, with sand, medium 16'- 26' Clay, light-gray, with sand, medium 26'- 32' Clay, dark-gray, with sand, very-fine 32'- 33' Gravel
17'- 20' Clay, tan, with sand 20'- 30' Sand, tan, medium 30'- 67' Sand, fine, tan 67'- 87' Sand, tan, with clay 87'- 90' Clay, red, with sand 90'- 96' Sand, red 96'-108' Clay, red, with sand 108'-110' Lignite, with brown lignitic clay 110'-115' Clay, tan, with silt 115'-117' Lignite 117'-117.5' Clay, brown, lignitic, with	125'-148' Clay, light-gray, with sand 148'-163' Clay, dark-gray, with silt 163'- Siltstone, very hard T. D.: 163' Drill Hole No. 73. Elevation 275' Location: NE¼, Sec. 19, T. 14 N., R. 3 E County, Creighead Logged by: D. W. Lumbert 2/76 0'- 6' Clay, dark tan, wtih sand	County, Craighead Logged by: D. W. Lumbert 2/76. 0'- 16' Clay, light tan, with sand, medium 16'- 26' Clay, light-gray, with sand, medium 26'- 32' Clay, dark-gray, with sand, very-fine 32'- 33' Gravel 33'- 45' Sand, salt and pepper - H ₂ O, sand
17'- 20' Clay, tan, with sand 20'- 30' Sand, tan, medium 30'- 67' Sand, fine, tan 67'- 87' Sand, tan, with clay 87'- 90' Clay, red, with sand 90'- 96' Sand, red 96'-108' Clay, red, with sand 108'-110' Lignite, with brown lignitic clay 110'-115' Clay, tan, with silt 115'-117' Lignite 117'-117.5' Clay, brown, lignitic 117.5'-119' Clay, brown, lignitic, with lignite stringers	125'-148' Clay, light-gray, with sand 148'-163' Clay, dark-gray, with silt 163'- Siltstone, very hard T. D.: 163' Drill Hole No. 73. Elevation 275' Location: NE%, Sec. 19, T. 14 N., R. 3 E County, Creighead Logged by: D. W. Lumbert 2/76 O'- 6' Clay, dark tan, with sand 6'- 10' Clay, light tan, with sand and	County, Craighead Logged by: D. W. Lumbert 2/76. 0'- 16' Clay, light tan, with sand, medium 16'- 26' Clay, light-gray, with sand, medium 26'- 32' Clay, dark-gray, with sand, very-fine 32'- 33' Gravel 33'- 45' Sand, salt and pepper - H ₂ O, sand 45'- 52' Lignite, with some clay, light-
17'- 20' Clay, tan, with sand 20'- 30' Sand, tan, medium 30'- 67' Sand, fine, tan 67'- 87' Sand, tan, with clay 87'- 90' Clay, red, with sand 90'- 96' Sand, red 96'-108' Clay, red, with sand 108'-110' Clay, tan, with silt 115'-117' Clay, tan, with silt 117'-117.5' Clay, brown, lignitic, with 117'-119' Clay, brown, lignitic, with 119'-124' Clay, tan, with silt 124'-130' Clay, lignitic, with lignites	125'-148' Clay, light-gray, with sand 148'-163' Clay, dark-gray, with silt 163'- Siltstone, very hard T. D.: 163' Drill Hole No. 73. Elevation 275' Location: NE¼, Sec. 19, T. 14 N., R. 3 E County, Creighead Logged by: D. W. Lumbert 2/76 O'- 6' Clay, dark tan, with sand 6'- 10' Clay, light tan, with sand and gravel 10'- 16' Gravel, with sand and clay, tal	County, Craighead Logged by: D. W. Lumbert 2/76. 0'- 16' Clay, light tan, with sand, medium 16'- 26' Clay, light-gray, with sand, medium 26'- 32' Clay, dark-gray, with sand, very-fine 32'- 33' Gravel 33'- 45' Sand, salt and pepper - H ₂ O, sand 45'- 52' Lignite, with some clay, light-gray, at 47'
17'- 20' Clay, tan, with sand 20'- 30' Sand, tan, medium 30'- 67' Sand, fine, tan 67'- 87' Sand, tan, with clay 87'- 90' Clay, red, with sand 90'- 96' Sand, red 96'-108' Clay, red, with sand 108'-110' Lignite, with brown lignitic clay 110'-115' Clay, tan, with silt 115'-117' Lignite 117'-117.5' Clay, brown, lignitic 117.5'-119' Clay, brown, lignitic, with lignite stringers 119'-124' Clay, tan, with silt 124'-130' Clay, lignitic, with lignite stringers	125'.148' Clay, light-gray, with sand 148'-163' Clay, dark-gray, with silt 163'- Siltstone, very hard T. D.: 163' Drill Hole No. 73. Elevation 275' Location: NE%, Sec. 19, T. 14 N., R. 3 E County, Creighead Logged by: D. W. Lumbert 2/76 O'- 6' Clay, dark tan, with sand 6'- 10' Clay, light tan, with sand and gravel 10'- 16' Gravel, with sand and clay, tai 16'- 40' Sand, with gravel and clay, tai	County, Craighead Logged by: D. W. Lumbert 2/76. 0'- 16' Clay, light tan, with sand, medium 16'- 26' Clay, light-gray, with sand, medium 26'- 32' Clay, dark-gray, with sand, very-fine 32'- 33' Gravel 33'- 45' Sand, salt and pepper - H ₂ O, sand 45'- 52' Lignite, with some clay, light-gray, at 47' 152'- 53'- 60' Clay, light-gray, with sand, very-
17'- 20' Clay, tan, with sand 20'- 30' Sand, tan, medium 30'- 67' Sand, fine, tan 67'- 87' Sand, tan, with clay 87'- 90' Clay, red, with sand 90'- 96' Sand, red 96'-108' Clay, red, with sand Lignite, with brown lignitic clay Clay, tan, with silt 115'-117' Lignite 117'-117.5' Clay, brown, lignitic, with lignite stringers 19'-124' Clay, tan, with silt 124'-130' Clay, lignitic, with lignite stringers 130'-145' Sand, tan, medium Lignite, with clay, dark-gray	125'-148' Clay, light-gray, with sand 148'-163' Clay, dark-gray, with silt 163'- Siltstone, very hard T. D.: 163' Drill Hole No. 73. Elevation 275' Location: NE¼, Sec. 19, T. 14 N., R. 3 E County, Creighead Logged by: D. W. Lumbert 2/76 0'- 6' Clay, dark tan, wtih sand 6'- 10' Clay, light tan, with sand and gravel 10'- 16' Gravel, with sand and clay, tal 16'- 40' Sand, with gravel and clay, tal @ 39' Wood fibers	County, Craighead Logged by: D. W. Lumbert 2/76. 0'- 16' Clay, light tan, with sand, medium 16'- 26' Clay, light-gray, with sand, very-fine 26'- 32' Clay, dark-gray, with sand, very-fine 32'- 33' Gravel 33'- 45' Sand, salt and pepper - H ₂ O, sand 45'- 52' Lignite, with some clay, light-gray, at 47' 52'- 53' Lignite 53'- 60' Clay, light-gray, with sand, very-fine
17'- 20' Clay, tan, with sand 20'- 30' Sand, tan, medium 30'- 67' Sand, fine, tan 67'- 87' Sand, tan, with clay 87'- 90' Clay, red, with sand 90'- 96' Sand, red Clay, red, with sand 108'-110' Lignite, with brown lignitic clay 110'-115' Clay, tan, with silt 115'-117' Lignite 117'-117.5' Clay, brown, lignitic, with lignite stringers 119'-124' Clay, tan, with silt 124'-130' Clay, lignitic, with lignite stringers 130'-145' Sand, tan, medium 145'-148' Lignite, with clay, dark-gray 148'-150' Clay, lignitic, brown	125'-148' Clay, light-gray, with sand 148'-163' Clay, dark-gray, with silt 163'- Siltstone, very hard T. D.: 163' Drill Hole No. 73. Elevation 275' Location: NE½, Sec. 19, T. 14 N., R. 3 E County, Creighead Logged by: D. W. Lumbert 2/76 0'- 6' Clay, dark tan, with sand 6'- 10' Clay, light tan, with sand and gravel 10'- 16' Gravel, with sand and clay, tal 6'- 40' Sand, with gravel and clay, tal 93' Wood fibers 40'- 50' Cored interval 10' Recovered: Lost:	County, Craighead Logged by: D. W. Lumbert 2/76. 0'- 16' Clay, light tan, with sand, medium 16'- 26' Clay, light-gray, with sand, medium 26'- 32' Clay, dark-gray, with sand, very-fine 32'- 33' Gravel 33'- 45' Sand, salt and pepper - H ₂ O, sand 45'- 52' Lignite, with some clay, light-gray, at 47' 52'- 53'- 60' Clay, light-gray, with sand, very-fine 60'- 70' Clay, blue-green, with silt 70'- 74' Clay, dark-gray, with sand
17'- 20' Clay, tan, with sand 20'- 30' Sand, tan, medium 30'- 67' Sand, fine, tan 67'- 87' Sand, fine, tan 67'- 87' Clay, red, with sand 90'- 96' Sand, red 96'-108' Clay, red, with sand 108'-110' Clay, tan, with slit 115'-117' Lignite 117'-117.5' Clay, brown, lignitic clay 117'-117.5' Clay, brown, lignitic, with lignite stringers 19'-124' Clay, tan, with slit 124'-130' Clay, lignitic, with lignite stringers 130'-145' Sand, tan, medium 145'-148' Lignite, with clay, dark-gray 148'-150' Clay, lignitic, brown 150'-198' Clay, lignitic, brown 150'-198' Clay, lignitic, brown 150'-198' Lignite, with clay, dark-brown 198'-200' Lignite, with clay, dark-brown	125'-148' Clay, light-gray, with sand 148'-163' Clay, dark-gray, with silt 163'- Siltstone, very hard T. D.: 163' Drill Hole No. 73. Elevation 275' Location: NE¼, Sec. 19, T. 14 N., R. 3 E County, Craighead Logged by: D. W. Lumbert 2/76 0'- 6' Clay, dark tan, with sand 6'- 10' Clay, light tan, with sand and gravel 10'- 16' Gravel, with sand and clay, tan 16'- 40' Sand, with gravel and clay, tan 939' Wood fibers 40'- 50' Cored interval-10' Recovered: Lost: 8' 2'	County, Craighead Logged by: D. W. Lumbert 2/76. 0'- 16' Clay, light tan, with sand, medium 16'- 26' Clay, light-gray, with sand, medium 26'- 32' Clay, dark-gray, with sand, very-fine 32'- 33' Gravel 33'- 45' Sand, salt and pepper - H ₂ O, sand 45'- 52' Lignite, with some clay, light-gray, at 47' Lignite 53'- 60' Clay, light-gray, with sand, very-fine 60'- 70' Clay, blue-green, with silt 70'- 74' Clay, dark-gray, with sand 74'- 80' Clay, blue-green, with silt
17'- 20' Clay, tan, with sand 20'- 30' Sand, tan, medium 30'- 67' Sand, fine, tan 67'- 87' Sand, tan, with clay 87'- 90' Clay, red, with sand 90'- 96' Sand, red Clay, red, with sand 108'-110' Lignite, with brown lignitic clay 110'-115' Clay, tan, with silt 115'-117' Clay, brown, lignitic, with lignite stringers 119'-124' Clay, tan, with silt 124'-130' Clay, tan, with silt 124'-130' Clay, lignitic, with lignite stringers 130'-145' Sand, tan, medium 145'-148' Lignite, with clay, dark-gray 150'-198' Clay, very-silty, with sand 198'-200' Clay, tan, with silt and sand 190'-211' Clay, tan, with silt and sand	125'-148' Clay, light-gray, with sand 148'-163' Clay, dark-gray, with silt 163'- Siltstone, very hard T. D.: 163' Drill Hole No. 73. Elevation 275' Location: NE¼, Sec. 19, T. 14 N., R. 3 E County, Creighead Logged by: D. W. Lumbert 2/76 O'- 6' Clay, dark tan, with sand 6'- 10' Clay, light tan, with sand and gravel 10'- 16' Gravel, with sand and clay, tan @ 39' Wood fibers 40'- 50' Cored interval-10' Recovered: Lost: 8' 2' 2.0' Lost 5.0' Lighted	County, Craighead Logged by: D. W. Lumbert 2/76. 0'- 16' Clay, light tan, with sand, medium 16'- 26' Clay, light-gray, with sand, medium 26'- 32' Clay, dark-gray, with sand, very-fine 32'- 33' Gravel 33'- 45' Sand, salt and pepper - H ₂ O, sand 45'- 52' Lignite, with some clay, light-gray, at 47' 52'- 53'- 60' Clay, light-gray, with sand, very-fine 60'- 70' Clay, blue-green, with silt 70'- 74' Clay, dark-gray, with sand 74'- 80' Clay, blue-green, with silt 80'- 95' Clay, tan, with sand 95'- 96' Siltstone
17'- 20' Clay, tan, with sand 20'- 30' Sand, tan, medium 30'- 67' Sand, fine, tan 67'- 87' Sand, fine, tan 67'- 87' Clay, red, with sand 90'- 96' Sand, red 96'-108' Clay, red, with sand 108'-110' Clay, tan, with slit 115'-117' Lignite 117'-117.5' Clay, brown, lignitic clay 117'-117.5' Clay, brown, lignitic, with lignite stringers 19'-124' Clay, tan, with slit 124'-130' Clay, lignitic, with lignite stringers 130'-145' Sand, tan, medium 145'-148' Lignite, with clay, dark-gray 148'-150' Clay, lignitic, brown 150'-198' Clay, lignitic, brown 150'-198' Clay, lignitic, brown 150'-198' Lignite, with clay, dark-brown 198'-200' Lignite, with clay, dark-brown	125'.148' Clay, light-gray, with sand 148'-163' Clay, dark-gray, with silt 163'- Siltstone, very hard T. D.: 163' Drill Hole No. 73. Elevation 275' Location: NE¼, Sec. 19, T. 14 N., R. 3 E County, Creighead Logged by: D. W. Lumbert 2/76 O'. 6' Clay, dark tan, with sand 6'- 10' Clay, light tan, with sand and gravel 10'- 16' Gravel, with sand and clay, tan @ 39' Wood fibers 40'- 50' Sand, with gravel and clay, tan @ 39' Wood fibers 40'- 50' Cored interval 10' Recovered: Lost: 8' 2' 2.0' Lost 5.0' Lignité 3.0' Clay, dark-gray to bluish	County, Craighead Logged by: D. W. Lumbert 2/76. 0'- 16' Clay, light tan, with sand, medium 16'- 26' Clay, light-gray, with sand, medium 26'- 32' Clay, dark-gray, with sand, very-fine 32'- 33' Gravel 33'- 45' Sand, salt and pepper - H ₂ O, sand 45'- 52' Lignite, with some clay, light-gray, at 47' Lignite, with some clay, light-gray, at 47' 52'- 53' Lignite 53'- 60' Clay, light-gray, with sand, very-fine 60'- 70' Clay, blue-green, with silt 70'- 74' Clay, dark-gray, with sand 74'- 80' Clay, blue-green, with silt 80'- 95' Glay, tan, with sand 95'- 96'- 112' Clay, dark-gray, with silt
17'- 20' Clay, tan, with sand 20'- 30' Sand, tan, medium 30'- 67' Sand, fine, tan 67'- 87' Sand, tan, with clay 87'- 90' Clay, red, with sand 90'- 96' Sand, red Clay, red, with sand 108'-110' Lignite, with brown lignitic clay 110'-115' Clay, tan, with silt 115'-117' Lignite 117'-117.5' Clay, brown, lignitic, with lignite stringers 119'-124' Clay, tan, with silt 124'-130' Clay, lignitic, with lignite stringers 130'-145' Sand, tan, medium Lignite, with clay, dark-gray 148'-150' Clay, lignitic, brown 150'-198' Clay, lignitic, brown 150'-201' Clay, tan, with silt and sand T. D.: 211'	125'-148' Clay, light-gray, with sand 148'-163' Clay, dark-gray, with silt 163'- Siltstone, very hard T. D.: 163' Drill Hole No. 73. Elevation 275' Location: NE¼, Sec. 19, T. 14 N., R. 3 E County, Creighead Logged by: D. W. Lumbert 2/76 0'- 6' Clay, dark tan, with sand 6'- 10' Clay, light tan, with sand and gravel 10'- 16' Gravel, with sand and clay, tal 6'- 40' Sand, with gravel and clay, tal @ 39' Wood fibers 40'- 50' Cored interval 10' Recovered: Lost: 8' 2' 2.0' Lost 5.0' Lignite 3.0' Clay, dark-gray to bluish green	County, Craighead Logged by: D. W. Lumbert 2/76. 0'- 16' Clay, light tan, with sand, medium 16'- 26' Clay, light-gray, with sand, very-fine 26'- 32' Clay, dark-gray, with sand, very-fine 32'- 33' Gravel 33'- 45' Sand, salt and pepper - H ₂ O, sand 45'- 52' Lignite, with some clay, light-gray, at 47' Lignite 53'- 60' Clay, light-gray, with sand, very-fine 60'- 70' Clay, blue-green, with silt 70'- 74' Clay, dark-gray, with sand 74'- 80' Clay, blue-green, with silt 80'- 95' Clay, tan, with sand 95'- 96' Siltstone 96'-112' Clay, dark-gray, with silt 112'-113' Siltstone
17'- 20' Clay, tan, with sand 20'- 30' Sand, tan, medium 30'- 67' Sand, fine, tan 67'- 87' Sand, tan, with clay 87'- 90' Clay, red, with sand 90'- 96' Sand, red 96'-108' Clay, red, with sand 108'-110' Lignite, with brown lignitic clay 110'-115' Clay, tan, with silt 115'-117' Lignite 117'-117.5' Clay, brown, lignitic, with lignite stringers 119'-124' Clay, lignitic, with silt 124'-130' Clay, lignitic, with lignite stringers 130'-145' Sand, tan, medium Lignite, with clay, dark-gray 148'-150' Clay, lignitic, brown 150'-198' Clay, very-silty, with sand 198'-200' Lignite, with clay, dark-brown Clay, tan, with silt and sand T. D.: 211' Drill Hole No. 71. Elevation 310'	125'.148' Clay, light-gray, with sand 148'-163' Clay, dark-gray, with silt 163'- Siltstone, very hard T. D.: 163' Drill Hole No. 73. Elevation 275' Location: NE½, Sec. 19, T. 14 N., R. 3 E County, Creighead Logged by: D. W. Lumbert 2/76 O'- 6' Clay, dark tan, with sand and clay, tan 16'- 10' Clay, light tan, with sand and gravel 10'- 16' Gravel, with sand and clay, tan @ 39' Wood fibers 40'- 50' Cored interval 10' Recovered: Lost: 8' 2' 2.0' Lost 5.0' Lignite 3.0' Clay, dark-gray to bluish green 50'- 71' Clay, blue-gray, with clay, ligh gray with silt	County, Craighead Logged by: D. W. Lumbert 2/76. 0'- 16' Clay, light tan, with sand, medium 16'- 26' Clay, light-gray, with sand, medium 26'- 32' Clay, dark-gray, with sand, very-fine 32'- 33' Gravel 33'- 45' Sand, salt and pepper - H ₂ O, sand 45'- 52' Lignite, with some clay, light-gray, at 47' 152'- 53' Lignite 60'- 70' Clay, light-gray, with sand, very-fine 60'- 70' Clay, blue-green, with silt 70'- 74' Clay, dark-gray, with sand 74'- 80' Clay, blue-green, with silt 80'- 95' Siltstone 96'-112' Clay, dark-gray, with silt 112'-113' Siltstone 113'-126' Sand, with clay, light tan 126'-130' Clay, light-gray, with sand
17'- 20' Clay, tan, with sand 20'- 30' Sand, tan, medium 30'- 67' Sand, tan, medium 67'- 87' Sand, tan, with clay 87'- 90' Clay, red, with sand 90'- 96' Sand, red Clay, red, with sand 108'-110' Lignite, with brown lignitic clay 110'-115' Clay, tan, with silt 115'-117' Clay, brown, lignitic 117.5'-119' Clay, brown, lignitic, with lignite stringers 119'-124' Clay, tan, with silt 124'-130' Clay, tan, with silt 124'-130' Clay, lignitic, with lignite stringers 130'-145' Sand, tan, medium 145'-148' Lignite, with clay, dark-gray 150'-198' Clay, very-silty, with sand 198'-200' Clay, lignitic, brown 200'-211' Clay, tan, with silt and sand T. D.: 211' Drill Hole No. 71. Elevation 310' Location: SE'4, Sec. 19, T. 14 N., R. 3 E. County, Craighead	125'-148' Clay, light-gray, with sand 148'-163' Clay, dark-gray, with silt 163'- Siltstone, very hard T. D.: 163' Drill Hole No. 73. Elevation 275' Location: NE¼, Sec. 19, T. 14 N., R. 3 E County, Craighead Logged by: D. W. Lumbert 2/76 0'- 6' Clay, dark tan, with sand 6'- 10' Clay, light tan, with sand and gravel 10'- 16' Gravel, with sand and clay, tan 16'- 40' Sand, with gravel and clay, tan 93' Wood fibers 40'- 50' Cored interval 10' Recovered: Lost: 8' 2' 2.0' Lost 5.0' Lignite 3.0' Clay, dark-gray to bluish green 50'- 71' Clay, blue-gray, with clay, ligh gray with silt 71'-102' Sand, salt and pepper	County, Craighead Logged by: D. W. Lumbert 2/76. 0'- 16' Clay, light tan, with sand, medium 16'- 26' Clay, light-gray, with sand, very-fine 26'- 32' Clay, dark-gray, with sand, very-fine 32'- 33' Gravel 33'- 45' Sand, salt and pepper - H ₂ O, sand 45'- 52' Lignite, with some clay, light-gray, at 47' Lignite 53'- 60' Clay, light-gray, with sand, very-fine 60'- 70' Clay, blue-green, with silt 70'- 74' Clay, dark-gray, with sand 74'- 80' Clay, blue-green, with silt 80'- 95' Clay, tan, with sand 95'- 96' Siltstone 96'-112' Clay, dark-gray, with silt 112'-113' Siltstone 113'-126' Sand, with clay, light tan 126'-130' Clay, light-gray, with sand 130'-142' Clay, light-gray, with sand
17'- 20' Clay, tan, with sand 20'- 30' Sand, tan, medium 30'- 67' Sand, tan, medium 67'- 87' Sand, tan, with clay 67'- 90' Sand, red 96'-108' Clay, red, with sand 108'-110' Lignite, with brown lignitic clay 110'-115' Clay, tan, with silt 115'-117' Lignite 117'-117.5' Clay, brown, lignitic, with lignite stringers 119'-124' Clay, tan, with silt 124'-130' Clay, lignitic, with lignite stringers 30'-145' Sand, tan, medium 145'-148' Lignite, with clay, dark-gray 148'-150' Clay, lignitic, brown 150'-198' Clay, lignitic, brown 150'-198' Clay, lignitic, brown 150'-198' Clay, lignitic, with clay, dark-brown 200'-211' Clay, tan, with silt and sand T. D.: 211' Drill Hole No. 71. Elevation 310' Location: SE'4, Sec. 19, T. 14 N., B. 3 E.	125'.148' Clay, light-gray, with sand 148'-163' Clay, dark-gray, with silt 163'- Siltstone, very hard T. D.: 163' Drill Hole No. 73. Elevation 275' Location: NE¼, Sec. 19, T. 14 N., R. 3 E County, Creighead Logged by: D. W. Lumbert 2/76 0'- 6' Clay, dark tan, with sand 6'- 10' Clay, light tan, with sand and gravel 10'- 16' Gravel, with sand and clay, tan @ 39' Wood fibers 40'- 50' Sand, with gravel and clay, tan @ 39' Wood fibers 40'- 50' Cored interval 10' Recovered: Lost: 8' 2' 2.0' Lost 5.0' Lignite 3.0' Clay, dark-gray to bluish green 50'- 71' Clay, blue-gray, with clay, ligh gray with silt 71'-102' Sand, salt and pepper Sand, very fine 150'- Clay, blue-green, with silt	County, Craighead Logged by: D. W. Lumbert 2/76. 0'- 16' Clay, light tan, with sand, medium 16'- 26' Clay, light-gray, with sand, medium 26'- 32' Clay, dark-gray, with sand, very-fine 32'- 33' Gravel 33'- 45' Sand, salt and pepper - H ₂ O, sand 45'- 52' Lignite, with some clay, light-gray, at 47' Lignite 53'- 60' Clay, light-gray, with sand, very-fine 60'- 70' Clay, blue-green, with silt 70'- 74' Clay, dark-gray, with sand 74'- 80' Clay, blue-green, with silt 80'- 95' Siltstone 96'-112' Clay, dark-gray, with sand 95'- 96' Siltstone 113'-126' Sand, with clay, light tan 126'-130' Clay, light-gray, with sand 130'-142' Sand, with clay, light tan 126'-130' Clay, light-gray, with silt 142'-142½' Siltstone 142½'-150' Clay, gray, with silt
17'- 20' Clay, tan, with sand 20'- 30' Sand, tan, medium 30'- 67' Sand, tan, medium 30'- 67' Sand, tan, with clay 87'- 90' Sand, tan, with clay 87'- 90' Clay, red, with sand 90'- 96' Sand, red 96'-108' Clay, red, with sand 108'-110' Lignite, with brown lignitic clay 110'-115' Clay, brown, lignitic 117.5'-117' Lignite 117'-117.5' Clay, brown, lignitic, with lignite stringers 119'-124' Clay, tan, with silt 124'-130' Clay, tan, with silt 124'-130' Clay, lignitic, with lignite stringers 130'-145' Sand, tan, medium 145'-148' Lignite, with clay, dark-gray 148'-150' Clay, very-silty, with sand 198'-200' Lignite, with clay, dark-brown 200'-211' Clay, tan, with silt and sand T. D.: 211' Drill Hole No. 71. Elevation 310' Location: SE'4, Sec. 19, T. 14 N., R. 3 E. County, Craighead Logged by: M. A. Stoyanov 2/76.	125'-148' Clay, light-gray, with sand 148'-163' Clay, dark-gray, with silt 163'- Siltstone, very hard T. D.: 163' Drill Hole No. 73. Elevation 275' Location: NE½, Sec. 19, T. 14 N., R. 3 E County, Creighead Logged by: D. W. Lumbert 2/76 O'- 6' Clay, dark tan, with sand 6'- 10' Clay, light tan, with sand and gravel 10'- 16' Gravel, with sand and clay, tan (a) 39' Wood fibers 40'- 50' Sand, with gravel and clay, tan (a) 39' Wood fibers 40'- 50' Cored interval 10' Recovered: Lost: 8' 2' 2.0' Lost 5.0' Lignite 3.0' Clay, dark-gray to bluish green 50'- 71' Clay, blue-gray, with clay, ligh gray with silt 71'-102' Sand, very fine Clay, blue-green, with silt T. D.: 150'	County, Craighead Logged by: D. W. Lumbert 2/76. 0'- 16' Clay, light tan, with sand, medium 16'- 26' Clay, light-gray, with sand, medium 26'- 32' Clay, dark-gray, with sand, very-fine 32'- 33' Gravel 33'- 45' Sand, salt and pepper - H ₂ O, sand 45'- 52' Lignite, with some clay, light-gray, at 47' Lignite, with some clay, light-gray, at 47' 52'- 53' Lignite 60'- 70' Clay, light-gray, with sand, very-fine 60'- 70' Clay, blue-green, with silt 70'- 74' Clay, dark-gray, with sand 74'- 80' Clay, tan, with sand 95'- 96' Siltstone 96'-112' Clay, dark-gray, with silt 112'-113' Siltstone 113'-126' Sand, with clay, light tan 126'-130' Clay, light-gray, with sand 130'-142' Clay, light-gray, with silt 142'-142'/ Siltstone 142'/-150' Clay, gray, with silt 150'-160' Clay, gray, with silt
17'- 20' Clay, tan, with sand 20'- 30' Sand, tan, medium 30'- 67' Sand, fine, tan 67'- 87' Sand, tan, with clay 87'- 90' Clay, red, with sand 90'- 96' Sand, red 96'-108' Clay, red, with sand 108'-110' Lignite, with brown lignitic clay 110'-115' Clay, tan, with silt 115'-117' Lignite 117'-117.5' Clay, brown, lignitic 117.5'-119' Clay, brown, lignitic, with lignite stringers 119'-124' Clay, tan, with silt 124'-130' Clay, lignitic, with lignite stringers 130'-145' Sand, tan, medium 145'-148' Lignite, with clay, dark-gray 148'-150' Clay, lignitic, brown 150'-198' Clay, lignitic, brown 150'-198' Clay, lignitic, brown 150'-198' Clay, lignitic, brown 200'-211' Clay, tan, with silt and sand T. D.: 211' Drill Hole No. 71. Elevation 310' Location: SE'/s, Sec. 19, T. 14 N., R. 3 E. County, Craighead Logged by: M. A. Stoyanov 2/76.	125'.148' Clay, light-gray, with sand 148'-163' Clay, dark-gray, with silt 163'- Siltstone, very hard T. D.: 163' Drill Hole No. 73. Elevation 275' Location: NE½, Sec. 19, T. 14 N., R. 3 E County, Creighead Logged by: D. W. Lumbert 2/76 O'- 6' Clay, dark tan, with sand and clay, tan 16'- 10' Clay, light tan, with sand and gravel 10'- 16' Gravel, with sand and clay, tan @ 39' Wood fibers 40'- 50' Cored interval 10' Recovered: Lost: 8' 2' 2.0' Lost 5.0' Lignite 3.0' Clay, dark-gray to bluish green 50'- 71' Clay, blue-gray, with clay, ligh gray with silt 71'-102' Sand, salt and pepper Sand, very fine 150'- Clay, blue-green, with silt T. D.: 150' Drill Hole No. 74. Elevation 265'	County, Craighead Logged by: D. W. Lumbert 2/76. 0'- 16' Clay, light tan, with sand, medium 16'- 26' Clay, light-gray, with sand, medium 26'- 32' Clay, dark-gray, with sand, very-fine 32'- 33' Gravel 33'- 45' Sand, salt and pepper - H ₂ O, sand 45'- 52' Lignite, with some clay, light-gray, at 47' Lignite, with some clay, light-gray, light-gray, with sand, very-fine 60'- 70' Clay, blue-green, with silt 70'- 74' Clay, dark-gray, with sand 74'- 80' Clay, blue-green, with silt 80'- 95' Siltstone 96'-112' Clay, dark-gray, with sand 112'-113' Siltstone 113'-126' Sand, with clay, light tan 126'-130' Clay, light-gray, with silt 142'-142'/ Siltstone 142'/-150' Clay, light-gray, with silt 142'-142'/-150' Clay, gray, with silt 150'-160' Clay, gray, with sand 160'-170' Clay, dark-gray, with sand 170'-174' Light-gray, with sand 170'-174' Light-gray, with sand 170'-174' Light-gray, with sand 170'-174' Light-gray, with sand
17'- 20' Clay, tan, with sand 20'- 30' Sand, tan, medium 30'- 67' Sand, tan, medium 30'- 67' Sand, tan, with clay 87'- 90' Clay, red, with sand 90'- 96' Sand, red 96'-108' Clay, red, with sand 108'-110' Lignite, with brown lignitic clay 110'-115' Clay, brown, lignitic 117.5'-117' Lignite 117'-117.5' Clay, brown, lignitic, with lignite stringers 119'-124' Clay, tan, with silt 124'-130' Clay, lignitic, with lignite stringers 130'-145' Sand, tan, medium 145'-148' Lignite, with clay, dark-gray Clay, lignitic, brown 150'-198' Clay, very-silty, with sand 198'-200' Lignite, with clay, dark-brown 200'-211' Clay, tan, with silt and sand T. D.: 211' Drill Hole No. 71. Elevation 310' Location: SE'4, Sec. 19, T. 14 N., R. 3 E. County, Craighead Logged by: M. A. Stoyanov 2/76. O'- 40' Clay, tan, with silt and trace gravel Clay, light-gray, with silt and sand	125'-148' Clay, light-gray, with sand 148'-163' Clay, dark-gray, with silt 163'- Siltstone, very hard T. D.: 163' Drill Hole No. 73. Elevation 275' Location: NE¼, Sec. 19, T. 14 N., R. 3 E County, Creighead Logged by: D. W. Lumbert 2/76 0'- 6' Clay, dark tan, with sand and gravel 10'- 16' Gravel, with sand and clay, tan 16'- 40' Sand, with gravel and clay, tan @ 39' Wood fibers 40'- 50' Cored interval-10' Recovered: Lost: 8' 2' 2.0' Lost 5.0' Lignite 3.0' Clay, dark-gray to bluish green 50'- 71' Clay, blue-gray, with clay, ligh gray with silt 71'-102' Sand, salt and pepper 102'-150' Sand, very fine 150'- Clay, blue-green, with silt T. D.: 150' Drill Hole No. 74. Elevation 265' Location: SE¾, Sec. 18, T. 14 N., R. 3 E	County, Craighead Logged by: D. W. Lumbert 2/76. 0'- 16' Clay, light tan, with sand, medium 16'- 26' Clay, light-gray, with sand, medium 26'- 32' Clay, dark-gray, with sand, very-fine 32'- 33' Gravel 33'- 45' Sand, salt and pepper - H ₂ O, sand 45'- 52' Lignite, with some clay, light-gray, at 47' Lignite, with some clay, light-gray, at 47' 52'- 53' Lignite 60'- 70' Clay, light-gray, with sand, very-fine 60'- 70' Clay, blue-green, with silt 70'- 74' Clay, dark-gray, with sand 74'- 80' Clay, blue-green, with silt 80'- 95' Siltstone 96'-112' Clay, dark-gray, with silt 112'-113' Siltstone 113'-126' Sand, with clay, light tan 126'-130' Clay, light-gray, with sand 130'-142' Clay, light-gray, with silt 142'-142'/ Siltstone 142'/-150' Clay, gray, with silt 150'-160' Clay, gray, with silt 150'-170' Clay, dark-gray, with sand 170'-174' Lignite, with clay, dark-gray 174'-176' Clay, light-gray
17'- 20' Clay, tan, with sand 20'- 30' Sand, tan, medium 30'- 67' Sand, tine, tan 67'- 87' Sand, tan, with clay 87'- 90' Clay, red, with sand 90'- 96' Sand, red 96'-108' Clay, red, with sand 108'-110' Lignite, with brown lignitic clay 110'-115' Clay, ten, with silt 115'-117' Lignite 117'-117.5' Clay, brown, lignitic, with lignite stringers 119'-124' Clay, ten, with silt 124'-130' Clay, lignitic, with lignite stringers 130'-145' Sand, tan, medium 145'-148' Lignite, with clay, dark-gray 148'-150' Clay, lignitic, brown 150'-198' Clay, lignitic, brown 150'-198' Clay, lignitic, with sand 198'-200' Lignite, with clay, dark-brown 200'-211' Clay, tan, with silt and sand T. D.: 211' Drill Hole No. 71. Elevation 310' Location: SE'/2, Sec. 19, T. 14 N., R. 3 E. County, Craighead Logged by: M. A. Stoyanov 2/76. 0'- 40' Clay, tan, with silt and trace gravel 40'- 48' Clay, light-gray, with silt and sand 48'- 54' Clay, mottled, with silt and sand	125'.148' Clay, light-gray, with sand 148'-163' Clay, dark-gray, with silt 163'- Siltstone, very hard T. D.: 163' Drill Hole No. 73. Elevation 275' Location: NE½, Sec. 19, T. 14 N., R. 3 E County, Creighead Logged by: D. W. Lumbert 2/76 O'- 6' Clay, dark tan, with sand and clay, tan 16'- 10' Clay, light tan, with sand and gravel 10'- 16' Gravel, with sand and clay, tan @ 39' Wood fibers 40'- 50' Cored interval 10' Recovered: Lost: 8' 2' 2.0' Lost 5.0' Lignite 3.0' Clay, dark-gray to bluish green 50'- 71' Clay, blue-gray, with clay, ligh gray with silt 71'-102' Sand, salt and pepper Sand, very fine 150'- Clay, blue-green, with silt T. D.: 150' Drill Hole No. 74. Elevation 265'	County, Craighead Logged by: D. W. Lumbert 2/76. 0'- 16' Clay, light tan, with sand, medium 16'- 26' Clay, light-gray, with sand, medium 26'- 32' Clay, dark-gray, with sand, very-fine 32'- 33' Gravel 33'- 45' Sand, salt and pepper - H ₂ O, sand 45'- 52' Lignite, with some clay, light-gray, at 47' 52'- 53' Lignite 60'- 70' Clay, light-gray, with sand, very-fine 60'- 70' Clay, blue-green, with silt 70'- 74' Clay, blue-green, with silt 70'- 74' Clay, blue-green, with silt 80'- 95' Clay, tan, with sand 95'- 96' Siltstone 96'-112' Clay, dark-gray, with sand 113'-126' Sand, with clay, light tan 113'-126' Sand, with clay, light tan 130'-142' Clay, light-gray, with sand 130'-142' Clay, light-gray, with sand 130'-142' Siltstone 142'-150' Clay, gray, with silt 150'-160' Clay, dark-gray, with sand 160'-170' Clay, dark-gray, with sand 170'-174' Lighite, with clay, dark-gray 174'-176' Clay, light-gray 176'-186' Clay, light-gray, with sand
17'- 20' Clay, tan, with sand 20'- 30' Sand, tan, medium 30'- 67' Sand, tan, medium 67'- 87' Sand, tan, with clay 87'- 90' Clay, red, with sand 90'- 96' Sand, red 96'-108' Clay, red, with sand 108'-110' Lignite, with brown lignitic clay 110'-115' Clay, tan, with silt 115'-117' Lignite 117'-117.5' Clay, brown, lignitic, with lignite stringers 119'-124' Clay, tan, with silt 124'-130' Clay, lignitic, with lignite stringers 300'-145' Sand, tan, medium 145'-148' Lignite, with clay, dark-gray 148'-150' Clay, lignitic, brown 150'-198' Clay, very-silty, with sand 198'-200' Lignite, with clay, dark-brown 200'-211' Clay, tan, with silt and sand T. D.: 211' Drill Hole No. 71. Elevation 310' Location: SE'4, Sec. 19, T. 14 N., R. 3 E. County, Craighead Logged by: M. A. Stoyanov 2/76. 0'- 40' Clay, tan, with silt and trace gravel 40'- 48' Clay, light-gray, with silt and sand 48'- 54' Clay, mottled, with clay, and sand 54'- 58' Gravel, with clay, and sand 54'- 58' Gravel, with clay, and sand	125'.148' Clay, light-gray, with sand 148'-163' Clay, dark-gray, with silt 163'- Siltstone, very hard T. D.: 163' Drill Hole No. 73. Elevation 275' Location: NE¼, Sec. 19, T. 14 N., R. 3 E County, Creighead Logged by: D. W. Lumbert 2/76 O'- 6' Clay, dark tan, with sand and gravel 10'- 16' Gravel, with sand and clay, tan 16'- 40' Sand, with gravel and clay, tan @ 39' Wood fibers 40'- 50' Cored interval 10' Recovered: Lost: 8' 2' 2.0' Lost 5.0' Lignite 3.0' Clay, dark-gray to bluish green 50'- 71' Clay, blue-gray, with clay, ligh gray with silt 71'-102' Sand, salt and pepper 150'- Clay, blue-green, with silt T. D.: 150' Drill Hole No. 74. Elevation 265' Location: SE¼, Sec. 18, T. 14 N., R. 3 E County, Craighead Logged by: M. A. Stoyanov 2/76.	County, Craighead Logged by: D. W. Lumbert 2/76. 0'- 16' Clay, light tan, with sand, medium 16'- 26' Clay, light-gray, with sand, medium 26'- 32' Clay, dark-gray, with sand, very-fine 32'- 33' Gravel 33'- 45' Sand, salt and pepper - H ₂ O, sand 45'- 52' Lignite, with some clay, light-gray, at 47' 152'- 53' Lignite 60'- 70' Clay, light-gray, with sand, very-fine 60'- 70' Clay, blue-green, with silt 70'- 74' Clay, dark-gray, with sand 74'- 80' Clay, blue-green, with silt 80'- 95' Siltstone 96'-112' Clay, dark-gray, with sand 113'-126' Sand, with clay, light tan 126'-130' Clay, light-gray, with sand 130'-142' Clay, light-gray, with sand 130'-142' Siltstone 142'½'-150' Clay, light-gray, with silt 150'-160' Clay, light-gray, with sand 160'-170' Clay, dark-gray, with sand 160'-170' Clay, dark-gray, with sand 170'-174' Lighite, with clay, dark-gray 176'-186' Clay, blue-green, with sand 186'-197' Clay, light-gray, with sand 186'-197' Clay, light-gray, with sand Lignite, with clay, dark-gray to
17'- 20' Clay, tan, with sand 20'- 30' Sand, tan, medium 30'- 67' Sand, tine, tan 67'- 87' Sand, tan, with clay 87'- 90' Clay, red, with sand 90'- 96' Sand, red 96'-108' Clay, red, with sand 108'-110' Lignite, with brown lignitic clay 110'-115' Clay, ten, with silt 115'-117' Lignite 117'-117.5' Clay, brown, lignitic 117.5'-119' Clay, brown, lignitic, with lignite stringers 119'-124' Clay, tan, with silt 124'-130' Clay, lignitic, with lignite stringers 130'-145' Sand, tan, medium 145'-148' Lignite, with clay, dark-gray 148'-150' Clay, lignitic, brown 150'-198' Clay, lignitic, brown 150'-198' Clay, lignitic, with sand 198'-200' Lignite, with clay, dark-brown 200'-211' Clay, tan, with silt and sand T. D.: 211' Drill Hole No. 71. Elevation 310' Location: SE½, Sec. 19, T. 14 N., R. 3 E. County, Craighead Logged by: M. A. Stoyanov 2/76. 0'- 40' Clay, tan, with silt and trace gravel 40'- 48' Clay, light-gray, with silt and sand 48'- 54' Clay, mottled, with silt and sand 58'- 65' Clay, light-gray, with silt and sand	125'.148' Clay, light-gray, with sand 148'-163' Clay, dark-gray, with silt 163'- Siltstone, very hard T. D.: 163' Drill Hole No. 73. Elevation 275' Location: NE¼, Sec. 19, T. 14 N., R. 3 E County, Creighead Logged by: D. W. Lumbert 2/76 O'- 6' Clay, dark tan, with sand 6'- 10' Clay, light tan, with sand and gravel 10'- 16' Gravel, with sand and clay, tal @ 39' Wood fibers 40'- 50' Cored interval 10' Recovered: Lost: 8' 2' 2.0' Lost 5.0' Lighte 3.0' Clay, dark-gray to bluish gray with silt 71'-102' Sand, yalt and pepper 102'-150' Sand, very fine 150'- Clay, blue-gray, with silt T. D.: 150' Drill Hole No. 74. Elevation 265' Location: SE¼, Sec. 18, T. 14 N., R. 3 E County, Craighead Logged by: M. A. Stoyanov 2/76.	County, Craighead Logged by: D. W. Lumbert 2/76. 0'- 16' Clay, light tan, with sand, medium 16'- 26' Clay, light-gray, with sand, medium 26'- 32' Clay, dark-gray, with sand, very-fine 32'- 33' Gravel 33'- 45' Sand, salt and pepper - H ₂ O, sand 45'- 52' Lignite, with some clay, light-gray, at 47' Lignite 53'- 60' Clay, light-gray, with sand, very-fine 60'- 70' Clay, blue-green, with silt 70'- 74' Clay, dark-gray, with sand 74'- 80' Clay, blue-green, with silt 80'- 95' Siltstone 96'-112' Clay, dark-gray, with sand 113'-126' Sand, with clay, light tan 113'-126' Sand, with clay, light tan 113'-142' Siltstone 113'-142' Siltstone 112'-142' Siltstone 142'-142' Siltstone 142'-142' Siltstone 142'-150' Clay, light-gray, with sand 160'-170' Clay, dark-gray, with sand 160'-170' Clay, dark-gray, with sand 160'-174' Lignite, with clay, dark-gray 174'-176' Clay, light-gray 176'-186' Clay, light-gray 176'-186' Clay, light-gray 176'-199' Clay, dark-gray, with sand Lignite, with clay, dark-gray to black 199'-200' Lignite
17'- 20' Clay, tan, with sand 20'- 30' Sand, tan, medium 30'- 67' Sand, fine, tan 67'- 87' Sand, fine, tan 67'- 87' Sand, red, with sand 90'- 96' Sand, red 96'-108' Clay, red, with sand 108'-110' Lignite, with brown lignitic clay 110'-115' Clay, tan, with silt 115'-117' Lignite 117.5'-119' Clay, brown, lignitic, with lignite stringers 119'-124' Clay, tan, with silt 124'-130' Clay, lignitic, with lignite stringers 130'-145' Sand, tan, medium 145'-148' Lignite, with clay, dark-gray 148'-150' Clay, lignitic, brown 150'-198' Clay, lignitic, brown 150'-198' Clay, lignitic, brown 150'-198' Lignite, with clay, dark-brown 150'-198' Lignite, with silt and sand 17. D.: 211' Drill Hole No. 71. Elevation 310' Location: SE'/4, Sec. 19, T. 14 N., R. 3 E. County, Craighead Logged by: M. A. Stoyanov 2/76. 0'- 40' Clay, tan, with silt and trace gravel 40'- 48' Clay, light-gray, with silt and sand 48'- 54' Clay, mottled, with silt and sand 54'- 58' Gravel, with clay, and sand 58'- 65' Clay, light-gray, with silt	125'.148' Clay, light-gray, with sand 148'-163' Clay, dark-gray, with silt 163'- Siltstone, very hard T. D.: 163' Drill Hole No. 73. Elevation 275' Location: NE½, Sec. 19, T. 14 N., R. 3 E County, Creighead Logged by: D. W. Lumbert 2/76 O'- 6' Clay, dark tan, with sand and gravel 10'- 16' Gravel, with sand and clay, tan @ 39' Wood fibers 40'- 50' Cored interval 10' Recovered: Lost: 8' 2' 2.0' Lost 5.0' Lignite 3.0' Clay, dark-gray to bluish green 50'- 71' Clay, blue-gray, with clay, ligh gray with silt 71'-102' Sand, salt and pepper 150'- Clay, blue-graen, with silt T. D.: 150' Drill Hole No. 74. Elevation 265' Location: SE½, Sec. 18, T. 14 N., R. 3 E County, Craighead Logged by: M. A. Stoyanov 2/76. 0'- 18' Clay, tan, with sand 18'- 26' Clay, tan, with sand 18'- 26' Clay, tank-gray with very-fine 26'- 32' Clay, dark-gray, with sand 32' Clay,	County, Craighead Logged by: D. W. Lumbert 2/76. 0'- 16' Clay, light tan, with sand, medium 16'- 26' Clay, light-gray, with sand, medium 26'- 32' Clay, dark-gray, with sand, very-fine 32'- 33' Gravel 33'- 45' Sand, salt and pepper - H ₂ O, sand 45'- 52' Lignite, with some clay, light-gray, at 47' Lignite 60'- 70' Clay, light-gray, with sand, very-fine 60'- 70' Clay, blue-green, with silt 70'- 74' Clay, dark-gray, with sand 74'- 80' Clay, blue-green, with silt 80'- 95' Siltstone 96'-112' Clay, dark-gray, with sand 113'-126' Sand, with clay, light tan 113'-126' Sand, with clay, light tan 126'-130' Clay, light-gray, with sand 130'-142' Siltstone 113'-126' Clay, light-gray, with sand 130'-142' Siltstone 142'-142'/3' Siltstone 142'-14-160' Clay, light-gray, with sand 160'-170' Clay, gray, with silt 150'-160' Clay, dark-gray, with sand 160'-174' Lignite, with clay, dark-gray 174'-176' Clay, light-gray 176'-186' Clay, light-gray 176'-186' Clay, blue-green, with sand Lignite, with clay, dark gray to black 199'-200' Lignite Clay, dark-gray
17'- 20' Clay, tan, with sand 20'- 30' Sand, tan, medium 30'- 67' Sand, tine, tan 67'- 87' Sand, tan, with clay 87'- 90' Clay, red, with sand 90'- 96' Sand, red 96'-108' Clay, red, with sand 108'-110' Lignite, with brown lignitic clay 110'-115' Clay, ten, with silt 115'-117' Lignite 117'-117.5' Clay, brown, lignitic, with lignite stringers 119'-124' Clay, brown, lignitic, with lignite stringers 130'-145' Sand, tan, medium 145'-148' Sand, tan, medium 145'-148' Lignite, with clay, dark-gray 128'-200' Clay, lignitic, brown 150'-198' Clay, very-silty, with sand 198'-200' Clay, tan, with silt and sand T. D.: 211' Drill Hole No. 71. Elevation 310' Location: SE½, Sec. 19, T. 14 N., R. 3 E. County, Craighead Logged by: M. A. Stoyanov 2/76. O'- 40' Clay, tan, with silt and trace gravel 40'- 48' Clay, light-gray, with silt and sand 58'- 54' Clay, mottled, with silt and sand 58'- 65' Clay, light-gray, with silt and sand 58'- 65' Clay, light-gray, with silt and sand 65'- 76' Clay, light-gray, with silt and trace of lignite	125'.148' Clay, light-gray, with sand 148'-163' Clay, dark-gray, with silt 163'- Siltstone, very hard T. D.: 163' Drill Hole No. 73. Elevation 275' Location: NE¼, Sec. 19, T. 14 N., R. 3 E County, Creighead Logged by: D. W. Lumbert 2/76 O'- 6' Clay, dark tan, with sand and gravel 10'- 16' Gravel, with sand and clay, tan @ 39' Wood fibers 40'- 50' Cored interval 10' Recovered: Lost: 8' 2' 2.0' Lost 5.0' Lignite 3.0' Clay, dark-gray to bluish green 50'- 71' Clay, blue-gray, with clay, ligh gray with silt 71'-102' Sand, salt and pepper 102'-150' Sand, very fine 150'- Clay, blue-green, with silt T. D.: 150' Drill Hole No. 74. Elevation 265' Location: SE¼, Sec. 18, T. 14 N., R. 3 E County, Craighead Logged by: M. A. Stoyanov 2/76. 0'- 18' Clay, tan, with sand 18'- 26' Clay, light-gray to red 26'- 32' Clay, dark-gray, with very-fine sand 32'- 34' Gravel	County, Craighead Logged by: D. W. Lumbert 2/76. 0'- 16' Clay, light tan, with sand, medium 16'- 26' Clay, light-gray, with sand, medium 26'- 32' Clay, dark-gray, with sand, very-fine 32'- 33' Gravel 33'- 45' Sand, salt and pepper - H ₂ O, sand 45'- 52' Lignite, with some clay, light-gray, at 47' 52'- 53' Lignite 60'- 70' Clay, light-gray, with sand, very-fine 60'- 70' Clay, blue-green, with silt 70'- 74' Clay, dark-gray, with sand 74'- 80' Clay, blue-green, with silt 80'- 95' Clay, tan, with sand 95'- 96' Siltstone 96'-112' Clay, dark-gray, with silt 112'-130' Clay, light-gray, with sand 130'-142' Clay, light-gray, with sand 130'-142' Siltstone 113'-126' Sand, with clay, light tan 130'-142' Siltstone 142'-150' Clay, gray, with silt 150'-160' Clay, gray, with silt 150'-160' Clay, dark-gray, with sand 160'-170' Clay, dark-gray, with sand 170'-174' Lignite, with clay, dark-gray 176'-186' Clay, dark-gray, with sand 197'-199' Lignite, with clay, dark gray to black 199'-200' Lignite Clay, dark-green to black, with
17'- 20' Clay, tan, with sand 20'- 30' Sand, tan, medium 30'- 67' Sand, tan, medium 30'- 67' Sand, tan, with clay 87'- 90' Sand, red 96'-108' Clay, red, with sand 90'- 96' Sand, red 96'-108' Clay, red, with sand 108'-110' Lignite, with brown lignitic clay 110'-115' Clay, tan, with silt 115'-117' Lignite 117'-117.5' Clay, brown, lignitic, with lignite stringers Clay, tan, with silt 124'-130' Clay, lignitic, with lignite stringers 30'-145' Sand, tan, medium 145'-148' Lignite, with clay, dark-gray 148'-150' Clay, lignitic, brown 150'-198' Clay, lignitic, brown 200'-211' Clay, very-silty, with sand 198'-200' Lignite, with clay, dark-brown Clay, tan, with silt and sand T. D.: 211' Drill Hole No. 71. Elevation 310' Location: SE'/4, Sec. 19, T. 14 N., R. 3 E. County, Craighead Logged by: M. A. Stoyanov 2/76. 0'- 40' Clay, tan, with silt and trace gravel 40'- 48' Clay, light-gray, with silt and sand 48'- 54' Clay, mottled, with silt and sand 58'- 65' Clay, light-gray, with silt and sand 65'- 76' Clay, light-gray, with silt and sand 65'- 76' Clay, light-gray, with silt and trace of lignite 85'-100' Clay, light-gray, with silt silt and trace of lignite 85'-100' Clay, light-gray, with silt silt and trace of lignite 85'-100' Clay, light-gray, with silt silt and trace of lignite 85'-100' Clay, light-gray, with silt	125'.148' Clay, light-gray, with sand 148'-163' Clay, dark-gray, with silt 163'- Siltstone, very hard T. D.: 163' Drill Hole No. 73. Elevation 275' Location: NE½, Sec. 19, T. 14 N., R. 3 E County, Creighead Logged by: D. W. Lumbert 2/76 O'- 6' Clay, dark tan, with sand and gravel 10'- 16' Gravel, with sand and clay, tan @ 39' Wood fibers 40'- 50' Cored interval 10' Recovered: Lost: 8' 2' 2.0' Lost 5.0' Lignite 3.0' Clay, dark-gray to bluish green 50'- 71' Clay, blue-gray, with clay, ligh gray with silt 71'-102' Sand, salt and pepper 102'-150' Sand, very fine 150'- Clay, blue-green, with silt T. D.: 150' Drill Hole No. 74. Elevation 265' Location: SE½, Sec. 18, T. 14 N., R. 3 E County, Craighead Logged by: M. A. Stoyanov 2/76. 0'- 18' Clay, tan, with sand 18'- 26' Clay, light-gray to red 26'- 32' Clay, dark-gray, with very-fine sand 32'- 34' Gravel 34'- 46' Sand, very-fine, white and black 34'- 46'	County, Craighead Logged by: D. W. Lumbert 2/76. 0'- 16' Clay, light tan, with sand, medium 16'- 26' Clay, light-gray, with sand, medium 26'- 32' Clay, dark-gray, with sand, very-fine 32'- 33' Grawel 33'- 45' Sand, salt and pepper - H ₂ O, sand 45'- 52' Lignite, with some clay, light-gray, at 47' Lignite 53'- 60' Clay, light-gray, with sand, very-fine 60'- 70' Clay, blue-green, with silt 70'- 74' Clay, dark-gray, with sand 74'- 80' Clay, tan, with sand 95'- 96' Clay, tan, with sand 95'- 96' Siltstone 113'-126' Sand, with clay, light tan 126'-130' Clay, light-gray, with sand 130'-142' Clay, light-gray, with sand 130'-142' Siltstone 113'-126' Sand, with clay, light tan 126'-130' Clay, light-gray, with sand 130'-142' Siltstone 142'-150' Clay, gray, with silt 142'-142'/-150' Clay, gray, with silt 150'-160' Clay, dark-gray, with sand 160'-170' Clay, dark-green, with sand 160'-170' Clay, dark-green, with sand 160'-170' Clay, light-gray 176'-186' Clay, blue-green, with sand 186'-197' Clay, dark-green, with sand 186'-197' Clay, dark-gray, with sand 197'-199' Lignite, with clay, dark-gray to black 199'-200' Lignite, with clay, dark gray to black 199'-200' Clay, dark-green to black, with silt 288'-288's' Siltstone
17'- 20' Clay, tan, with sand 20'- 30' Sand, tan, medium 30'- 67' Sand, tan, medium 30'- 67' Sand, tan, with clay 87'- 90' Sand, red 96'-108' Clay, red, with sand 90'- 96' Sand, red 96'-108' Clay, red, with sand 108'-110' Lignite, with brown lignitic clay 110'-115' Clay, tan, with silt 115'-117' Lignite 117'-117.5' Clay, brown, lignitic, with lignite stringers Clay, tan, with silt 124'-130' Clay, lignitic, with lignite stringers 30'-145' Sand, tan, medium 145'-148' Lignite, with clay, dark-gray 148'-150' Clay, lignitic, brown 150'-198' Clay, lignitic, brown 200'-211' Clay, very-silty, with sand 198'-200' Lignite, with clay, dark-brown Clay, tan, with silt and sand T. D.: 211' Drill Hole No. 71. Elevation 310' Location: SE'/4, Sec. 19, T. 14 N., R. 3 E. County, Craighead Logged by: M. A. Stoyanov 2/76. 0'- 40' Clay, tan, with silt and trace gravel 40'- 48' Clay, light-gray, with silt and sand 48'- 54' Clay, mottled, with silt and sand 58'- 65' Clay, light-gray, with silt and sand 65'- 76' Clay, light-gray, with silt and sand 65'- 76' Clay, light-gray, with silt and trace of lignite 85'-100' Clay, light-gray, with silt silt and trace of lignite 85'-100' Clay, light-gray, with silt silt and trace of lignite 85'-100' Clay, light-gray, with silt silt and trace of lignite 85'-100' Clay, light-gray, with silt	125'.148' Clay, light-gray, with sand 148'-163' Clay, dark-gray, with silt 163'- Siltstone, very hard T. D.: 163' Drill Hole No. 73. Elevation 275' Location: NE%, Sec. 19, T. 14 N., R. 3 E County, Creighead Logged by: D. W. Lumbert 2/76 O'- 6' Clay, dark tan, with sand 6'- 10' Clay, light tan, with sand and gravel 10'- 16' Gravel, with sand and clay, tal @ 39' Wood fibers 40'- 50' Cored interval 10' Recovered: Lost: 8' 2' 2.0' Lost 5.0' Lignite 3.0' Clay, dark-gray to bluish gray with silt 71'-102' Sand, salt and pepper 102'-150' Sand, very fine 150'- Clay, blue-gray, with silt T. D.: 150' Drill Hole No. 74. Elevation 265' Location: SE%, Sec. 18, T. 14 N., R. 3 E County, Craighead Logged by: M. A. Stoyanov 2/76. 0'- 18' Clay, tan, with sand 18'- 26' Clay, light-gray to red 26'- 32' Clay, dark-gray, with very-fine sand 32'- 34' Gravel	County, Craighead Logged by: D. W. Lumbert 2/76. 0'- 16' Clay, light tan, with sand, medium 16'- 26' Clay, light-gray, with sand, medium 26'- 32' Clay, dark-gray, with sand, very-fine 32'- 33' Gravel 33'- 45' Sand, salt and pepper - H ₂ O, sand 45'- 52' Lignite, with some clay, light-gray, at 47' 52'- 53' Lignite 53'- 60' Clay, light-gray, with sand, very-fine 60'- 70' Clay, blue-green, with silt 70'- 74' Clay, dark-gray, with sand 74'- 80' Clay, blue-green, with silt 80'- 95' Siltstone 96'-112' Clay, dark-gray, with sand 113'-126' Sand, with clay, light tan 113'-126' Sand, with clay, light tan 126'-130' Clay, light-gray, with sand 130'-142' Clay, light-gray, with sand 130'-142' Siltstone 142'½-150' Clay, gray, with silt 150'-160' Clay, dark-gray, with sand 160'-170' Clay, dark-gray, with sand 160'-170' Clay, dark-gray, with sand 160'-170' Clay, dark-gray, with sand 170'-174' Lighite, with clay, dark-gray 176'-186' Clay, light-gray 176'-186' Clay, dark-gray, with sand 160'-197' Clay, dark-gray, with sand 160'-190' Clay, dark-gray 190'-200' Clay, dark-gray

	ARRANSAS EIGITIE IIV ESTIGATIONS	
Drill Hole No. 75. Elevation 275'	41' - 42' Lignite	24'- 38' Clay, tan, with sand 38'- 40' Sand, coarse with gravel
Location: SE¼, Sec. 24, T. 14 N., R. 2 E. County, Craighead Logged by: M. A. Stoyanov* 2/76.	42' - 43' Clay, dark-gray, silty and lignitic 43' - 45' Clay, tan	40'- 58' Clay, tan to light-gray, with
Logged by . W. A. Stoyanov 2/76.	45' - 47' Clay, gray, silty	sand 58'- 68' Clay, gray, blue-green, with silt
0'- 4' Sand, tan 4'- 10' Clay, tan to gray, with sand	Core (190'-200') 50% recovery 190'-195' lost, probably loose	68'- 68.5' Sand and gravel layer 68.5'-71.5' Clay, dark-gray, with silc 71.5'- 79' Clay, gray, with silt
10'- 38' Clay, tan to light-gray, with silt	sand	79'- 80' Clay, dark any, with silt
48'- 58' Sand, tan, coarse	gray, and semi-con	80'- 82.5' Lignite 82.5'- 93' Clay, light-gray, with silt
58'- 63' Sand, fine, with gravel *63'- 75' Clay, blue-green, with silt	solidated 199'-200' lignite	93'- 94' Clay, gray, with sand 94'- 95' Lignite
75'- 78' Clay, gray, with silt 78'- 79' Siltstone	*Drillers log only except for	95'- 99' Clay, gray, with silt 99'-105' Clay, light-gray, with silt
79'- 82' Sand, gray, fine, with clay and silt	core	105′-105.5′ Sand, gray 105.5′-112′ Clay, gray, with sand
82'- 82.3' Siltstone, gray 82.3'-92' Sand, gray, fine with clay and		112'-118' Sand, with clay, gray 118'-122' Clay, gray, with sand
silt 92'-170' Sand, gray, fine with 2'' layer	Drill Hole No. 77. Elevation 270'	122'-190' Sand, gray, with clay
of siltstone 170'-183' Sand, gray, fine, with 1" thick	Location: SE¼, Sec. 16, T. 14 N., R. 3 E.	212'-213' Lignite
stringer of lignite	County, Craighead Logged by: D. W. Lumbert 3/76.	213'-220' Clay, dark-brown, with trace of lignite and silt
1" siltstone	0'- 32' Clay, gray to tan, with brown	220'-230' Clay, light-gray, with silt 230'-246' Clay, dark to light-gray, with
186'-192' Sand, gray, fine-grained 192'-192.5' Siltstone	humus 32'- 48' Gravel, pea-size to pebbles, with	silt, some wood fibers 246'-248' Lignite with clay, dark-brown
192.5'-201.5' Sand, fine-grained, gray T. D.: 201.5'	sand 48'- 58' Clay, dark-gray, with siit	248'-252' Clay, light-brown, with silt 252'-260' Clay, dark to light-gray, with
* From 63' to T. D. was drillers	58'- 70' Sand, medium 70'- 91' Sand, fine, with trace of lignite	silt T. D.: 260'
log only	@ 87′ 91′- 94′ Lignite, soft, black	Drill Hole No. 79. Elevation 325'
— inches	94'- 98' Clay, black, very lignitic 98'-100' Clay, light-gray, to white	Location: NE%, Sec. 13, T. 14 N., R. 2 E. County, Craighead
Drill Hole No. 76. Elevation 267' Location: NE¼, Sec. 19, T. 14 N., R. 3 E.	100'-140' Sand, fine, with lignite stringer @ 129'	Logged by: D. W. Lumbert 3/76.
County, Craighead Logged by: B. F. Clardy* 2/76.	140'-150' Clay, bluish-green, with silt 150'-158' Sand, very-fine	0'- 10' Clay, red, with sand 10'- 30' Clay, red to tan, with sand
0'- 4' Sand, tan, medium-grained	158'-170' Sand, very-fine, with clay, blue to gray, @ 167' siltstone	30'- 52' Clay, red, with sand and gravel 52'- 60' Sand, with clay, tan to dark-
4'- 12' Clay, tan and gray, with silt 12'- 25' Clay, with sand, tan	170'-176½' Sand, very-fine, with clay, blue-gray	brown 60'- 80' Sand, with clay, tan to dark-
25'- 26' Gravel 26'- 31' Clay, tan to light-gray, with	176½'-182' Lignite stringers, with clay, gray 182'-200' Clay, tan, with silt	brown 80'-100' Clay, dark-brown, with sand
silt 31'- 38' Clay, gray, with silt	T. D.: 200'	with trace of lignite 100'-120' Sand, very-fine, clay, gray to
38'- 44' Lignite with some woody material and clay seams	Drill Hole No. 78-B. Elevation 345' Location Sec. 23, T. 14 N., R. 3 E.	blue 120'-130' Clay, light to dark-gray, with
44'- 50' Clay, tan, with silt 50'- 65' Clay, light-gray with silt	County, Craighead Logged by: M. A. Stoyanov 3/76.	very-fine sand
65'- 83' Clay, gray, with silt 83'- 83.5' Siltstone	0'- 24' Clay, light-brown, with silt	very-fine sand
83.5'-91' Clay, gray, with silt 91'-123' Sand, gray, fine, with 2'' layer	24'- 38' Clay, tan, with silt 38'- 40' Sand, coarse	150'-170' Clay, dark-gray, with sand and/ or silt
of siltstone 123'-125' Clay, with silt and sand, fine	40'- 58' Clay, tan to light-gray, w/silt	170'-190' Clay, dark-gray, blue, white, with sand
125'-125.5' Siltstone 125.5'-54' Clay, gray, with silt and sand,	58'- 68' Clay, gray to blue-green, with	190'-200' Clay, dark-gray, with silt T. D.: 200'
fine 154'-158' Clay, light-gray, with silt	68'- 68.5' Sand and gravel 68.5'- 79' Clay, dark-gray to gray, with silt	Drill Hole No. 80. Elevation 255'
158'-177.5' Clay, gray, with silt and sand, 2" layer of siltstone	79'- 83' Lignite w/clay, brown, lignitic 83'- 88' Clay, dark-brown, with silt	Location: NE¼, Sec. 14, T. 14 N., R. 2 E. County, Craighead
177.5'-184' Sand, gray, with clay and silt	88'-122' Clay, light-gray, with silt 122'-124' Clay, dark-brown	Logged by: M. A. Stoyanov 3/76.
195'-199' Lignite	124'-148' Clay, light-gray, with silt 148'-154' Clay, blue-green, with silt	0'- 55' Sand, gray, with clay, white to tan
199'-280' Clay, gray, with silt and sand, fine	154'-162' Clay, gray, with silt and clay, blue-green	55'- 56' Gravel with sand 56'- 70' Sand, gray, with clay, white to
280'-289' Clay, gray, with sand, fine 289'-289.5' Siltstone	162'-162.5' Siltstone layer, approximately 6"	tan 70'- 71' Sand, with black organic mater-
T. D.: 289.5'	162.5'-168' Clay, lignitic, with sand 168'-171' Lignite	ial (tar) 71'- 80' Sand, gray, with clay, tan to
Core (37'-47') 100% recovery 4.2' lignite.	171'-200' Clay, light-gray, with silt T. D.: 200'	gray 80'- 90' Sand, with gravel and tar
37' - 37.5' Clay, gray, silty	Drill Hole No. 78. Elevation 310'	90'-100' Sand, gray, with clay, and sand, white to brown, very- fine
w/lignite at 37.5 37.5'- 40.7' Lignite, black, with	Location: SW%, Sec. 9, T. 14 N., R. 3 E. County, Craighead	100'-105' Sand, gray, with clay, tan 105'-110' Sand, gray, with grayel
brown woody streaks	Logged by: D. W. Lumbert 3/76.	110'-120' Sand, gray, with clay 120'-130' Sand, gray, with clay increas-
40.7'- 41' Dark gray lignitic silty clay	0'- 24' Clay, light-tan, with sand, medium	ing T. D.: 130'
		1. D 130

	No. 81. Elevation 280'		sand	14'- 18'	Gravel
	Sec. 15, T. 14 N., R. 3 E.	238'-265'		18'- 19'	Clay, light-gray, with sand
County, Co	: M. A. Stoyanov 3/76.	205-205.4	' Hard material, probably silt-	19 - 21'	Gravel
LOgged by	. W. A. Stoyanov 3/76.	265.4'-284	stone, none to ID 'Clay, dark-gray, with trace of	21'- 37' 37'- 40 '	Clay, light-gray, tan sand Sand, light-gray, and clay
0'- 27'	Sand, white to tan, with 3"	200.4 -204	lignite with fine sand, hard	40'- 50'	Sand, light-gray, and clay Sand, tan
	siderite at 23'		layer @ 284', approximately 5"	50'- 90'	Sand, tan Sand, tan, very fine
27'- 27.5	'Siltstone, hard with clay, red	284'-300'	Clay, gray to dark-gray, with	90'-100'	Sand, light-tan, fine
	Sand and gravel with clay, red		sand	100'-110'	Sand, light-tan, white, very
50'- 60'	Clay, mottled, with sand, white		T. D.: 300'	110'-130'	Sand, light-tan, very fine
60'- 80'	Clay, tan, with sand			130'-150'	Sand, tan, very fine with
80'- 90'	Clay, gray, with sand	Drill Hole	No. 85. Elevation 320'		T. D.: 150'
90′-120′ 120′-130′	Clay, light-tan, white, with sand Clay, light-gray, increase in sand	County, Ci	Sec. 12, T. 15 N., R. 3 E.	Po-211 11 - 1 -	20.7
30'-149'	Sand, sait-pepper, with clay, tan		: M. A. Stoyanov 3/76.		89-B. Elevation 360'
00 140	@ 148' lignite stringer	r.ogged by	. IVI. A. Stoyanov 3/76.		Sec. 32, T. 16 N., R. 4 E.
49'-195'	Sand, salt-pepper, with clay,	0'- 10'	Sand, tan with clay, silt	County, G	: M. A. Stoyanov 4
	brown	10'- 20'	Sand, tan, with silt	Logged by	. IVI. A. Stoyallov
95′-200′		20'- 38'	Clay, gray, with silt and sand	0'- 10'	Clay, dark-tan, with sand
	T. D.: 200'	38'- 45'	Gravel, with sand, tan-gray	10'- 14'	Gravel, pea-size
ا مامالا النب	No. 92 Et 400/	45'- 60'	Sand, tan, gray, with clay	14'- 37'	Clay, tan, with silt
riii moie	No. 82. Elevation 400'	60′- 80′	Sand and gravel	37'- 48'	Clay, dark-tan, with silt
	Sec. 16, T. 15 N., R. 3 E.		T. D.: 80'	48'- 70'	Sand, well rounded, w/clay,
County, Ci	: M. A. Stoyanov 3/76.		Cave-in, lost circulation	70′-102′	Sand, well rounded, w/clay,
- agou by	71. Otoyanov 3/76.		No mud	102′-109′	Clay, dark, lignitic
0'- 50'		Drill Hole	No. 86. Elevation 340'	100/ 160/	@ 109' lignite
	Sand, red, with clay, white, and	Location	Sec. 28, T. 15 N., R. 3 E.	109'-160' 160'-169'	Sand, very fine
	silt	County, Ci	aighead	169'-178'	Clay, gray, with silt
60'- 70'	Sand, red, with clay, white, red		M. A. Stoyanov 3/76.	178'-181'	Clay, lignitic, trace lignite Lignite, hard
70′- 80′	Sand, red (larger grain), with			181'-182'	Clay, light-gray, with silt
00/440	clay, white	0'- 20'	Clay, dark-tan, with sand	182'-185'	Lignite, hard
80′-110′		20'- 38'	Clay, tan, very sandy	185'-188'	Clay, gray, with silt
	white	38'- 50'	Gravel, pea-sized, with coarse		@ 188' sandstone layer
	T. D.: 110'	E0/ C0/	sand	188'-206'	Clay, blue-green and light
		50'- 60'	Sand, coarse, with clay, red	206′-211′	Clay, dark-gray and blue-g
rill Hole	No. 83. Elevation 300'		T. D.: 60' Cave-in, sand	211'-244'	Siltstone @ 211' and clay, (
	Sec. 7, T. 14 N., R. 3 E.		No mud	244'-259'	blue-green
ounty, Cr			110 maa	144 -174	Clay, gray, with silt
	: M. A. Stoyanov 3/76.	Drill Hole	No. 87. Elevation 474'	259'-260'	Lignite, hard
ogged by		Drill Hole Location:	No. 87. Elevation 474' NE¼, Sec. 32, T. 16 N., R. 4 E.	259'-260' 260'-266'	Lignite, hard Clay, gray, with silt
0'- 35'	: M. A. Stoyanov 3/76. Clay, tan, with sand	Drill Hole Location: County, G	NE¼, Sec. 32, T. 16 N., R. 4 E.	259'-260'	Lignite, hard Clay, gray, with silt Clay, light-gray
ogged by 0'- 35' 35'- 68'	M. A. Stoyanov 3/76. Clay, tan, with sand Clay, red to tan, with sand	Location: County, G	NE¼, Sec. 32, T. 16 N., R. 4 E.	259'-260' 260'-266'	Lignite, hard Clay, gray, with silt Clay, light-gray @ 290' lignite stringer
ogged by 0'- 35' 35'- 68' 68'- 84'	M. A. Stoyanov 3/76. Clay, tan, with sand Clay, red to tan, with sand Gravel	Location: County, G Logged by	NE½, Sec. 32, T. 16 N., R. 4 E. reène : M. Howard 3/76.	259'-260' 260'-266' 266'-290'	Lignite, hard Clay, gray, with silt Clay, light-gray
0'- 35' 35'- 68' 68'- 84' 84'- 89'	M. A. Stoyanov 3/76. Clay, tan, with sand Clay, red to tan, with sand Gravel Clay, gray, with sand	Location: County, G	NE%, Sec. 32, T. 16 N., R. 4 E. reëne 3/76. Clay, dark-tan, with iron con-	259'-260' 260'-266' 266'-290'	Lignite, hard Clay, gray, with silt Clay, light-gray @ 290' lignite stringer Clay, gray, with silt
ogged by 0'- 35' 35'- 68' 68'- 84' 84'- 89' 89'- 92'	M. A. Stoyanov 3/76. Clay, tan, with sand clay, red to tan, with sand Gravel Clay, gray, with sand Clay, dark-gray, with sand	Location: County, G Logged by 0'- 28'	NE%, Sec. 32, T. 16 N., R. 4 E. reene 3/76. Clay, dark-tan, with iron concretions	259'-260' 260'-266' 266'-290'	Lignite, hard Clay, gray, with silt Clay, light-gray @ 290' lignite stringer Clay, gray, with silt T. D. 300' Cored interval 177.9'-187.9'
ogged by 0'- 35' 35'- 68' 68'- 84' 84'- 89' 89'- 92'	M. A. Stoyanov 3/76. Clay, tan, with sand Clay, red to tan, with sand Gravel Clay, gray, with sand Clay, dark-gray, with sand Lignite stringer, approximately	Location: County, G Logged by	NE%, Sec. 32, T. 16 N., R. 4 E. reene E. M. Howard 3/76. Clay, dark-tan, with iron concretions Clay, light-tan, with iron con-	259'-260' 260'-266' 266'-290'	Lignite, hard Clay, gray, with silt Clay, light-gray @ 290' lignite stringer Clay, gray, with silt T. D. 300' Cored interval 177.9'-187.9' Recovered: Lc
ogged by 0'- 35' 35'- 68' 68'- 84' 84'- 89' 89'- 92' 92'-92'2''	M. A. Stoyanov 3/76. Clay, tan, with sand Clay, red to tan, with sand Gravel Clay, gray, with sand Clay, dark-gray, with sand Lignite stringer, approximately 2"	Location: County, G Logged by 0'- 28' 28'- 36'	NE%, Sec. 32, T. 16 N., R. 4 E. reëne M. Howard Clay, dark-tan, with iron concretions Clay, light-tan, with iron concretions	259'-260' 260'-266' 266'-290'	Lignite, hard Clay, gray, with silt Clay, light-gray @ 290' lignite stringer Clay, gray, with silt T. D. 300' Cored interval 177.9'-187.9' Recovered: Lo
0'- 35' 35'- 68' 68'- 84' 84'- 89' 89'- 92' 92'-92'2''	M. A. Stoyanov 3/76. Clay, tan, with sand Clay, red to tan, with sand Gravel Clay, gray, with sand Clay, dark-gray, with sand Lignite stringer, approximately 2" Clay, gray, with sand, thin	Location: County, Gi Logged by 0'- 28' 28'- 36' 36'- 50'	NE%, Sec. 32, T. 16 N., R. 4 E. reene M. Howard 3/76. Clay, dark-tan, with iron concretions Clay, light-tan, with iron concretions Coarse sand and pea gravel	259'-260' 260'-266' 266'-290'	Lignite, hard Clay, gray, with silt Clay, light-gray @ 290' lignite stringer Clay, gray, with silt T. D. 300' Cored interval 177.9'-187.9' Recovered: 6' 177.9'-182' Lignite (hard)
ogged by 0'- 35' 35'- 68' 68'- 84' 89'- 92' 92'-92'2'' 2'2"- 107'	M. A. Stoyanov 3/76. Clay, tan, with sand Clay, red to tan, with sand Clay, gray, with sand Clay, dark-gray, with sand Lignite stringer, approximately 2" Clay, gray, with sand, thin lignite stringer @ 107"	Location: County, G Logged by 0'- 28' 28'- 36'	NE%, Sec. 32, T. 16 N., R. 4 E. reene M. Howard 3/76. Clay, dark-tan, with iron concretions Clay, light-tan, with iron concretions Coarse sand and pea gravel Coarse sand	259'-260' 260'-266' 266'-290'	Lignite, hard Clay, gray, with silt Clay, light-gray @ 290' lignite stringer Clay, gray, with silt T. D. 300' Cored interval 177.9'-187.9' Recovered: 6' 177.9'-182' Lignite (hard)
ogged by 0'- 35' 35'- 68' 68'- 84' 84'- 89' 89'- 92' 92'-92'2" 2'2"- 107'	M. A. Stoyanov 3/76. Clay, tan, with sand Clay, red to tan, with sand Gravel Clay, gray, with sand Clay, dark-gray, with sand Lignite stringer, approximately 2" Clay, gray, with sand, thin lignite stringer @ 107" Clay, gray, with silt	Location: County, Gi Logged by 0'- 28' 28'- 36' 36'- 50'	NE%, Sec. 32, T. 16 N., R. 4 E. reene M. Howard 3/76. Clay, dark-tan, with iron concretions Clay, light-tan, with iron concretions Coarse sand and pea gravel Coarse sand Hole abandoned at 60° - could	259'-260' 260'-266' 266'-290' 290'-300'	Lignite, hard Clay, gray, with silt Clay, light-gray @ 290' lignite stringer Clay, gray, with silt T. D. 300' Cored interval 177.9'-187.9' Recovered: Lo 6' 177.9'-182' Lignite (hard) 182'-183.9' Clay, tan, very si
ogged by 0'- 35' 35'- 68' 68'- 84' 84'- 89' 89'- 92' 2'2"- 107' 07'-114'	M. A. Stoyanov 3/76. Clay, tan, with sand Clay, red to tan, with sand Clay, gray, with sand Clay, dark-gray, with sand Lignite stringer, approximately 2" Clay, gray, with sand, thin lignite stringer @ 107" Clay, gray, with silt Clay, blue-green, with silt	Location: County, Gi Logged by 0'- 28' 28'- 36' 36'- 50'	NE%, Sec. 32, T. 16 N., R. 4 E. reene M. Howard 3/76. Clay, dark-tan, with iron concretions Clay, light-tan, with iron concretions Coarse sand and pea gravel Coarse sand Hole abandoned at 60' - could not get past base of gravel at	259'-260' 260'-266' 266'-290' 290'-300'	Lignite, hard Clay, gray, with silt Clay, light-gray @ 290' lignite stringer Clay, gray, with silt T. D. 300' Cored interval 177.9'-187.9' Recovered: Lo 6' 177.9'-182' Lignite (hard) 182'-183.9' Clay,tan,very si
ogged by 0'- 35' 35'- 68' 68'- 84' 34'- 89' 39'- 92' 92'-92'2'' 2'2"- 107' 07'-114'	M. A. Stoyanov 3/76. Clay, tan, with sand Clay, red to tan, with sand Gravel Clay, gray, with sand Clay, dark-gray, with sand Lignite stringer, approximately 2" Clay, gray, with sand, thin lignite stringer @ 107' Clay, gray, with silt Clay, blue-green, with silt Sand, very fine, with siltstone	Location: County, Gi Logged by 0'- 28' 28'- 36' 36'- 50'	NE%, Sec. 32, T. 16 N., R. 4 E. reene M. Howard 3/76. Clay, dark-tan, with iron concretions Clay, light-tan, with iron concretions Coarse sand and pea gravel Coarse sand Hole abandoned at 60° - could	259'-260' 260'-266' 266'-290' 290'-300' Drill Hole Location:	Lignite, hard Clay, gray, with silt Clay, light-gray @ 290' lignite stringer Clay, gray, with silt T. D. 300' Cored interval 177.9'-187.9 Recovered: Lo 6' 177.9'-182' Lignite (hard) 182'-183.9' Clay, tan, very s No. 90. Elevation 365' Sec. 34, T. 16 N., R. 3 E.
ogged by 0'- 35' 35'- 68' 68'- 84' 84'- 89' 92'-92'2'' 2'2'- 107' 07'-114' 14'-120' 20'-130'	M. A. Stoyanov 3/76. Clay, tan, with sand Clay, red to tan, with sand Gravel Clay, gray, with sand Clay, dark-gray, with sand Lignite stringer, approximately 2" Clay, gray, with sand, thin lignite stringer @ 107' Clay, gray, with silt Clay, blue-green, with silt Sand, very fine, with siltstone layer at 130'	Location: County, G Logged by 0'- 28' 28'- 36' 36'- 50' 50'- 60'	NE%, Sec. 32, T. 16 N., R. 4 E. reene M. Howard 3/76. Clay, dark-tan, with iron concretions Clay, light-tan, with iron concretions Coarse sand and pea gravel Coarse sand Hole abandoned at 60' - could not get past base of gravel at 50'	259'-260' 260'-266' 266'-290' 290'-300' Drill Hole Location: County, G	Lignite, hard Clay, gray, with silt Clay, light-gray @ 290' lignite stringer Clay, gray, with silt T. D. 300' Cored interval 177.9'-187.9 Recovered: 6' 177.9'-182' Lignite (hard) 182'-183.9' Clay, tan, very s No. 90. Elevation 365' Sec. 34, T. 16 N., R. 3 E. reene
0/2 35/35/- 68/68/- 68/68/- 84/- 89/- 92/- 92/- 92/- 107/- 114/- 120/- 20/-136/- 80/-136/-	M. A. Stoyanov 3/76. Clay, tan, with sand Clay, red to tan, with sand Gravel Clay, gray, with sand Clay, dark-gray, with sand Lignite stringer, approximately 2" Clay, gray, with sand, thin lignite stringer @ 107' Clay, gray, with silt Clay, blue-green, with silt Sand, very fine, with siltstone	Location: County, Gi Logged by 0'- 28' 28'- 36' 36'- 50' 50'- 60'	NE%, Sec. 32, T. 16 N., R. 4 E. reene M. Howard 3/76. Clay, dark-tan, with iron concretions Clay, light-tan, with iron concretions Coarse sand and pea gravel Coarse sand Hole abandoned at 60' - could not get past base of gravel at 50' No. 88. Elevation 395'	259'-260' 260'-266' 266'-290' 290'-300' Drill Hole Location: County, G	Lignite, hard Clay, gray, with silt Clay, light-gray @ 290' lignite stringer Clay, gray, with silt T. D. 300' Cored interval 177.9'-187.9 Recovered: 6' 177.9'-182' Lignite (hard) 182'-183.9' Clay, tan, very s No. 90. Elevation 365' Sec. 34, T. 16 N., R. 3 E. reene
ogged by 0'- 35' 35'- 68' 58'- 84' 34'- 89' 39'- 92' 92'-92'2" 2'2" 107' 07'-114' 14'-120' 20'-130' 80'-136'	M. A. Stoyanov 3/76. Clay, tan, with sand Clay, red to tan, with sand Gravel Clay, gray, with sand Clay, dark-gray, with sand Lignite stringer, approximately 2" Clay, gray, with sand, thin lignite stringer @ 107' Clay, gray, with silt Clay, blue-green, with siltstone layer at 130' Clay, blue-green, with siltstone layer @ 136' Clay, blue-green, with siltstone layer @ 136' Clay, blue-green	Location: County, Gi Logged by 0'- 28' 28'- 36' 36'- 50' 50'- 60'	NE%, Sec. 32, T. 16 N., R. 4 E. reene M. Howard 3/76. Clay, dark-tan, with iron concretions Clay, light-tan, with iron concretions Coarse sand and pea gravel Coarse sand Hole abandoned at 60' - could not get past base of gravel at 50' No. 88. Elevation 395' NE%, Sec. 29, T. 16 N., R. 4 E.	259'-260' 260'-266' 266'-290' 290'-300' Drill Hole Location: County, G Logged by	Lignite, hard Clay, gray, with silt Clay, light-gray @ 290' lignite stringer Clay, gray, with silt T. D. 300' Cored interval 177.9'-187.9' Recovered: Lo 6' 177.9'-182' Lignite (hard) 182'-183.9' Clay, tan, very si No. 90. Elevation 365' Sec. 34, T. 16 N., R. 3 E. reene : M. A. Stoyanov
09ged by 0'- 35' 35'- 68' 36'- 68' 34'- 89' 39'- 92' 92'-92'2'' 2'2"- 107' 07'-114' 14'-120' 20'-130' 30'-136' 36'-138'	M. A. Stoyanov 3/76. Clay, tan, with sand Clay, red to tan, with sand Gravel Clay, gray, with sand Clay, gray, with sand Lignite stringer, approximately 2" Clay, gray, with sand, thin lignite stringer @ 107' Clay, gray, with silt Clay, blue-green, with silt Sand, very fine, with siltstone layer at 130' Clay, blue-green, with siltstone layer @ 136' Clay, blue-green Clay, lignitic	Location: County, Gi Logged by 0'- 28' 28'- 36' 36'- 50' 50'- 60'	NE%, Sec. 32, T. 16 N., R. 4 E. reene M. Howard 3/76. Clay, dark-tan, with iron concretions Clay, light-tan, with iron concretions Coarse sand and pea gravel Coarse sand Hole abandoned at 60' - could not get past base of gravel at 50' No. 88. Elevation 395' NE%, Sec. 29, T. 16 N., R. 4 E.	259'-260' 260'-266' 266'-290' 290'-300' Drill Hole Location: County, G Logged by	Lignite, hard Clay, gray, with silt Clay, light-gray @ 290' lignite stringer Clay, gray, with silt T. D. 300' Cored interval 177.9'-187.9 Recovered: Lo 6' 177.9'-182' Lignite (hard) 182'-183.9' Clay, tan, very si No. 90. Elevation 365' Sec. 34, T. 16 N., R. 3 E. reene : M. A. Stoyanov
09ged by 0'- 35' 35'- 68' 36'- 68' 34'- 89' 39'- 92' 92'-92'2'' 2'2"- 107' 07'-114' 14'-120' 20'-130' 30'-136' 36'-138'	M. A. Stoyanov 3/76. Clay, tan, with sand Clay, red to tan, with sand Gravel Clay, gray, with sand Lignite stringer, approximately 2" Clay, gray, with sand, thin lignite stringer @ 107" Clay, gray, with silt Clay, blue-green, with silt Sand, very fine, with siltstone layer at 130" Clay, blue-green, with siltstone layer @ 136" Clay, blue-green Clay, blue-green Clay, lignitic Clay, blue-green to gray, with	Location: County, Gi Logged by 0'- 28' 28'- 36' 36'- 50' 50'- 60' Drill Hole I Location: County, Gi Logged by	NE%, Sec. 32, T. 16 N., R. 4 E. reene M. Howard 3/76. Clay, dark-tan, with iron concretions Clay, light-tan, with iron concretions Coarse sand and pea gravel Coarse sand Hole abandoned at 60' - could not get past base of gravel at 50' No. 88. Elevation 395' NE%, Sec. 29, T. 16 N., R. 4 E. reene D. W. Lumbert 3/76.	259'-260' 260'-266' 266'-290' 290'-300' Drill Hole Location: County, G Logged by 0'- 2' 2'- 11' 11'- 19'	Lignite, hard Clay, gray, with silt Clay, light-gray @ 290' lignite stringer Clay, gray, with silt T. D. 300' Cored interval 177.9'-187.9 Recovered: Lo 6' 177.9'-182' Lignite (hard) 182'-183.9' Clay, tan, very si No. 90. Elevation 365' Sec. 34, T. 16 N., R. 3 E. reene E. M. A. Stoyanov Sand, tan Clay, dark-tan, with sand
ogged by 0'- 35' 35'- 68' 38'- 84' 34'- 89' 39'- 92' 92'-92'2'' 2'2"- 107' 07'-114' 14'-120' 20'-130' 30'-136' 38'-140'	Clay, tan, with sand Clay, red to tan, with sand Clay, gray, with sand Clay, gray, with sand Clay, dark-gray, with sand Lignite stringer, approximately 2" Clay, gray, with sand, thin lignite stringer @ 107" Clay, gray, with silt Clay, blue-green, with siltstone layer at 130" Clay, blue-green, with siltstone layer at 136" Clay, blue-green with siltstone layer, lignitic Clay, blue-green to gray, with silt, @ 154" lignite, with wood	Location: County, Gi Logged by 0'- 28' 28'- 36' 36'- 50' 50'- 60' Drill Hole I Location: County, Gi Logged by: 0'- 5'	NE%, Sec. 32, T. 16 N., R. 4 E. reene M. Howard 3/76. Clay, dark-tan, with iron concretions Clay, light-tan, with iron concretions Coarse sand and pea gravel Coarse sand Hole abandoned at 60' - could not get past base of gravel at 50' No. 88. Elevation 395' NE%, Sec. 29, T. 16 N., R. 4 E. reene	259'-260' 260'-266' 266'-290' 290'-300' Drill Hole Location: County, G Logged by 0'- 2' 2'- 11' 11'- 19'	Lignite, hard Clay, gray, with silt Clay, light-gray © 290' lignite stringer Clay, gray, with silt T. D. 300' Cored interval 177.9'-187.9 Recovered: Lo 6' 177.9'-182' Lignite (hard) 182'-183.9' Clay, tan, very si No. 90. Elevation 365' Sec. 34, T. 16 N., R. 3 E. reene E. M. A. Stoyanov Sand, tan Clay, dark-tan, with sand Sand, gravel Clay, tan, with sand and general
ogged by 0'- 35' 35'- 68' 38'- 84' 38'- 89' 39'- 92' 92'-92'2'' 2'2"- 107' 07'-114' 14'-120' 20'-130' 30'-136' 38'-140' 10'-154'	M. A. Stoyanov 3/76. Clay, tan, with sand Clay, red to tan, with sand Gravel Clay, gray, with sand Clay, gray, with sand Lignite stringer, approximately 2" Clay, gray, with sand, thin lignite stringer @ 107" Clay, gray, with silt Clay, blue-green, with silt Sand, very fine, with siltstone layer at 130" Clay, blue-green, with siltstone layer @ 136" Clay, blue-green Clay, lignitic Clay, blue-green Clay, lignitic Clay, blue-green to gray, with silt, @ 154" lignite, with wood fibers	Location: County, Gi Logged by 0'- 28' 28'- 36' 36'- 50' 50'- 60' Drill Hole I Location: County, Gi Logged by: 0'- 5' 5'- 12'	NE%, Sec. 32, T. 16 N., R. 4 E. reene M. Howard 3/76. Clay, dark-tan, with iron concretions Clay, light-tan, with iron concretions Coarse sand and pea gravel Coarse sand Hole abandoned at 60' - could not get past base of gravel at 50' No. 88. Elevation 395' NE%, Sec. 29, T. 16 N., R. 4 E. reene D. W. Lumbert 3/76. Clay, brown to tan, with sand Sand, coarse, w/gravel, pea-size	259'-260' 260'-266' 266'-290' 290'-300' Drill Hole Location: County, G Logged by 0'- 2' 2'- 11'	Lignite, hard Clay, gray, with silt Clay, light-gray © 290' lignite stringer Clay, gray, with silt T. D. 300' Cored interval 177.9'-187.9 Recovered: Lo 6' 177.9'-182' Lignite (hard) 182'-183.9' Clay, tan, very s No. 90. Elevation 365' Sec. 34, T. 16 N., R. 3 E. reene E. M. A. Stoyanov Sand, tan Clay, dark-tan, with sand Sand, gravel Clay, tan, with sand and general
ogged by 0'- 35' 35'- 68' 38'- 84' 38'- 92' 92'-92'-92' 2'2"- 107' 07'-114' 14'-120' 20'-130' 80'-136' 88'-140' 40'-154'	M. A. Stoyanov 3/76. Clay, tan, with sand Clay, red to tan, with sand Gravel Clay, gray, with sand Lignite stringer, approximately 2" Clay, gray, with sand, thin lignite stringer @ 107" Clay, gray, with silt Clay, blue-green, with silt Sand, very fine, with siltstone layer at 130" Clay, blue-green, with siltstone layer @ 136" Clay, blue-green Clay, lignitic Clay, blue-green to gray, with silt, @ 154" lignite, with wood fibers Clay, light-gray, with silt	Drill Hole Location: County, Ging Logged by: 0'- 28' 28'- 36' 36'- 50' 50'- 60' Drill Hole Location: County, Ging Logged by: 0'- 5' 5'- 12' 12'- 20'	NE%, Sec. 32, T. 16 N., R. 4 E. reene : M. Howard 3/76. Clay, dark-tan, with iron concretions Clay, light-tan, with iron concretions Coarse sand and pea gravel Coarse sand Hole abandoned at 60' - could not get past base of gravel at 50' No. 88. Elevation 395' NE%, Sec. 29, T. 16 N., R. 4 E. reene D. W. Lumbert 3/76. Clay, brown to tan, with sand Sand, coarse, w/gravel, pea-size Sand, coarse	259'-260' 260'-266' 266'-290' 290'-300' Drill Hole Location: County, G Logged by 0'- 2' 2'- 11' 11'- 19' 19'- 27'	Lignite, hard Clay, gray, with silt Clay, light-gray @ 290' lignite stringer Clay, gray, with silt T. D. 300' Cored interval 177.9'-187.9 Recovered: Lo 6' 177.9'-182' Lignite (hard) 182'-183.9' Clay, tan, very si No. 90. Elevation 365' Sec. 34, T. 16 N., R. 3 E. reene: M. A. Stoyanov Sand, tan Clay, dark-tan, with sand Sand, gravel Clay, tan, with sand and g Sand, tan Clay, tan, with sand and g Sand, tan Clay, light-gray, with sand
ogged by 0'- 35' 35'- 68' 68'- 84' 89'- 92' 92'-92'2'' 2'2"- 107' 07'-114' 14'-120' 20'-130' 30'-136' 38'-140' 40'-154'	Clay, tan, with sand Clay, red to tan, with sand Clay, gray, with sand Clay, gray, with sand Clay, dark-gray, with sand Lignite stringer, approximately 2" Clay, gray, with sand, thin lignite stringer @ 107" Clay, gray, with silt Clay, blue-green, with siltstone layer at 130" Clay, blue-green, with siltstone layer at 130" Clay, blue-green of gray, with silt, @ 154" lignite, with wood fibers Clay, light-gray, with silt Clay, light-gray, with silt Clay, light-gray, with silt Clay, gray, with silt	Drill Hole I Logged by 0'- 28' 28'- 36' 36'- 50' 50'- 60' Drill Hole I Location: County, Gi Logged by: 0'- 5' 5'- 12' 12'- 20' 20'- 50'	NE%, Sec. 32, T. 16 N., R. 4 E. reene M. Howard 3/76. Clay, dark-tan, with iron concretions Clay, light-tan, with iron concretions Coarse sand and pea gravel Coarse sand Hole abandoned at 60' - could not get past base of gravel at 50' No. 88. Elevation 395' NE%, Sec. 29, T. 16 N., R. 4 E. reene D. W. Lumbert 3/76. Clay, brown to tan, with sand Sand, coarse, w/gravel, pea-size Sand, coarse Sand, medium to fine, clay, tan	259'-260' 260'-266' 266'-290' 290'-300' Drill Hole Location: County, G Logged by 0'- 2' 2'- 11' 11'- 19' 19'- 27' 27'- 70'	Lignite, hard Clay, gray, with silt Clay, light-gray © 290' lignite stringer Clay, gray, with silt T. D. 300' Cored interval 177.9'-187.9' Recovered: Lo 6' 177.9'-182' Lignite (hard) 182'-183.9' Clay, tan, very si No. 90. Elevation 365' Sec. 34, T. 16 N., R. 3 E. reene E. M. A. Stoyanov Sand, tan Clay, dark-tan, with sand Sand, gravel Clay, tan, with sand and grand, tan Clay, light-gray, with sand Clay, light-gray, with sand Clay, light-gray, with sand
09ged by 0'- 35' 35'- 68' 38'- 84' 38'- 92' 92'-92'2" 2'2"- 107' 07'-114' 14'-120' 20'-130' 30'-136' 38'-140' 40'-154'	M. A. Stoyanov 3/76. Clay, tan, with sand Clay, red to tan, with sand Clay, gray, with sand Clay, gray, with sand Clay, gray, with sand Lignite stringer, approximately 2" Clay, gray, with sand, thin lignite stringer @ 107" Clay, gray, with silt Clay, blue-green, with siltstone layer at 130" Clay, blue-green, with siltstone layer @ 136" Clay, blue-green Clay, lignitic Clay, blue-green to gray, with silt, @ 154" lignite, with wood fibers Clay, light-gray, with silt Clay, gray, with silt Clay, gray with silt Clay, gray, with silt Clay, gray with silt Clay, gray, with silt	Drill Hole Logged by O'- 28' 28'- 36' 36'- 50' 50'- 60' Drill Hole Location: County, G Logged by: O'- 5' 5'- 12' 12'- 20' 20'- 50' 50'- 60'	NE%, Sec. 32, T. 16 N., R. 4 E. reene M. Howard 3/76. Clay, dark-tan, with iron concretions Clay, light-tan, with iron concretions Coarse sand and pea gravel Coarse sand Hole abandoned at 60' - could not get past base of gravel at 50' No. 88. Elevation 395' NE%, Sec. 29, T. 16 N., R. 4 E. reene D. W. Lumbert 3/76. Clay, brown to tan, with sand Sand, coarse, w/gravel, pea-size Sand, coarse Sand, medium to fine, clay, tan Sand, fine, clean silica	259'-260' 260'-266' 266'-290' 290'-300' Drill Hole Location: County, G Logged by 0'- 2' 2'- 11' 11'- 19' 19'- 27' 27'- 70' 70'-113'	Lignite, hard Clay, gray, with silt Clay, light-gray @ 290' lignite stringer Clay, gray, with silt T. D. 300' Cored interval 177.9'-187.9' Recovered: Lo 6' 177.9'-182' Lignite (hard) 182'-183.9' Clay, tan, very si No. 90. Elevation 365' Sec. 34, T. 16 N., R. 3 E. reene M. A. Stoyanov Sand, tan Clay, dark-tan, with sand Sand, gravel Clay, tan, with sand and gi Sand, tan Clay, light-gray, with sand @ 100' Lignite, approxima 3'' to 4'' stringer
09ged by 0'- 35' 35'- 68' 38'- 84' 38'- 92' 92'-92'2" 2'2"- 107' 07'-114' 14'-120' 20'-130' 30'-136' 38'-140' 40'-154'	Clay, tan, with sand Clay, red to tan, with sand Clay, red to tan, with sand Clay, gray, with sand Clay, gray, with sand Lignite stringer, approximately 2" Clay, gray, with sand, thin lignite stringer @ 107" Clay, gray, with silt Clay, blue-green, with siltstone layer at 130" Clay, blue-green, with siltstone layer @ 136" Clay, blue-green to gray, with silt, @ 154" lignite, with wood fibers Clay, lignitic Clay, lignitic Clay, gray, with silt and silt-stone layer @ 192" Sand, very fine, with siltstone	Drill Hole Location: County, Ging Logged by: 0'- 28' 28'- 36' 36'- 50' 50'- 60' Drill Hole Location: County, Ging Logged by: 0'- 5' 5'- 12' 12'- 20' 20'- 50' 50'- 60' 60'- 70'	NE%, Sec. 32, T. 16 N., R. 4 E. reene : M. Howard 3/76. Clay, dark-tan, with iron concretions Clay, light-tan, with iron concretions Coarse sand and pea gravel Coarse sand and pea gravel Coarse sand and pea gravel and Hole abandoned at 60' - could not get past base of gravel at 50' No. 88. Elevation 395' NE%, Sec. 29, T. 16 N., R. 4 E. reene D. W. Lumbert 3/76. Clay, brown to tan, with sand Sand, coarse, w/gravel, pea-size Sand, medium to fine, clay, tan Sand, fine, clean silica Sand, fine, clean silica	259'-260' 260'-266' 266'-290' 290'-300' Drill Hole Location: County, G Logged by 0'- 2' 2'- 11' 11'- 19' 19'- 27' 27'- 70' 70'-113'	Lignite, hard Clay, gray, with silt Clay, light-gray @ 290' lignite stringer Clay, gray, with silt T. D. 300' Cored interval 177.9'-187.9' Recovered: Lo 6' 177.9'-182' Lignite (hard) 182'-183.9' Clay, tan, very si No. 90. Elevation 365' Sec. 34, T. 16 N., R. 3 E. reene : M. A. Stoyanov Sand, tan Clay, dark-tan, with sand Sand, gravel Clay, tan, with sand and grand, tan Clay, light-gray, with sand @ 100' Lignite, approxima 3'' to 4'' stringer '' @ 113' lignite, approxima 3'' to 4'' stringer
ogged by 0'- 35' 35'- 68' 68'- 84' 88'- 89' 89'- 92' 92'-92'2" 2'2"- 107' 07'-114' 14'-120' 20'-130' 30'-136' 36'-138' 38'-140' 40'-154'	Clay, tan, with sand Clay, red to tan, with sand Clay, gray, with sand Clay, gray, with sand Clay, dark-gray, with sand Lignite stringer, approximately 2" Clay, gray, with sand, thin lignite stringer @ 107' Clay, gray, with silt Clay, blue-green, with silt Sand, very fine, with siltstone layer at 130' Clay, blue-green, with siltstone layer @ 136' Clay, blue-green to gray, with silt, @ 154' lignite, with wood fibers Clay, light-gray, with silt Clay, gray, with silt Clay, gray, with silt Clay, gray, with silt Sand, very fine, with siltstone layer @ 192' Sand, very fine, with siltstone layer @ 198'	Drill Hole I Logged by 0'- 28' 28'- 36' 36'- 50' 50'- 60' Drill Hole I Location: County, Gi Logged by: 0'- 5' 5'- 12' 12'- 20' 20'- 50' 50'- 60' 60'- 70' 70'- 80'	NE%, Sec. 32, T. 16 N., R. 4 E. reene M. Howard 3/76. Clay, dark-tan, with iron concretions Clay, light-tan, with iron concretions Coarse sand and pea gravel Coarse sand Hole abandoned at 60' - could not get past base of gravel at 50' No. 88. Elevation 395' NE%, Sec. 29, T. 16 N., R. 4 E. reene D. W. Lumbert 3/76. Clay, brown to tan, with sand Sand, coarse, w/gravel, pea-size Sand, coarse Sand, medium to fine, clay, tan Sand, fine, clean silica Sand, fine, clean silica Sand, fine, clean silica	259'.260' 260'.266' 266'.290' 290'.300' Drill Hole Location: County, G Logged by 0'. 2' 2'. 11' 11'. 19' 19'. 27' 27'. 70' 70'113'	Lignite, hard Clay, gray, with silt Clay, light-gray © 290' lignite stringer Clay, gray, with silt T. D. 300' Cored interval 177.9'-187.9' Recovered: Lo 6' 177.9'-182' Lignite (hard) 182'-183.9' Clay, tan, very si No. 90. Elevation 365' Sec. 34, T. 16 N., R. 3 E. reene M. A. Stoyanov Sand, tan Clay, dark-tan, with sand Sand, gravel Clay, tan, with sand and gi Sand, tan Clay, light-gray, with sand © 100' Lignite, approxima 3' to 4'' stringer '' @ 113' lignite, approxima 2'' to 3'' stringer
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ogged by 0'- 35' 35'- 68' 88'- 88' 89'- 92' 92'-92'2'' 2'2"- 107' 07'-114' 14'-120' 20'-130' 30'-136' 38'-140' 40'-154' 77'-192'	Clay, tan, with sand Clay, red to tan, with sand Gravel Clay, gray, with sand Clay, gray, with sand Clay, dark-gray, with sand Lignite stringer, approximately 2" Clay, gray, with sand, thin lignite stringer @ 107" Clay, gray, with silt Clay, blue-green, with silt Sand, very fine, with siltstone layer @ 136" Clay, blue-green, with siltstone layer @ 136' Clay, blue-green to gray, with silt, @ 154" lignitic Clay, blue-green to gray, with silt, @ 154" lignite, with wood fibers Clay, light-gray, with silt Clay, gray, with silt and silt-stone layer @ 192' Sand, very fine, with siltstone layer @ 198" T. D.: 200"	Drill Hole Location: County, Ging Solution: County, Ging	NE%, Sec. 32, T. 16 N., R. 4 E. reene : M. Howard 3/76. Clay, dark-tan, with iron concretions Clay, light-tan, with iron concretions Coarse sand and pea gravel Coarse sand and pea gravel Coarse sand and pea gravel and to get past base of gravel at 50' No. 88. Elevation 395' NE%, Sec. 29, T. 16 N., R. 4 E. reene D. W. Lumbert 3/76. Clay, brown to tan, with sand Sand, coarse, w/gravel, pea-size Sand, medium to fine, clay, tan Sand, fine, clean silica	259'.260' 260'.266' 266'.290' 290'.300' Drill Hole Location: County, G Logged by 0'. 2' 2'. 11' 11'. 19' 19'. 27' 27'. 70' 70'113'	Lignite, hard Clay, gray, with silt Clay, light-gray @ 290' lignite stringer Clay, gray, with silt T. D. 300' Cored interval 177.9'-187.9' Recovered: Lo 6' 177.9'-182' Lignite (hard) 182'-183.9' Clay, tan, very si No. 90. Elevation 365' Sec. 34, T. 16 N., R. 3 E. reene : M. A. Stoyanov Sand, tan Clay, dark-tan, with sand Sand, gravel Clay, tan, with sand and gray, light-gray, with sand @ 100' Lignite, approxima 3" to 4" stringer " @ 113' lignite, approxima 2" to 3" stringer " (131' stringer " (219, dark-gray, with silt (8216' siltstone
09ged by 0'- 35' 85'- 68' 68'- 84' 89'- 92' 92'-92'2'' 2'2'- 107' 07'-114' 14'-120' 20'-130' 86'-136' 88'-140' 40'-154' 64'-177' 77'-192' 92'-200'	Clay, tan, with sand Clay, red to tan, with sand Clay, gray, with sand Clay, gray, with sand Clay, dark-gray, with sand Lignite stringer, approximately 2" Clay, gray, with sand, thin lignite stringer @ 107' Clay, gray, with silt Clay, blue-green, with silt Sand, very fine, with siltstone layer at 130' Clay, blue-green, with siltstone layer @ 136' Clay, blue-green to gray, with silt, @ 154' lignite, with wood fibers Clay, light-gray, with silt Clay, gray, with silt Clay, gray, with silt Clay, gray, with silt Sand, very fine, with siltstone layer @ 192' Sand, very fine, with siltstone layer @ 198'	Drill Hole Location: County, Ging Logged by: 28'- 36' 36'- 50' 50'- 60' Drill Hole Location: County, Ging Logged by: 12'- 20' 20'- 50' 50'- 60' 60'- 70' 70'- 80' 88'-100' 100'-108'	NE%, Sec. 32, T. 16 N., R. 4 E. reene : M. Howard 3/76. Clay, dark-tan, with iron concretions Clay, light-tan, with iron concretions Coarse sand and pea gravel Coarse sand and pea gravel Coarse sand and pea gravel at 50' No. 88. Elevation 395' NE%, Sec. 29, T. 16 N., R. 4 E. reene D. W. Lumbert 3/76. Clay, brown to tan, with sand Sand, coarse, w/gravel, pea-size Sand, medium to fine, clay, tan Sand, fine, clean silica	259'.260' 260'.266' 266'.290' 290'.300' Drill Hole Location: County, G Logged by 0'. 2' 2'. 11' 11'. 19' 19'. 27' 27'. 70' 70'113'	Lignite, hard Clay, gray, with silt Clay, light-gray © 290' lignite stringer Clay, gray, with silt T. D. 300' Cored interval 177.9'-187.9' Recovered: Lo 6' 177.9'-182' Lignite (hard) 182'-183.9' Clay, tan, very si No. 90. Elevation 365' Sec. 34, T. 16 N., R. 3 E. reene M. A. Stoyanov Sand, tan Clay, dark-tan, with sand Sand, gravel Clay, light-gray, with sand © 100' Lignite, approxima 3' to 4'' stringer '' @ 113' lignite, approxima 2'' to 3'' stringer 2'' to 3'' stringer 3' Clay, dark-gray, with silt © 216' siltstone T. D 216', unable to penet
ogged by 0'- 35' 35'- 68' 38'- 68' 38'- 89' 39'- 92' 92'-92'2" 2'2"- 107' 07'-114' 14'-120' 20'-130' 30'-136' 38'-140' 40'-154' 54'-177' 77'-192' 92'-200'	Clay, tan, with sand Clay, red to tan, with sand Clay, red to tan, with sand Clay, gray, with sand Clay, gray, with sand Lignite stringer, approximately 2" Clay, gray, with sand, thin lignite stringer @ 107' Clay, gray, with silt Clay, blue-green, with silt Sand, very fine, with siltstone layer at 130' Clay, blue-green, with siltstone layer @ 136' Clay, blue-green to gray, with silt, @ 154' lignite, with wood fibers Clay, light-gray, with silt Clay, gray, with silt Clay, gray, with silt Clay, gray, with silt and silt-stone layer @ 192' Sand, very fine, with siltstone layer @ 198' T. D.: 200' No. 84. Elevation 420' Sec. 6, T. 15 N., R. 4 E.	Drill Hole Location: County, Ging Logged by Drill Hole Location: County, Ging Logged by: 0'- 5'- 12'- 20'- 20'- 50'- 60'- 60'- 60'- 60'- 70'- 70'- 80'- 88'- 88'- 100'- 108'- 108'- 112'- 12'- 12'- 108'- 108'- 112'- 1	NE%, Sec. 32, T. 16 N., R. 4 E. reene M. Howard 3/76. Clay, dark-tan, with iron concretions Clay, light-tan, with iron concretions Coarse sand and pea gravel Coarse sand Hole abandoned at 60' - could not get past base of gravel at 50' No. 88. Elevation 395' NE%, Sec. 29, T. 16 N., R. 4 E. reene D. W. Lumbert 3/76. Clay, brown to tan, with sand Sand, coarse, w/gravel, pea-size Sand, coarse Sand, medium to fine, clay, tan Sand, fine, clean silica Clay, light-brown, with silt	259'.260' 260'.266' 266'.290' 290'.300' Drill Hole Location: County, G Logged by 0'. 2' 2'. 11' 11'. 19' 19'. 27' 27'. 70' 70'113'	Lignite, hard Clay, gray, with silt Clay, light-gray @ 290' lignite stringer Clay, gray, with silt T. D. 300' Cored interval 177.9'-187.9' Recovered: Lo 6' 177.9'-182' Lignite (hard) 182'-183.9' Clay, tan, very si No. 90. Elevation 365' Sec. 34, T. 16 N., R. 3 E. reene : M. A. Stoyanov Sand, tan Clay, dark-tan, with sand Sand, gravel Clay, tan, with sand and gray, light-gray, with sand @ 100' Lignite, approxima 3" to 4" stringer " @ 113' lignite, approxima 2" to 3" stringer " (131' stringer " (219, dark-gray, with silt (8216' siltstone
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ogged by 0'- 35' 35'- 68' 68'- 68' 68'- 84' 89'- 92' 92'-92'2" 2'2"- 107' 07'-114' 14'-120' 20'-130' 30'-136' 36'-138' 38'-140' 40'-154' 07'-192' 02'-200' rill Hole focation: county, Crogged by:	Clay, tan, with sand Clay, red to tan, with sand Gravel Clay, gray, with sand Clay, gray, with sand Lignite stringer, approximately 2" Clay, gray, with sand, thin lignite stringer @ 107' Clay, gray, with silt Clay, blue-green, with silt Sand, very fine, with siltstone layer at 130' Clay, blue-green, with siltstone layer @ 136' Clay, blue-green to gray, with silt, @ 154' lignite, with wood fibers Clay, light-gray, with silt Clay, gray, with silt and silt-stone layer @ 192' Sand, very fine, with siltstone layer @ 198' T. D.: 200' No. 84. Elevation 420' Sec. 6, T. 15 N., R. 4 E. aighead D. W. Lumbert 3/76.	Drill Hole Location: County, Grant G	NE%, Sec. 32, T. 16 N., R. 4 E. reene M. Howard 3/76. Clay, dark-tan, with iron concretions Clay, light-tan, with iron concretions Coarse sand and pea gravel Coarse sand Hole abandoned at 60' - could not get past base of gravel at 50' No. 88. Elevation 395' NE%, Sec. 29, T. 16 N., R. 4 E. reene D. W. Lumbert 3/76. Clay, brown to tan, with sand Sand, coarse, w/gravel, pea-size Sand, coarse Sand, medium to fine, clay, tan Sand, fine, clean silica Clay, light-brown, with silt	259'.260' 260'.266' 266'.290' 290'.300' Drill Hole Location: County, G Logged by 0'. 2' 2'. 11' 11'. 19' 19'. 27' 27'. 70' 70'.113' 113'.113'3 113'3''.216	Lignite, hard Clay, gray, with silt Clay, light-gray © 290' lignite stringer Clay, gray, with silt T. D. 300' Cored interval 177.9'-187.9' Recovered: Lo 6' 177.9'-182' Lignite (hard) 182'-183.9' Clay, tan, very si No. 90. Elevation 365' Sec. 34, T. 16 N., R. 3 E. reene M. A. Stoyanov Sand, tan Clay, dark-tan, with sand Sand, gravel Clay, dark-tan, with sand and gi Sand, tan Clay, light-gray, with sand © 100' Lignite, approximal 3' to 4'' stringer '' @ 113' lignite, approximal 2'' to 3'' stringer '' (2 16', siltstone T. D 216', unable to penet Unable to penetrate No. 91. Elevation 448'
ogged by 0'. 35'. 68'. 68'. 84'. 89'. 92'. 92'. 107'. 07'-114'. 120'. 20'-130'. 30'-136'. 38'. 140'. 40'-154'. 54'-177'. 77'-192'. 92'-200'. rill Hole footation: ounty, Crogged by: 0'- 20'.	Clay, tan, with sand Clay, red to tan, with sand Gravel Clay, gray, with sand Clay, gray, with sand Clay, dark-gray, with sand Lignite stringer, approximately 2" Clay, gray, with sand, thin lignite stringer @ 107" Clay, gray, with silt Clay, blue-green, with silt Sand, very fine, with siltstone layer at 130" Clay, blue-green, with siltstone layer @ 136" Clay, blue-green to gray, with silt, @ 154" lignite, with wood fibers Clay, lignitic Clay, gray, with silt stone layer @ 198" T. D.: 200' No. 84. Elevation 420' Sec. 6, T. 15 N., R. 4 E. aighead D. W. Lumbert 3/76. Clay, red with sand	Drill Hole Location: County, Grant G	NE%, Sec. 32, T. 16 N., R. 4 E. reene M. Howard 3/76. Clay, dark-tan, with iron concretions Clay, light-tan, with iron concretions Coarse sand and pea gravel Coarse sand Hole abandoned at 60' - could not get past base of gravel at 50' No. 88. Elevation 395' NE%, Sec. 29, T. 16 N., R. 4 E. reene D. W. Lumbert 3/76. Clay, brown to tan, with sand Sand, coarse, w/gravel, pea-size Sand, coarse Sand, medium to fine, clay, tan Sand, fine, clean silica Clay, light-brown, with silt Lignite Clay, light-brown, with silt	259'-260' 260'-266' 266'-290' 290'-300' Drill Hole Location: County, G Logged by 0'- 2' 2'- 11' 11'- 19' 19'- 27' 27'- 70' 70'-113' 113'-113'3 113'3''-216 Drill Hole I Location:	Lignite, hard Clay, gray, with silt Clay, light-gray @ 290' lignite stringer Clay, gray, with silt T. D. 300' Cored interval 177.9'-187.9' Recovered: Lo 6' 177.9'-182' Lignite (hard) 182'-183.9' Clay, tan, very si No. 90. Elevation 365' Sec. 34, T. 16 N., R. 3 E. reene M. A. Stoyanov Sand, tan Clay, dark-tan, with sand Sand, gravel Clay, tan, with sand and gi Sand, tan Clay, light-gray, with sand © 100' Lignite, approxima 3'' to 4'' stringer '' @ 113' lignite, approxima 2'' to 3'' stringer '' 10 3'' stringer '' Clay, dark-gray, with silt @ 216' siltstone T. D. 216', unable to penet Unable to penetrate No. 91. Elevation 448' Sec. 32, T. 16 N., R. 4 E.
ogged by 0'- 35' 35'- 68' 68'- 84' 89'- 92' 92'-92'2'' 2'2'- 107' 07'-114' 14'-120' 20'-130' 30'-136' 38'-140' 40'-154' 64'-177' 77'-192' 92'-200' rill Hole flocation: county, Cr county	Clay, tan, with sand Clay, red to tan, with sand Gravel Clay, gray, with sand Clay, dark-gray, with sand Lignite stringer, approximately 2" Clay, gray, with sand, thin lignite stringer @ 107" Clay, gray, with silt Clay, blue-green, with silt Sand, very fine, with siltstone layer at 130" Clay, blue-green, with siltstone layer @ 136" Clay, blue-green to gray, with silt, @ 154" lignite, with wood fibers Clay, light-gray, with silt and siltstone layer @ 192" Sand, very fine, with siltstone layer @ 193" T. D.: 200" No. 84. Elevation 420" Sec. 6, T. 15 N., R. 4 E. aighead D. W. Lumbert 3/76. Clay, red with sand Gravel, with clay, red, with sand	Drill Hole I Logged by 0'- 28' 28'- 36' 36'- 50' 50'- 60' Drill Hole I Location: County, Gi Logged by 0'- 5' 5'- 12' 12'- 20' 20'- 50' 50'- 60' 80'- 88' 88'-100' 100'-108' 108'-112' 112'-113' 113'-120'	NE%, Sec. 32, T. 16 N., R. 4 E. reene M. Howard 3/76. Clay, dark-tan, with iron concretions Clay, light-tan, with iron concretions Coarse sand and pea gravel Coarse sand Hole abandoned at 60' - could not get past base of gravel at 50' No. 88. Elevation 395' NE%, Sec. 29, T. 16 N., R. 4 E. reene D. W. Lumbert 3/76. Clay, brown to tan, with sand Sand, coarse, w/gravel, pea-size Sand, coarse, w/gravel, pea-size Sand, fine, clean silica Clay, light-brown, with silt Lignite Clay, light-brown, with silt T. D.: 120' No. 89. Elevation 360'	259'-260' 260'-266' 266'-290' 290'-300' Drill Hole Location: County, G Logged by 0'- 2' 2'- 11' 11'- 19' 19'- 27' 27'- 70' 70'-113' Drill Hole Location: County, Gi	Lignite, hard Clay, gray, with silt Clay, light-gray @ 290' lignite stringer Clay, gray, with silt T. D. 300' Cored interval 177.9'-187.9' Recovered: Lo 6' 177.9'-182' Lignite (hard) 182'-183.9' Clay, tan, very si No. 90. Elevation 365' Sec. 34, T. 16 N., R. 3 E. reene M. A. Stoyanov Sand, tan Clay, dark-tan, with sand Sand, gravel Clay, tan, with sand and gi Sand, tan Clay, light-gray, with sand @ 100' Lignite, approxima 3" to 4" stringer " @ 113' lignite, approxima 3" to 3" stringer " 0 113' lignite, approxima 3" to 3" stringer " Clay, dark-gray, with silt @ 216' siltstone T. D 216', unable to penet Unable to penetrate No. 91. Elevation 448' Sec. 32, T. 16 N., R. 4 E. eene
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ogged by 0'- 35'- 68'- 68'- 68'- 84'- 89'- 89'- 92'- 92'-92'2'' 2'2'- 107' 07'-114'- 120'-130' 30'-136' 36'-138' 38'-140' 40'-154' 54'-177' 77'-192' 92'-200' rill Hole focation: ounty, Crogged by: 0'- 20' 52'- 68' 58'- 94' 94'- 98'	Clay, tan, with sand Clay, red to tan, with sand Gravel Clay, gray, with sand Clay, gray, with sand Lignite stringer, approximately 2" Clay, gray, with sand, thin lignite stringer @ 107" Clay, gray, with silt Clay, blue-green, with silt Sand, very fine, with siltstone layer at 130" Clay, blue-green, with siltstone layer @ 136" Clay, blue-green to gray, with silt, @ 154" lignite, with wood fibers Clay, light-gray, with silt and siltstone layer @ 192" Sand, very fine, with siltstone layer @ 192" Sand, very fine, with siltstone layer @ 192" Sand, very fine, with siltstone layer @ 198" T. D.: 200" No. 84. Elevation 420" Sec. 6, T. 15 N., R. 4 E. aighead D. W. Lumbert 3/76. Clay, red with sand Gravel, with clay, red, with sand Sand, coarse, clay, red to tan Clay, light-gray to tan, with sand Clay, light-gray to tan, with sand	Drill Hole Logged by 0'- 28' 28'- 36' 36'- 50' 50'- 60' Drill Hole Location: County, Gr Logged by: 0'- 5' 5'- 12' 12'- 20' 20'- 50' 60'- 70' 70'- 80' 88'-100' 100'-108' 108'-112' 112'-113' 113'-120' Drill Hole Location: County, Gr Logged by:	NE%, Sec. 32, T. 16 N., R. 4 E. reene M. Howard 3/76. Clay, dark-tan, with iron concretions Clay, light-tan, with iron concretions Coarse sand and pea gravel Coarse sand Hole abandoned at 60' - could not get past base of gravel at 50' No. 88. Elevation 395' NE%, Sec. 29, T. 16 N., R. 4 E. reene D. W. Lumbert 3/76. Clay, brown to tan, with sand Sand, coarse, w/gravel, pea-size Sand, coarse, w/gravel, pea-size Sand, coarse, medium to fine, clay, tan Sand, fine, clean silica Sand, fine, clean silica Sand, fine, clean silica Sand, fine, clean silica Clay, light-brown, with silt Lignite Clay, light-brown, with silt Lignite Clay, light-brown, with silt T. D.: 120' No. 89. Elevation 360' Sec. 32, T. 16 N., R. 4 E. seene M. A. Stoyanov 4/76.	259'-260' 260'-266' 266'-290' 290'-300' Drill Hole Location: County, G Logged by 0'- 2' 2'- 11' 11'- 19' 19'- 27' 27'- 70' -70'-113' 113'-113'3 113'3''-216 Drill Hole Location: County, G Logged by: 0'- 21' 21'- 44'	Lignite, hard Clay, gray, with silt Clay, light-gray @ 290' lignite stringer Clay, gray, with silt T. D. 300' Cored interval 177.9'-187.9' Recovered: Lo 6' 4 177.9'-182' Lignite (hard) 182'-183.9' Clay, tan, very sa No. 90. Elevation 365' Sec. 34, T. 16 N., R. 3 E. reene M. A. Stoyanov 4, Sand, tan Clay, dark-tan, with sand Sand, gravel Clay, dark-tan, with sand and gr Sand, tan Clay, light-gray, with sand @ 100' Lignite, approxima 3'' to 4'' stringer '' @ 113' lignite, approxima 2'' to 3'' stringer '' @ 113' lignite, approxima 2'' to 3'' stringer '' @ 16' siltstone T. D. 216', unable to penet Unable to penetrate No. 91. Elevation 448' Sec. 32, T. 16 N., R. 4 E. seene M. A. Stoyanov 4/ Clay, dark-tan, with sand Sand and gravel, coarse

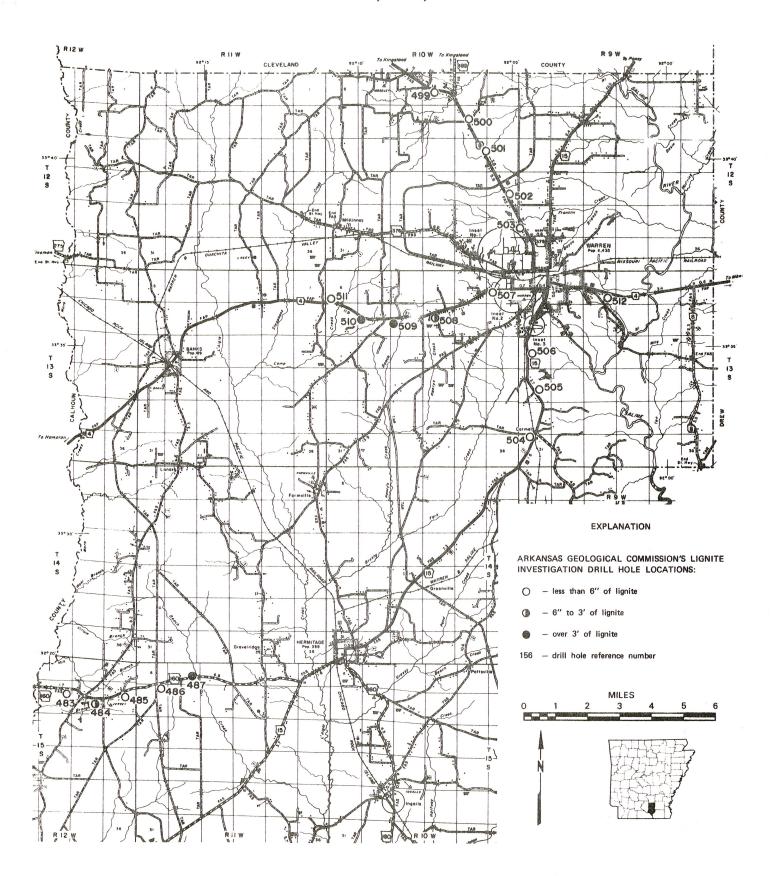
Drill Hole No. 92. Elevation Location: County Logged by:	285'-287' Lignite, with wood fibers 287'-300' Clay, dark-gray, with sand T. D.: 300'	26'- 38' Gravel 38'- 50' Sand, coarse, with clay, tan 50'-100' Gravel, clay, tan, with gravel 100'-140' Sand, coarse, with clay, light-
Abandoned	Drill Hole No. 96. Elevation 355' Location: Sec. 9, T. 15 N., R. 4 E. County, Craighead	gray 140'-160' Sand, coarse, with clay, gray T. D.: 160'
Drill Hole No. 93. Elevation 428' Location: Sec. 35, T. 16 N., R. 3 E. County, Greene Logged by: D. W. Lumbert 4/76.	Logged by: M. A. Stoyanov 4/76. 0'- 32' Clay, red, very sandy 32'- 50' Sand, red, with clay 50'- 82' Sand, coarse	Drill Hole No. 101. Execution 372' Location: Sec. 20, T. 16 N., R. 4 E. County, Greene Logged by: D. W. Lumbert 5/76.
0'- 21' Clay, tan, with sand 21'- 27' Sand, with clay, tan	82'-117' Sand, coarse 117'-165' Clay, white, light-gray, tan, with sand	0'- 6' Clay, dark brown-tan, with and 6'- 22' Clay, gray, with sand
27'- 63' Gravel, with clay, red, with sand 63'- 68' Clay, red, with sand and gravel 68'- 71' Gravel 71'- 90' Clay, red, with sand, with layers	165'-200' Clay, brown, lignite traces with sand @198' lignite stringer 6'' 200'-230' Clay, light-tan, white, with	22'- 28' Gravel with large coarse sand 28'- 34' Sand 34'- 38' Clay, gray, with sand 38'- 39' Siltstone
of gravel 90'-130' Sand, packed, with gravel, clay, red	packed sand 230'-240' Clay, light-tan, very sandy 240'-265' Clay, light-tan, white with in-	39'- 43' Clay, gray, with sand 43'- 53' Clay, pink to red, with layers
130'-195' Clay, dark-gray, with sand 195'-236' Sand, packed with clay 236'-236.5' Lignite	crease in sand 265'-267' Lignite, hard 267'-277' Clay, gray, with packed sand	of siltstone 53'- 57' Clay, gray, with sand 57'- 65' Sand, "packed" 65'- 74' Sand, clay, gray, "silty"
236.5'-249' Sand, packed with clay, dark- gray 249'-252' Clay, lignitic	277'-300' Clay, gray, white, with packed sand T. D.: 300'	74'-100' Sand, coarse, clay, gray 100'-120' Sand, coarse, clay, white-gray, with trace of lignite
252'-255' Lignite 255'-258' Clay, lignitic, with sand 258'-259' Siltstone	Drill Hole No. 97. Elevation 330' Location: Sec. 18, T. 15 N., R. 4 E.	120'-133' Sand, very fine, clay, gray to dark-gray 133'-136' Clay, with very black lignitic
259'-276' Clay, light-gray, with sand 276'-276.5' Siltstone T. D.: 276.5'	County, Craighead Logged by: M. A. Stoyanov 4/76.	material 136'-137' Lignite "hard" 137'-140' Clay, dark lignitic, silty
Drill Hole No. 94. Elevation 340'	0'- 2' Gravel, pea-sized, with sand 2'- 10' Sand, tan, with clay 10'- 60' Sand, light-gray, white, with	140'-150' Clay, gray, with sand 150'-160' Clay, dark gray, with sand 160'-172' Clay, gray, with silt
Location: Sec. 8, T. 15 N., R. 4 E. County, Craighead Logged by: D. W. Lumbert 4/76.	clay, white 60'- 70' Sand, light-tan, very fine 70'-150' Sand, light-tan, very fine	172'-215' Clay, gray and blue-green, with silt 215'-215.5' Lignite
0'- 20' Clay, tan, with sand 20'- 52' Clay, tan, with sand and gravel	T. D.: 150' Cave in; unable to drill	215.5'-260' Clay, blue-gray, with silt 260'-261' Lignite 261'-270' Clay, gray, with silt
52' 54' Gravel 54'- 94' Sand, coarse, clay, tan 94'-107' Sand, medium grained, clay, light-gray-tan	Drill Hole No. 98. Elevation 315' Location: Sec. 18, T. 15 N., R. 4 E. County Craighead	270'-280' Clay, dark-gray, with silt 280'-300' Clay, dark-gray, with silt, with trace of lignite
107'-140' Clay, gray, with sand 140'-160' Clay, gray, with sand - "packed"	Logged by: M. A. Stoyanov 5/76. O'- 24' Clay, dark-tan, with sand	T. D.: 300' Drill Hole No. 102. Elevation 440'
160'-190' Clay, dark-gray, with silt 190'-195' Clay, dark-gray, with sand 195'-196' Clay, dark-gray, with silt 196'-197' Lignite	24'- 49' Sand, coarse 49'-200' Sand, fine, "packed" 200'-245' Sand, coarse	Location: Sec. 2, T. 15 N., R. 4 E. County, Craighead Logged by: M. A. Stoyanov 5/76.
197'-232' Clay, dark-gray, blue-green, with silt; @ 223' siltstone 2'' layer 232'-233' Lignite	T. D.: 245 Drill Hole No. 99. Elevation 385'	0'- 6' Clay, tan, light-gray, with sand 6'- 11' Gravel, tan, with sand
233'-241' Clay, blue-green, dark-brown, with silt @ 241' siltstone layer	Location: Sec. 31, T. 16 N., R. 4 E. County, Greene Logged by: D. W. Lumbert 5/76.	11'- 26' Clay, gray 26'- 71' Clay, gray, with sand 71'- 96' Clay, gray, dark, with silt
241'-275' Clay, blue-green, dark-tan, with sand 275'-287' Clay, dark-tan, brown, with	0'- 18' Clay, red, with sand 18'- 36' Gravel, clay, red, with sand	96'-102' Clay, gray, with increase of silt 102'-175' Sand, gray, fine 175'-195' Sand, coarse
sand 287'-289' Lignite 289'-300' Clay, dark-tan, brown, with	36'-100' Sand, clay, red 100'-190' Sand, large, clay, tan, with gravel 190'-200' Sand, large, clay, light-gray	195'-200' Clay, light-gray, with silt 200'-240' Clay, light-gray, with sand 240'-247' Clay, light-gray, with lignite
sand T. D.: 300'	200'-215' Sand, compacted, clay, light- gray to white layers	stringer 247'-263' Clay, light-gray, with silt @ 263' lignite, approximately
Drill Hole No. 95. Elevation 440' Location: Sec. 3, T. 15 N., R. 3 E.	215'-224' Clay, light-gray, with sand 224'-240' Clay, dark-gray, with sand 240'-248' Clay, dark-gray, trace of lignite with sand	6" 263'-300' Clay, light-gray, with silt T. D.: 300'
County, Craighead Logged by: M. A. Stoyanov 4/76.	248'-250' Lignite, with clay T. D.: 250'	Drill Hole No. 103 and 103A. Elevation 340'
0'- 26' Clay, tan, very sandy 26'- 77' Clay, red, tan, with pea-size gravel	Drill Hole No. 100. Elevation 410' Location: Sec. 19, T. 16 N., R. 4 E. County, Greene	Location: Sec. 12, T. 15 N., R. 3 E. County, Craighead Logged by: D. W. Lumbert 5/76.
77'-100' Clay, tan, sandy 100'-175' Clay, light-tan, white, with sand, coarse	Logged by: D. W. Lumbert 5/76. 0'- 10' Clay, red and tan, with 50%	0'- 11' Clay, tan, sandy
175'-278' Clay, dark-gray, very sandy, white 278'-285' Clay, dark-gray, with sand	sand 10'- 20' Sand, with tan clay layers 20'- 26' Sand, medium-size, with gravel	11'- 21' Clay, tan and gray, sandy with gravel 21'- 32' Sand, coarse, and gravel T. D.: 32'; abandoned location
		D OZ , abandoned location

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103-A.		8'- 35'	Tan sand		@ 254' lignite, hard, 9"
		35'- 95'	Tan sand w/white silt, clay seams	255'-266'	Sand, tan, w/stringer of gray clay
0'- 16'	Clay, tan, sandy	95'-100'	Sand, coarse, iron-stained, lost		@ 265' lignite, hard, 3"
16'- 70'	Sand and gravel		circulation	266'-286'	Clay, gray, with sand stringers
	Abandoned location		T. D.: 100'		@285' Lignite, hard, 3"
	T. D.: 70'	D	N 400	286′-300′	Clay, green & gray interlayered
Drill Hole	No. 104. Elevation 385'	Drill Hole	No. 108. Elevation 295'		T. D.: 300'
l ocation:	Sec. 16, T. 15 N., R. 4 E.	Country C	SE¼, Sec. 17, T. 15 N., R. 5 E.	D	N. 440
County, C		County, C			No. 113. El. **ion 295'
	: D. W. Lumbert 5/76.	Logged by	: J. M. Howard 5/76.		SE¼, Sec. 35, . 15 N., R. 3 E.
	. 5. W. Edinbert 3/76.	0'- 31'	Tan silt, clay, with minor sand	County, C	
0'- 10'	Clay, red-tan, with sand	31'- 70'	Gray sand, with clay	rogged by	: J. M. Howard 6/76.
10'- 20'	Clay, tan, with sand,	70'- 79'	Dark gray clay, with sand	0'- 16'	Clay, tan, with silt
20'- 21'	Gravel		@79' lignite 2''	16'- 27'	Clay, light-gray
	@ 19.5 gravel	79'-100'	Gray sand, with minor, thin	27'- 30'	Sand, Iron-stained, with silt
21'- 36'	Sand, coarse, clay, tan		stringers of lignite	30'- 49'	Clay, tan, with gravel
36'- 38'	Clay, yellow, with sand	100'-138'		49'- 70'	Sand, tan, coarse
38'- 39'	Clay, tan-gray, with sand	138′-138½	'lignite	70'- 94'	Sand, tan, coarse with gravel
39'- 58'	Clay, gray, with silt	138½′-140	' Gray sand, with clay, thin pink	94'- 97'	Clay, brown
58'- 58.2 58.2'- 67'		4.401.0001	layers of silt clay		@ 96' lignite, hard, 6''
30.2 - 07	Clay, gray, with silt @ 67' siderite 4''	140′-300′	Gray sand, medium to coarse,	97′-130′	Sand, gray, fine
67'- 85'	Clay, gray, as above		some hard packed layers of sand	400.400.	@106½' lignite, hard, 18''
0, 00	@ 85' lignite stringer		T. D.: 300'	130′-135′	Sand, gray, very coarse
85'- 99'	Clay, gray, silty	Drill Hole	No. 109. Elevation 290'	135′-300′	Clay, gray, with sand with
99'-101'	Silt, tan to light brown, w/clay	Location	NE¼, Sec. 8, T. 15 N., R. 5 E.		siderite layers
101'-118'	Sand, fine, gray to white	County, C	raighead		T. D.: 300'
118′-170′	Sand, medium to coarse, quartz	Logged by	: J. M. Howard 5/76.	Drill Hole	No. 114. Elevation 315'
	and chert pebbles		5,70.	Location	NW14, Sec. 25, T. 15 N., R. 3 E.
170′-173′	Lignitic clay and lignite stringers	0'- 10'	Sand, tan, medium with small	County, C	
173′-195′	Sand and silt, lignitic in places		limonite concretions		: J. M. Howard 6/76.
195′-201′	Lignite stringers and lignitic clay	10'- 11'	Gravel		0,701
201′-223′	Sand,medium tan to light brown	11'- 25'	Gray clay with sand	0'- 45'	Clay, brown, with silt
223'-224' 224'-230'	Lignite	25'- 30'	Sand, gray, with gravel	45'- 65'	Clay, gray, interbedded with
230′-240′	Clay, brown, lignitic		T. D.: 30'		brown silt and brown organic
240'-293'	Clay, gray, with silt stringers Sand, gray, medium grained	Deill Hole	No. 110 Figure 2004		clay layers
293'-294.5	Lignite		No. 110. Elevation 300'	65'- 71'	Sand, coarse, with gravel
294.5'300'	Clay, gray	County, Ci	NW¼, Sec. 18, T. 15 N., R. 5 E.	71′-135′	Sand, medium tan
	T. D.: 300'		: J. M. Howard 5/76.	135′-140′	Sand, tan, medium to coarse,
		_oggod by	. 0. m. 110ward 5/70.		with gravel, scattered traces of
Drill Hole I	No. 105. Elevation 360'	0'- 19'	Clay, tan, with sand	140′-150′	lignite
Location:	Sec. 22, T. 15 N., R. 4 E.	19'- 27'	Gravel and sand	140′-150′	lignite Sand, tan, medium
Location: County, Cr	Sec. 22, T. 15 N., R. 4 E. aighead		Gravel and sand Sand, tan, medium to fine-	140′-150′	lignite
Location: County, Cr	Sec. 22, T. 15 N., R. 4 E.	19'- 27'	Gravel and sand Sand, tan, medium to fine- grained	Drill Hole	lignite Sand, tan, medium T. D.: 150' No. 115. Elevation 330'
Location: County, Cr Logged by:	Sec. 22, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76.	19'- 27'	Gravel and sand Sand, tan, medium to fine-	Drill Hole Location:	lignite Sand, tan, medium T. D.: 150' No. 115. Elevation 330' SW¼, Sec. 19, T. 15 N., R. 4 E.
Location: County, Cr Logged by: 0'- 21'	Sec. 22, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan, with sand	19'- 27' 27'- 90'	Gravel and sand Sand, tan, medium to fine- grained T. D.: 90'	Drill Hole Location: County, Co	lignite Sand, tan, medium T. D.: 150' No. 115. Elevation 330' SW¼, Sec. 19, T. 15 N., R. 4 E. aighead
Location: County, Cr Logged by:	Sec. 22, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan, with sand Sand and gravel	19'- 27' 27'- 90'	Gravel and sand Sand, tan, medium to fine- grained T. D.: 90' No. 111. Elevation 380'	Drill Hole Location: County, Co	lignite Sand, tan, medium T. D.: 150' No. 115. Elevation 330' SW¼, Sec. 19, T. 15 N., R. 4 E.
Location: County, Cr Logged by: 0'- 21' 21'- 32'	Sec. 22, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan, with sand Sand and gravel Sand & gravel w/clay, tan, gray	19'- 27' 27'- 90' Drill Hole I Location:	Gravel and sand Sand, tan, medium to fine- grained T. D.: 90' No. 111. Elevation 380' SW'4, Sec. 3, T. 15 N., R. 4 E.	Drill Hole Location: County, Co Logged by	lignite Sand, tan, medium T. D.: 150' No. 115. Elevation 330' SW¼, Sec. 19, T. 15 N., R. 4 E. raighead J. M. Howard 6/76.
Location: County, Cr Logged by: 0'- 21' 21'- 32' 32'- 50' 50'-120'	Sec. 22, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan, with sand Sand and gravel Sand & gravel w/clay, tan, gray Sand, medium-grained, clay, tan-gray	19'- 27' 27'- 90' Drill Hole I Location: County, Cr	Gravel and sand Sand, tan, medium to fine- grained T. D.: 90' No. 111. Elevation 380' SW¼, Sec. 3, T. 15 N., R. 4 E. alghead	Drill Hole Location: County, Co Logged by	lignite Sand, tan, medium T. D.: 150' No. 115. Elevation 330' SW¼, Sec. 19, T. 15 N., R. 4 E. aighead J. M. Howard 6/76. Clay, tan, with silt
Location: County, Cr Logged by: 0'- 21' 21'- 32' 32'- 50' 50'-120'	Sec. 22, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan, with sand Sand and gravel Sand & gravel w/clay, tan, gray Sand, medium-grained, clay,	19'- 27' 27'- 90' Drill Hole I Location: County, Cr	Gravel and sand Sand, tan, medium to fine- grained T. D.: 90' No. 111. Elevation 380' SW'4, Sec. 3, T. 15 N., R. 4 E.	Drill Hole Location: County, Co Logged by 0'- 14' 14'- 30'	lignite Sand, tan, medium T. D.: 150' No. 115. Elevation 330' SW¼, Sec. 19, T. 15 N., R. 4 E. aighead J. M. Howard 6/76. Clay, tan, with silt Sand, fine, w/red to white clay
Location: County, Cr Logged by: 0'- 21' 21'- 32' 32'- 50' 50'-120' 120'-170'	Sec. 22, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan, with sand Sand and gravel Sand & gravel w/clay, tan, gray Sand, medium-grained, clay, tan-gray Clay, light gray, with sand Clay, gray, with sand	19'- 27' 27'- 90' Drill Hole I Location: County, Cr Logged by	Gravel and sand Sand, tan, medium to fine- grained T. D.: 90' No. 111. Elevation 380' SW¼, Sec. 3, T. 15 N., R. 4 E. alghead	Drill Hole Location: County, Ci Logged by 0'- 14' 14'- 30' 30'- 40'	lignite Sand, tan, medium T. D.: 150' No. 115. Elevation 330' SW¼, Sec. 19, T. 15 N., R. 4 E. raighead: J. M. Howard 6/76. Clay, tan, with silt Sand, fine, w/red to white clay Clay, light- gray, with fine sand
Location: County, Cr Logged by: 0'- 21' 21'- 32' 32'- 50' 50'-120' 120'-170' 170'-215' 215'-230'	Sec. 22, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan, with sand Sand and gravel Sand & gravel w/clay, tan, gray Sand, medium-grained, clay, tan-gray Clay, light gray, with sand Clay, gray, with sand Sand, "packed", clay, gray	19'- 27' 27'- 90' Drill Hole I Location: County, Cr Logged by	Gravel and sand Sand, tan, medium to fine- grained T. D.: 90' No. 111. Elevation 380' SW¼, Sec. 3, T. 15 N., R. 4 E. aighead I. J. M. Howard S/76.	Drill Hole Location: County, Co Logged by 0'- 14' 14'- 30'	lignite Sand, tan, medium T. D.: 150' No. 115. Elevation 330' SW¼, Sec. 19, T. 15 N., R. 4 E. aighead J. M. Howard 6/76. Clay, tan, with silt Sand, fine, w/red to white clay Clay, light- gray, with fine sand Sand, tan, medium, clean
Location: County, Cr Logged by: 0'- 21' 21'- 32' 32'- 50' 50'-120' 120'-170' 215'-230' 230'-233'	Sec. 22, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan, with sand Sand and gravel Sand & gravel w/clay, tan, gray Sand, medium-grained, clay, tan-gray Clay, light gray, with sand Clay, gray, with sand Sand, "packed", clay, gray Clay, lrown, with sand	19'- 27' 27'- 90' Drill Hole I Location: County, Cr Logged by	Gravel and sand Sand, tan, medium to fine- grained T. D.: 90' No. 111. Elevation 380' SW¼, Sec. 3, T. 15 N., R. 4 E. aighead J. M. Howard Sand, tan, with clay Sand, tan, and gravel Sand, medium to coarse grained,	Drill Hole Location: County, CI Logged by 0'- 14' 14'- 30' 30'- 40' 40'- 90'	lignite Sand, tan, medium T. D.: 150' No. 115. Elevation 330' SW¼, Sec. 19, T. 15 N., R. 4 E. aighead J. M. Howard 6/76. Clay, tan, with silt Sand, fine, w/red to white clay Clay, light- gray, with fine sand Sand, tan, medium, clean Sand, tan, coarse, with thin gray
Location: County, Cr Logged by: 21'- 32' 32'- 50' 50'-120' 120'-170' 170'-215' 213'-230' 233'-233'	Sec. 22, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan, with sand Sand and gravel Sand & gravel w/clay, tan, gray Sand, medium-grained, clay, tan-gray Clay, light gray, with sand Clay, gray, with sand Sand, ''packed'', clay, gray Clay, brown, with sand Lignite	19'- 27' 27'- 90' Drill Hole I Location: County, Cr Logged by 0'- 5' 5'- 22'	Gravel and sand Sand, tan, medium to fine- grained T. D.: 90' No. 111. Elevation 380' SW%, Sec. 3, T. 15 N., R. 4 E. raighead: J. M. Howard 5/76. Sand, tan, with clay Sand, tan, and gravel Sand, medium to coarse grained, clean, rounded to sub angular	Drill Hole Location: County, CI Logged by 0'- 14' 14'- 30' 30'- 40' 40'- 90'	lignite Sand, tan, medium T. D.: 150' No. 115. Elevation 330' SW¼, Sec. 19, T. 15 N., R. 4 E. raighead J. M. Howard 6/76. Clay, tan, with silt Sand, fine, w/red to white clay Clay, light- gray, with fine sand Sand, tan, medium, clean Sand, tan, coarse, with thin gray clay stringers
Location: County, Cr Logged by: 0'- 21' 21'- 32' 32'- 50' 50'-120' 120'-170' 170'-215' 215'-230' 230'-233' 233'-234'	Sec. 22, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan, with sand Sand and gravel Sand & gravel w/clay, tan, gray Sand, medium-grained, clay, tan-gray Clay, light gray, with sand Clay, gray, with sand Sand, "packed", clay, gray Clay, brown, with sand Lignite Clay, dark brown-gray, w/ sand	19'- 27' 27'- 90' Drill Hole I Location: County, Cr Logged by 0'- 5' 5'- 22'	Gravel and sand Sand, tan, medium to fine- grained T. D.: 90' No. 111. Elevation 380' SW¼, Sec. 3, T. 15 N., R. 4 E. raighead: J. M. Howard 5/76. Sand, tan, with clay Sand, tan, and gravel Sand, medium to coarse grained, clean, rounded to sub angular Sand, tan	Drill Hole Location: County, Cl Logged by 0'- 14' 14'- 30' 30'- 40' 40'- 90' 90'-103'	lignite Sand, tan, medium T. D.: 150' No. 115. Elevation 330' SW¼, Sec. 19, T. 15 N., R. 4 E. aighead J. M. Howard 6/76. Clay, tan, with silt Sand, fine, w/red to white clay Clay, light- gray, with fine sand Sand, tan, medium, clean Sand, tan, coarse, with thin gray
Location: County, Cr Logged by: 21'- 32' 32'- 50' 50'-120' 120'-170' 170'-215' 213'-230' 233'-233'	Sec. 22, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan, with sand Sand and gravel Sand & gravel w/clay, tan, gray Sand, medium-grained, clay, tan-gray Clay, light gray, with sand Clay, gray, with sand Clay, gray, with sand Clay, brown, with sand Lignite Clay, dark brown-gray, w/ sand Clay, dark brown-gray, w/ sand Clay, dark brown-gray, w/ sand	19'- 27' 27'- 90' Drill Hole I Location: County, Cr Logged by 0'- 5' 5'- 22'	Gravel and sand Sand, tan, medium to fine- grained T. D.: 90' No. 111. Elevation 380' SW¼, Sec. 3, T. 15 N., R. 4 E. aighead J. M. Howard Sand, tan, with clay Sand, tan, and gravel Sand, medium to coarse grained, clean, rounded to sub angular Sand, tine, gray, with few thin	Drill Hole Location: County, Ci Logged by 0'- 14' 14'- 30' 30'- 40' 40'- 90' 90'-103'	lignite Sand, tan, medium T. D.: 150' No. 115. Elevation 330' SW¼, Sec. 19, T. 15 N., R. 4 E. aighead J. M. Howard 6/76. Clay, tan, with silt Sand, fine, w/red to white clay Clay, light- gray, with fine sand Sand, tan, medium, clean Sand, tan, coarse, with thin gray clay stringers Sand, gray, fine to medium, clean Sand, gray, medium to coarse,
Location: County, Cr Logged by: 0'- 21' 21'- 32' 32'- 50' 50'-120' 120'-170' 170'-215' 215'-230' 230'-233' 233'-234'	Sec. 22, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan, with sand Sand and gravel Sand & gravel w/clay, tan, gray Sand, medium-grained, clay, tan-gray Clay, light gray, with sand Clay, gray, with sand Sand, "packed", clay, gray Clay, brown, with sand Lignite Clay, dark brown-gray, w/ sand Clay, dark brown-gray, with sand and trace of lignite	19'- 27' 27'- 90' Drill Hole I Location: County, Cr Logged by 0'- 5' 5'- 22' 22'-140' 140'-150'	Gravel and sand Sand, tan, medium to fine- grained T. D.: 90' No. 111. Elevation 380' SW%, Sec. 3, T. 15 N., R. 4 E. aighead J. M. Howard S/76. Sand, tan, with clay Sand, tan, and gravel Sand, medium to coarse grained, clean, rounded to sub angular Sand, tan Sand, fine, gray, with few thin stringers of clay, light-tan	Drill Hole Location: County, Ci Logged by 0'- 14' 14'- 30' 30'- 40' 40'- 90' 90'-103' 103'-140'	lignite Sand, tan, medium T. D.: 150' No. 115. Elevation 330' SW¼, Sec. 19, T. 15 N., R. 4 E. raighead: J. M. Howard 6/76. Clay, tan, with silt Sand, fine, w/red to white clay Clay, light- gray, with fine sand Sand, tan, coarse, with thin gray clay stringers Sand, gray, fine to medium, clean Sand, gray, medium to coarse, clean
Location: County, Cr Logged by: 0'- 21' 21'- 32' 32'- 50' 50'-120' 120'-170' 170'-215' 215'-230' 230'-233' 233'-234'	Sec. 22, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan, with sand Sand and gravel Sand & gravel w/clay, tan, gray Sand, medium-grained, clay, tan-gray Clay, light gray, with sand Clay, gray, with sand Clay, gray, with sand Clay, brown, with sand Lignite Clay, dark brown-gray, w/ sand Clay, dark brown-gray, w/ sand Clay, dark brown-gray, w/ sand	19'- 27' 27'- 90' Drill Hole I Location: County, Cr Logged by 0'- 5' 5'- 22'	Gravel and sand Sand, tan, medium to fine- grained T. D.: 90' No. 111. Elevation 380' SW%, Sec. 3, T. 15 N., R. 4 E. raighead: J. M. Howard 5/76. Sand, tan, with clay Sand, tan, and gravel Sand, medium to coarse grained, clean, rounded to sub angular Sand, tan Sand, fine, gray, with few thin stringers of clay, light-tan Clay, layers of light brown, in	Drill Hole Location: County, Cl Logged by 0'- 14' 14'- 30' 30'- 40' 40'- 90' 90'-103'	lignite Sand, tan, medium T. D.: 150' No. 115. Elevation 330' SW¼, Sec. 19, T. 15 N., R. 4 E. raighead J. M. Howard 6/76. Clay, tan, with silt Sand, fine, w/red to white clay Clay, light-gray, with fine sand Sand, tan, medium, clean Sand, tan, coarse, with thin gray clay stringers Sand, gray, fine to medium, clean Sand, gray, medium to coarse, clean Sand, gray, fine to medium, Sand, gray, fine to medium,
Location: County, Cr Logged by: 21'- 32' 32'- 50' 50'-120' 120'-170' 170'-215' 230'-233' 233'-234' 234'-240' 240'-300'	Sec. 22, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan, with sand Sand and gravel Sand & gravel w/clay, tan, gray Sand, medium-grained, clay, tan-gray Clay, light gray, with sand Clay, gray, with sand Sand, "packed", clay, gray Clay, brown, with sand Lignite Clay, dark brown-gray, w/ sand Clay, dark brown-gray, with sand and trace of lignite T. D.: 300"	19'- 27' 27'- 90' Drill Hole Location: County, Cr Logged by 0'- 5' 5'- 22' 22'-140' 140'-150'	Gravel and sand Sand, tan, medium to fine- grained T. D.: 90' No. 111. Elevation 380' SW'4, Sec. 3, T. 15 N., R. 4 E. aighead J. M. Howard 5/76. Sand, tan, with clay Sand, tan, and gravel Sand, medium to coarse grained, clean, rounded to sub angular Sand, tan Sand, tine, gray, with few thin stringers of clay, light-tan Clay, layers of light brown, in sand, fine	Drill Hole Location: County, Cr Logged by 0'- 14' 14'- 30' 30'- 40' 40'- 90' 90'-103' 103'-140' 140'-205' 205'-240'	lignite Sand, tan, medium T. D.: 150' No. 115. Elevation 330' SW¼, Sec. 19, T. 15 N., R. 4 E. aighead J. M. Howard 6/76. Clay, tan, with silt Sand, fine, w/red to white clay Clay, light- gray, with fine sand Sand, tan, medium, clean Sand, tan, coarse, with thin gray clay stringers Sand, gray, fine to medium, clean Sand, gray, medium to coarse, clean Sand, gray, fine to medium, clean Sand, gray, fine to medium, clean Sand, gray, fine to medium, clean
Location: County, Cr Logged by: 0'- 21' 21'- 32' 32'- 50' 50'-120' 170'-215' 215'-230' 233'-234' 234'-240' 240'-300'	Sec. 22, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan, with sand Sand and gravel Sand & gravel w/clay, tan, gray Sand, medium-grained, clay, tan-gray Clay, light gray, with sand Clay, gray, with sand Clay, gray, with sand Lignite Clay, brown, with sand Lignite Clay, dark brown-gray, w/ sand Clay, dark brown-gray, with sand and trace of lignite T. D.: 300'	19'- 27' 27'- 90' Drill Hole I Location: County, Cr Logged by 0'- 5' 5'- 22' 22'-140' 140'-150' 150'-249' 249'-250'/	Gravel and sand Sand, tan, medium to fine- grained T. D.: 90' No. 111. Elevation 380' SW%, Sec. 3, T. 15 N., R. 4 E. raighead: J. M. Howard 5/76. Sand, tan, with clay Sand, tan, and gravel Sand, medium to coarse grained, clean, rounded to sub angular Sand, tan Sand, fine, gray, with few thin stringers of clay, light-tan Clay, layers of light brown, in sand, fine Lignite, hard	Drill Hole Location: County, Ct Logged by 0'- 14' 14'- 30' 30'- 40' 40'- 90' 90'-103' 103'-140' 140'-205' 205'-240'	lignite Sand, tan, medium T. D.: 150' No. 115. Elevation 330' SW¼, Sec. 19, T. 15 N., R. 4 E. raighead: J. M. Howard 6/76. Clay, tan, with silt Sand, fine, w/red to white clay Clay, light- gray, with fine sand Sand, tan, medium, clean Sand, tan, coarse, with thin gray clay stringers Sand, gray, fine to medium, clean Sand, gray, medium to coarse, clean Sand, gray, fine to medium, clean Sand, gray, fine to medium, clean Cand, gray, fine to medium, clean Clay, gray
Location: County, Cr Logged by: 0'- 21' 21'- 32' 32'- 50' 50'-120' 120'-170' 120'-215' 215'-230' 230'-233' 234'-240' 240'-300' Drill Hole N Location:	Sec. 22, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan, with sand Sand and gravel Sand & gravel w/clay, tan, gray Sand, medium-grained, clay, tan-gray Clay, light gray, with sand Clay, gray, with sand Sand, "packed", clay, gray Clay, brown, with sand Lignite Clay, dark brown-gray, w/ sand Clay, dark brown-gray, with sand and trace of lignite T. D.: 300' Jo. 106. Elevation 378' Sec. 17, T. 15 N., R. 4 E.	19'- 27' 27'- 90' Drill Hole I Location: County, Cr Logged by 0'- 5' 5'- 22' 22'-140' 140'-150' 150'-249' 249'-250'/	Gravel and sand Sand, tan, medium to fine- grained T. D.: 90' No. 111. Elevation 380' SW%, Sec. 3, T. 15 N., R. 4 E. raighead: J. M. Howard 5/76. Sand, tan, with clay Sand, tan, and gravel Sand, medium to coarse grained, clean, rounded to sub angular Sand, tine, gray, with few thin stringers of clay, light-tan Clay, layers of light brown, in sand, fine 'Lignite, hard 'Sand, fine, with light-green clay 'Sand, fine, with light-green clay	Drill Hole Location: County, Ci Logged by 0'- 14' 14'- 30' 30'- 40' 40'- 90' 90'-103' 103'-140' 140'-205' 205'-240' 240'-243' 243'-255'	lignite Sand, tan, medium T. D.: 150' No. 115. Elevation 330' SW¼, Sec. 19, T. 15 N., R. 4 E. aighead: J. M. Howard 6/76. Clay, tan, with silt Sand, fine, w/red to white clay Clay, light- gray, with fine sand Sand, tan, medium, clean Sand, tan, coarse, with thin gray clay stringers Sand, gray, fine to medium, clean Sand, gray, medium to coarse, clean Sand, gray, fine to medium, clean Clay, gray Sand, gray, fine
Location: County, Cr Logged by: 0'- 21' 21'- 32' 32'- 50' 50'-120' 120'-170' 170'-215' 230'-233' 233'-234' 234'-240' 240'-300' Drill Hole N Location: County, Cr	Sec. 22, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan, with sand Sand and gravel Sand & gravel w/clay, tan, gray Sand, medium-grained, clay, tan-gray Clay, light gray, with sand Clay, gray, with sand Sand, "packed", clay, gray Clay, brown, with sand Lignite Clay, dark brown-gray, w/ sand Clay, dark brown-gray, with sand and trace of lignite T. D.: 300' No. 106. Elevation 378' Sec. 17, T. 15 N., R. 4 E. aighead	19'- 27' 27'- 90' Drill Hole Location: County, Cr Logged by 0'- 5' 5'- 22' 22'-140' 140'-150' 150'-249' 249'-250½ 250½'-260	Gravel and sand Sand, tan, medium to fine- grained T. D.: 90' No. 111. Elevation 380' SW¼, Sec. 3, T. 15 N., R. 4 E. aighead J. M. Howard 5/76. Sand, tan, with clay Sand, tan, and gravel Sand, medium to coarse grained, clean, rounded to sub angular Sand, tan Sand, tan Sand, tan Clay, layers of light brown, in sand, fine Clay, layers of light brown, in sand, fine Lignite, hard Sand, fine, with light-green clay stringers	Drill Hole Location: County, Ct Logged by 0'- 14' 14'- 30' 30'- 40' 40'- 90' 90'-103' 103'-140' 140'-205' 205'-240'	lignite Sand, tan, medium T. D.: 150' No. 115. Elevation 330' SW¼, Sec. 19, T. 15 N., R. 4 E. aighead J. M. Howard 6/76. Clay, tan, with silt Sand, fine, w/red to white clay Clay, light- gray, with fine sand Sand, tan, medium, clean Sand, tan, medium, clean Sand, gray, fine to medium, clean Sand, gray, fine to medium, clean Sand, gray, fine to medium, clean Clay, gray Sand, gray, fine to medium, clean Clay, gray Sand, gray, fine Clay, gray Sand, gray, fine Clay, gray Sand, gray, fine
Location: County, Cr Logged by: 0'- 21' 21'- 32' 32'- 50' 50'-120' 120'-170' 170'-215' 230'-233' 233'-234' 234'-240' 240'-300' Drill Hole N Location: County, Cr	Sec. 22, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan, with sand Sand and gravel Sand & gravel w/clay, tan, gray Sand, medium-grained, clay, tan-gray Clay, light gray, with sand Clay, gray, with sand Sand, "packed", clay, gray Clay, brown, with sand Lignite Clay, dark brown-gray, w/ sand Clay, dark brown-gray, with sand and trace of lignite T. D.: 300' Jo. 106. Elevation 378' Sec. 17, T. 15 N., R. 4 E.	19'- 27' 27'- 90' Drill Hole Location: County, Cr Logged by 0'- 5' 5'- 22' 22'-140' 140'-150' 150'-249' 249'-250½ 250½'-260	Gravel and sand Sand, tan, medium to fine- grained T. D.: 90' No. 111. Elevation 380' SW%, Sec. 3, T. 15 N., R. 4 E. aighead J. M. Howard Sand, tan, with clay Sand, tan, and gravel Sand, medium to coarse grained, clean, rounded to sub angular Sand, tan Sand, fine, gray, with few thin stringers of clay, light-tan Clay, layers of light brown, in sand, fine Lignite, hard Sand, fine, with light-green clay stringers Siderite layer, hard, 8" thick	Drill Hole Location: County, Ci Logged by 0'- 14' 14'- 30' 30'- 40' 40'- 90' 90'-103' 103'-140' 140'-205' 205'-240' 240'-243' 243'-255'	lignite Sand, tan, medium T. D.: 150' No. 115. Elevation 330' SW¼, Sec. 19, T. 15 N., R. 4 E. raighead: J. M. Howard 6/76. Clay, tan, with silt Sand, fine, w/red to white clay Clay, light- gray, with fine sand Sand, tan, coarse, with thin gray clay stringers Sand, gray, fine to medium, clean Sand, gray, fine to medium, clean Sand, gray, fine to medium, clean Clay, gray Sand, gray, fine Clay, gray Sand, gray, fine Clay, gray Sand, gray, fine Clay, gray with small shows of lignite - 2 separate 1" stringers
Location: County, Cr Logged by: 0'- 21' 21'- 32' 32'- 50' 50'-120' 120'-170' 215'-230' 230'-233' 233'-234' 240'-300' Drill Hole N Location: County, Cr Logged by:	Sec. 22, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan, with sand Sand and gravel Sand & gravel w/clay, tan, gray Sand, medium-grained, clay, tan-gray Clay, light gray, with sand Clay, gray, with sand Sand, "packed", clay, gray Clay, brown, with sand Lignite Clay, dark brown-gray, w/ sand Clay, dark brown-gray, with sand and trace of lignite T. D.: 300' No. 106. Elevation 378' Sec. 17, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76.	19'- 27' 27'- 90' Drill Hole Location: County, Cr Logged by 0'- 5' 5'- 22' 22'-140' 140'-150' 150'-249' 249'-250½ 250½'-260½ 260'-260½ 260½'-275 275'-277'	Gravel and sand Sand, tan, medium to fine- grained T. D.: 90' No. 111. Elevation 380' SW¼, Sec. 3, T. 15 N., R. 4 E. aighead J. M. Howard 5/76. Sand, tan, with clay Sand, tan, and gravel Sand, medium to coarse grained, clean, rounded to sub angular Sand, tan Sand, tan Sand, tan Clay, layers of light brown, in sand, fine Clay, layers of light brown, in sand, fine Lignite, hard Sand, fine, with light-green clay stringers	Drill Hole Location: County, Ci Logged by 0'- 14' 14'- 30' 30'- 40' 40'- 90' 90'-103' 103'-140' 140'-205' 205'-240' 240'-243' 243'-255' 255'-289'	lignite Sand, tan, medium T. D.: 150' No. 115. Elevation 330' SW¼, Sec. 19, T. 15 N., R. 4 E. aighead: J. M. Howard 6/76. Clay, tan, with silt Sand, fine, w/red to white clay Clay, light- gray, with fine sand Sand, tan, medium, clean Sand, tan, coarse, with thin gray clay stringers Sand, gray, fine to medium, clean Sand, gray, medium to coarse, clean Sand, gray, fine to medium, clean Clay, gray Sand, gray, fine to medium, clean Clay, gray Sand, gray, fine to medium, clean Clay, gray Sand, gray, fine Clay, gray Sand, gray, fine Clay, gray Sand, gray, fine Clay, gray with small shows of lignite - 2 separate 1" stringers @ 263' siderite, hard, 2"
Location: County, Cr Logged by: 0'- 21' 21'- 32' 32'- 50' 50'-120' 120'-170' 170'-215' 230'-233' 233'-234' 234'-240' 240'-300' Drill Hole N Location: County, Cr Logged by: 0'- 6'	Sec. 22, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan, with sand Sand and gravel Sand & gravel w/clay, tan, gray Sand, medium-grained, clay, tan-gray Clay, light gray, with sand Clay, gray, with sand Clay, gray, with sand Lignite Clay, dark brown-gray, w/ sand Clay, dark brown-gray, with sand and trace of lignite T. D.: 300' No. 106. Elevation 378' Sec. 17, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan-brown, with sand	19'- 27' 27'- 90' Drill Hole I Location: County, Cr Logged by 0'- 5' 5'- 22' 22'-140' 140'-150' 150'-249' 249'-250½ 250½'-260 260'-260½' 260½'-275	Gravel and sand Sand, tan, medium to fine- grained T. D.: 90' No. 111. Elevation 380' SW'4, Sec. 3, T. 15 N., R. 4 E. aighead J. M. Howard Sand, tan, with clay Sand, tan, with clay Sand, tan, and gravel Sand, medium to coarse grained, clean, rounded to sub angular Sand, tan Sand, tine, gray, with few thin stringers of clay, light-tan Clay, layers of light brown, in sand, fine Lignite, hard Sand, fine, with light-green clay stringers Siderite layer, hard, 8" thick Sand, fine Lignite, hard Sand, fine	Drill Hole Location: County, Cr Logged by 0'- 14' 14'- 30' 30'- 40' 40'- 90' 90'-103' 103'-140' 140'-205' 205'-240' 243'-255' 255'-289'	lignite Sand, tan, medium T. D.: 150' No. 115. Elevation 330' SW¼, Sec. 19, T. 15 N., R. 4 E. aighead J. M. Howard 6/76. Clay, tan, with silt Sand, fine, w/red to white clay Clay, light-gray, with fine sand Sand, tan, medium, clean Sand, tan, coarse, with thin gray clay stringers Sand, gray, fine to medium, clean Sand, gray, medium to coarse, clean Sand, gray, fine to medium, clean Clay, gray Sand, gray, fine to medium, clean Clay, gray Sand, gray, fine Clay, gray with small shows of lignite - 2 separate 1" stringers @ 263' siderite, hard, 2" Lignite, soft, with brown clay
Location: County, Cr Logged by: 0'- 21' 21'- 32' 32'- 50' 50'-120' 170'-215' 215'-230' 233'-234' 234'-240' 240'-300' Drill Hole N Location: County, Cr Logged by: 0'- 6' 6'- 14'	Sec. 22, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan, with sand Sand and gravel Sand & gravel w/clay, tan, gray Sand, medium-grained, clay, tan-gray Clay, light gray, with sand Clay, gray, with sand Sand, ''packed'', clay, gray Clay, brown, with sand Lignite Clay, dark brown-gray, w/ sand Clay, dark brown-gray, with sand and trace of lignite T. D.: 300' No. 106. Elevation 378' Sec. 17, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan-brown, with sand Gravel, coarse sand, w/clay, tan	19'- 27' 27'- 90' Drill Hole Location: County, Cr Logged by 0'- 5' 5'- 22' 22'-140' 140'-150' 150'-249' 249'-250½ 250½'-260½ 260'-260½ 260½'-275 275'-277'	Gravel and sand Sand, tan, medium to fine- grained T. D.: 90' No. 111. Elevation 380' SW%, Sec. 3, T. 15 N., R. 4 E. aighead J. M. Howard Sand, tan, with clay Sand, tan, with clay Sand, medium to coarse grained, clean, rounded to sub angular Sand, fine, gray, with few thin stringers of clay, light-tan Clay, layers of light brown, in sand, fine Lignite, hard Sand, fine Lignite layer, hard, 8" thick Sand, fine Lignite, hard Sand, fine Lignite, hard Sand, fine Lignite, hard Sand, fine @ 289 siderite layer, hard	Drill Hole Location: County, Ci Logged by 0'- 14' 14'- 30' 30'- 40' 40'- 90' 90'-103' 103'-140' 140'-205' 205'-240' 240'-243' 243'-255' 255'-289'	lignite Sand, tan, medium T. D.: 150' No. 115. Elevation 330' SW¼, Sec. 19, T. 15 N., R. 4 E. raighead: J. M. Howard 6/76. Clay, tan, with silt Sand, fine, w/red to white clay Clay, light- gray, with fine sand Sand, tan, coarse, with thin gray clay stringers Sand, gray, fine to medium, clean Sand, gray, medium to coarse, clean Sand, gray, fine to medium, clean Clay, gray Sand, gray, fine to medium, clean Clay, gray Sand, gray, fine to medium, clean Clay, gray Sand, gray, fine Clay, gray Sand, gray, fine Clay, gray with small shows of lignite - 2 separate 1" stringers @ 263' siderite, hard, 2" Lignite, soft, with brown clay Clay, gray
Location: County, Cr Logged by: 0'- 21' 21'- 32' 32'- 50' 50'-120' 120'-170' 215'-230' 230'-233' 233'-234' 240'-300' Drill Hole N Location: County, Cr Logged by: 0'- 6' 6'- 14' 14'-110'	Sec. 22, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan, with sand Sand and gravel Sand & gravel w/clay, tan, gray Sand, medium-grained, clay, tan-gray Clay, light gray, with sand Clay, gray, with sand Sand, "packed", clay, gray Clay, brown, with sand Lignite Clay, dark brown-gray, w/ sand Clay, dark brown-gray, with sand and trace of lignite T. D.: 300' No. 106. Elevation 378' Sec. 17, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan-brown, with sand Gravel, coarse sand, w/clay, tan Sand, clay, tan	19'- 27' 27'- 90' Drill Hole Location: County, Cr Logged by 0'- 5' 5'- 22' 22'-140' 140'-150' 150'-249' 249'-250½ 250½'-260½ 260'-260½ 260½'-275 275'-277'	Gravel and sand Sand, tan, medium to fine- grained T. D.: 90' No. 111. Elevation 380' SW'4, Sec. 3, T. 15 N., R. 4 E. aighead J. M. Howard Sand, tan, with clay Sand, tan, with clay Sand, tan, and gravel Sand, medium to coarse grained, clean, rounded to sub angular Sand, tan Sand, tine, gray, with few thin stringers of clay, light-tan Clay, layers of light brown, in sand, fine Lignite, hard Sand, fine, with light-green clay stringers Siderite layer, hard, 8" thick Sand, fine Lignite, hard Sand, fine	Drill Hole Location: County, Cr Logged by 0'- 14' 14'- 30' 30'- 40' 40'- 90' 90'-103' 103'-140' 140'-205' 205'-240' 243'-255' 255'-289'	lignite Sand, tan, medium T. D.: 150' No. 115. Elevation 330' SW¼, Sec. 19, T. 15 N., R. 4 E. aighead J. M. Howard 6/76. Clay, tan, with silt Sand, fine, w/red to white clay Clay, light-gray, with fine sand Sand, tan, medium, clean Sand, tan, coarse, with thin gray clay stringers Sand, gray, fine to medium, clean Sand, gray, medium to coarse, clean Sand, gray, fine to medium, clean Clay, gray Sand, gray, fine to medium, clean Clay, gray Sand, gray, fine Clay, gray with small shows of lignite - 2 separate 1" stringers @ 263' siderite, hard, 2" Lignite, soft, with brown clay
Location: County, Cr Logged by: 0'- 21' 21'- 32' 32'- 50' 50'-120' 120'-170' 170'-215' 233'-233' 233'-234' 234'-240' 240'-300' Drill Hole N Location: County, Cr Logged by: 0'- 6' 6'- 14' 14'-110' 10'-133'	Sec. 22, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan, with sand Sand and gravel Sand & gravel w/clay, tan, gray Sand, medium-grained, clay, tan-gray Clay, light gray, with sand Clay, gray, with sand Clay, gray, with sand Lignite Clay, dark brown-gray, w/ sand Clay, dark brown-gray, with sand and trace of lignite T. D.: 300' No. 106. Elevation 378' Sec. 17, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan-brown, with sand Gravel, coarse sand, w/clay, tan Sand, clay, tan Sand, evry coarse	19'- 27' 27'- 90' Drill Hole Location: County, Cr Logged by 0'- 5' 5'- 22' 22'-140' 140'-150' 150'-249' 249'-250½ 250½'-260 260'-260½ 260½'-275' 277'-289'	Gravel and sand Sand, tan, medium to fine- grained T. D.: 90' No. 111. Elevation 380' SW'4, Sec. 3, T. 15 N., R. 4 E. aighead J. M. Howard Sand, tan, with clay Sand, tan, and gravel Sand, medium to coarse grained, clean, rounded to sub angular Sand, tan Sand, tine, gray, with few thin stringers of clay, light-tan Clay, layers of light brown, in sand, fine Lignite, hard Sand, fine, with light-green clay stringers Siderite layer, hard, 8" thick Sand, fine Lignite, hard Sand, fine	Drill Hole Location: County, Ci Logged by 0'- 14' 14'- 30' 30'- 40' 40'- 90' 90'-103' 103'-140' 140'-205' 205'-240' 240'-243' 243'-255' 255'-289' 289'-290' 290'-300'	lignite Sand, tan, medium T. D.: 150' No. 115. Elevation 330' SW¼, Sec. 19, T. 15 N., R. 4 E. raighead: J. M. Howard 6/76. Clay, tan, with silt Sand, fine, w/red to white clay Clay, light- gray, with fine sand Sand, tan, coarse, with thin gray clay stringers Sand, gray, fine to medium, clean Sand, gray, medium to coarse, clean Sand, gray, fine to medium, clean Clay, gray Sand, gray, fine to medium, clean Clay, gray Sand, gray, fine Clay, gray with small shows of lignite - 2 separate 1" stringers @ 263' siderite, hard, 2" Lignite, soft, with brown clay Clay, gray @ 293' siderite, hard, 6" T. D.: 300'
Location: County, Cr Logged by: 0'- 21' 21'- 32' 32'- 50' 50'-120' 120'-170' 120'-215' 230'-233' 233'-234' 240'-300' Drill Hole N Location: County, Cr Logged by: 0'- 6' 6'- 14' 14'-110' 10'-133' 33'-133',6' 33'-133',6'	Sec. 22, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan, with sand Sand and gravel Sand & gravel w/clay, tan, gray Sand, medium-grained, clay, tan-gray Clay, light gray, with sand Clay, gray, with sand Clay, brown, with sand Lignite Clay, dark brown-gray, w/ sand Clay, dark brown-gray, with sand and trace of lignite T. D.: 300' No. 106. Elevation 378' Sec. 17, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan-brown, with sand Gravel, coarse sand, w/clay, tan Sand, clay, tan Sand, very coarse Lignite	19'- 27' 27'- 90' Drill Hole I Location: County, Cr Logged by 0'- 5' 5'- 22' 22'-140' 140'-150' 150'-249' 249'-250½ 250½'-260 260'-260½ 260½'-275' 277'-289' Drill Hole I	Gravel and sand Sand, tan, medium to fine- grained T. D.: 90' No. 111. Elevation 380' SW%, Sec. 3, T. 15 N., R. 4 E. aighead E. J. M. Howard Sand, tan, with clay Sand, tan, and gravel Sand, medium to coarse grained, clean, rounded to sub angular Sand, fine, gray, with few thin stringers of clay, light-tan Clay, layers of light brown, in sand, fine Lignite, hard Sand, fine, with light-green clay stringers Sand, fine Lignite, hard Sand, fine Lignite, hard Sand, fine @ 289 siderite layer, hard T. D.: 289' No. 112. Elevation 335'	Drill Hole Location: County, Ci Logged by 0'- 14' 14'- 30' 30'- 40' 40'- 90' 90'-103' 103'-140' 140'-205' 205'-240' 240'-243' 243'-255' 255'-289' Drill Hole I	lignite Sand, tan, medium T. D.: 150' No. 115. Elevation 330' SW¼, Sec. 19, T. 15 N., R. 4 E. aighead: J. M. Howard 6/76. Clay, tan, with silt Sand, fine, w/red to white clay Clay, light- gray, with fine sand Sand, tan, coarse, with thin gray clay stringers Sand, gray, fine to medium, clean Sand, gray, medium to coarse, clean Sand, gray, fine to medium, clean Clay, gray Sand, gray, fine to medium, clean Clay, gray with small shows of lignite - 2 separate 1" stringers @ 263' siderite, hard, 2" Lignite, soft, with brown clay Clay, gray @ 293' siderite, hard, 6" T. D.: 300' No. 116. Elevation 295'
Location: County, Cr Logged by: 0'- 21' 21'- 32' 32'- 50' 50'-120' 120'-170' 120'-170' 230'-233' 233'-234' 240'-300' Drill Hole fl Location: County, Cr Logged by: 0'- 6' 6'- 14' 14'-110' 10'-133' 33'-133.6'-247'	Sec. 22, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan, with sand Sand and gravel Sand & gravel w/clay, tan, gray Sand, medium-grained, clay, tan-gray Clay, light gray, with sand Clay, gray, with sand Clay, brown, with sand Lignite Clay, dark brown-gray, w/ sand Clay, dark brown-gray, with sand and trace of lignite T. D.: 300' No. 106. Elevation 378' Sec. 17, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan-brown, with sand Gravel, coarse sand, w/clay, tan Sand, clay, tan Sand, clay, tan Sand, clay, gray	19'- 27' 27'- 90' Drill Hole Location: County, Cr Logged by 0'- 5' 5'- 22' 22'-140' 140'-150' 150'-249' 249'-250½ 250½'-260 260'-260½ 260½'-275 275'-277' 277'-289' Drill Hole I Location:	Gravel and sand Sand, tan, medium to fine- grained T. D.: 90' No. 111. Elevation 380' SW½, Sec. 3, T. 15 N., R. 4 E. aighead J. M. Howard Sand, tan, with clay Sand, tan, and gravel Sand, medium to coarse grained, clean, rounded to sub angular Sand, tan Sand, fine, gray, with few thin stringers of clay, light-tan Clay, layers of light brown, in sand, fine Lignite, hard Sand, fine, with light-green clay stringers Siderite layer, hard, 8" thick Sand, fine Lignite, hard Sand, fine Lignite, hard Sand, fine Lignite, bard Sand, fine Lignite, bard Sand, fine Lignite, hard Sand, fine	Drill Hole Location: County, Ci Logged by 0'- 14' 14'- 30' 30'- 40' 40'- 90' 90'-103' 103'-140' 140'-205' 205'-240' 240'-243' 243'-255' 255'-289' Drill Hole I Location:	lignite Sand, tan, medium T. D.: 150' No. 115. Elevation 330' SW¼, Sec. 19, T. 15 N., R. 4 E. raighead: J. M. Howard 6/76. Clay, tan, with silt Sand, fine, w/red to white clay Clay, light- gray, with fine sand Sand, tan, medium, clean Sand, tan, coarse, with thin gray clay stringers Sand, gray, fine to medium, clean Sand, gray, fine to medium, clean Sand, gray, fine to medium, clean Clay, gray Sand, gray, fine to medium, clean Clay, gray with small shows of lignite - 2 separate 1" stringers @ 263' siderite, hard, 2" Lignite, soft, with brown clay Clay, gray @ 293' siderite, hard, 6" T. D.: 300' No. 116. Elevation 295' SW¼, Sec. 27, T. 16 N., R. 5 E.
Location: County, Cr Logged by: 0'- 21' 32'- 32' 32'- 50' 50'-120' 120'-170' 120'-215' 230'-233' 233'-234' 234'-240' 240'-300' Drill Hole N Location: County, Cr Logged by: 0'- 6' 6'- 14' 14'-110' 10'-133' 33'-133.6' 33'-248'	Sec. 22, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan, with sand Sand and gravel Sand & gravel w/clay, tan, gray Sand, medium-grained, clay, tan-gray Clay, light gray, with sand Clay, gray, with sand Sand, "packed", clay, gray Clay, brown, with sand Lignite Clay, dark brown-gray, w/ sand Clay, dark brown-gray, with sand and trace of lignite T. D.: 300' No. 106. Elevation 378' Sec. 17, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan-brown, with sand Gravel, coarse sand, w/clay, tan Sand, clay, tan Sand, clay, tan Sand, clay, gray Siltstone	19'- 27' 27'- 90' Drill Hole Location: County, Cr Logged by 0'- 5' 5'- 22' 22'-140' 140'-150' 150'-249' 249'-250½ 250½'-260 260'-260½: 260½-27' 277'-289' Drill Hole Location: County, Cr	Gravel and sand Sand, tan, medium to fine- grained T. D.: 90' No. 111. Elevation 380' SW¼, Sec. 3, T. 15 N., R. 4 E. aighead J. M. Howard Sand, tan, with clay Sand, tan, and gravel Sand, medium to coarse grained, clean, rounded to sub angular Sand, tan Sand, tan Sand, fine, gray, with few thin stringers of clay, light-tan Clay, layers of light brown, in sand, fine Lignite, hard Sand, fine Lignite, hard Sand, fine Lignite, hard Sand, fine Lignite, tand Sand, fine Lignite, bard Sand, fine Case Sand, fine Sand, fine Case Sand, fine Case Sand, fine Sand, fine Case Sand Case	Drill Hole Location: County, Cr Logged by 0'- 14' 14'- 30' 30'- 40' 40'- 90' 90'-103' 103'-140' 140'-205' 240'-243' 243'-255' 255'-289' Drill Hole Location: County, Gr	lignite Sand, tan, medium T. D.: 150' No. 115. Elevation 330' SW¼, Sec. 19, T. 15 N., R. 4 E. raighead: J. M. Howard 6/76. Clay, tan, with silt Sand, fine, w/red to white clay Clay, light- gray, with fine sand Sand, tan, coarse, with thin gray clay stringers Sand, gray, fine to medium, clean Sand, gray, medium to coarse, clean Sand, gray, fine to medium, clean Clay, gray Sand, gray, fine to medium, clean Clay, gray Sand, gray, fine to medium, clean Clay, gray Sand, gray, fine Clay, gray Sand, gray, fine Clay, gray Sand, gray, with small shows of lignite - 2 separate 1" stringers @ 263' siderite, hard, 2" Lignite, soft, with brown clay Clay, gray @ 293' siderite, hard, 6" T. D.: 300' No. 116. Elevation 295' SW¼, Sec. 27, T. 16 N., R. 5 E. seene
Location: County, Cr Logged by: 0'- 21' 32'- 32' 32'- 50' 50'-120' 120'-170' 120'-215' 230'-233' 233'-234' 234'-240' 240'-300' Drill Hole N Location: County, Cr Logged by: 0'- 6' 6'- 14' 14'-110' 10'-133' 33'-133.6' 33'-248'	Sec. 22, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan, with sand Sand and gravel Sand & gravel w/clay, tan, gray Sand, medium-grained, clay, tan-gray Clay, light gray, with sand Clay, gray, with sand Clay, brown, with sand Lignite Clay, dark brown-gray, w/ sand Clay, dark brown-gray, with sand and trace of lignite T. D.: 300' No. 106. Elevation 378' Sec. 17, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan-brown, with sand Gravel, coarse sand, w/clay, tan Sand, clay, tan Sand, clay, tan Sand, clay, gray	19'- 27' 27'- 90' Drill Hole Location: County, Cr Logged by 0'- 5' 5'- 22' 22'-140' 140'-150' 150'-249' 249'-250½ 250½'-260 260'-260½: 260½-27' 277'-289' Drill Hole Location: County, Cr	Gravel and sand Sand, tan, medium to fine- grained T. D.: 90' No. 111. Elevation 380' SW½, Sec. 3, T. 15 N., R. 4 E. aighead J. M. Howard Sand, tan, with clay Sand, tan, and gravel Sand, medium to coarse grained, clean, rounded to sub angular Sand, tan Sand, fine, gray, with few thin stringers of clay, light-tan Clay, layers of light brown, in sand, fine Lignite, hard Sand, fine, with light-green clay stringers Siderite layer, hard, 8" thick Sand, fine Lignite, hard Sand, fine Lignite, hard Sand, fine Lignite, bard Sand, fine Lignite, bard Sand, fine Lignite, hard Sand, fine	Drill Hole Location: County, Cr Logged by 0'- 14' 14'- 30' 30'- 40' 40'- 90' 90'-103' 103'-140' 140'-205' 240'-243' 243'-255' 255'-289' Drill Hole Location: County, Gr	lignite Sand, tan, medium T. D.: 150' No. 115. Elevation 330' SW¼, Sec. 19, T. 15 N., R. 4 E. raighead: J. M. Howard 6/76. Clay, tan, with silt Sand, fine, w/red to white clay Clay, light- gray, with fine sand Sand, tan, medium, clean Sand, tan, coarse, with thin gray clay stringers Sand, gray, fine to medium, clean Sand, gray, fine to medium, clean Sand, gray, fine to medium, clean Clay, gray Sand, gray, fine to medium, clean Clay, gray with small shows of lignite - 2 separate 1" stringers @ 263' siderite, hard, 2" Lignite, soft, with brown clay Clay, gray @ 293' siderite, hard, 6" T. D.: 300' No. 116. Elevation 295' SW¼, Sec. 27, T. 16 N., R. 5 E.
Location: County, Cr County, Cr 21'- 32'- 32'- 50'- 50'- 120'- 133'- 133'- 133'- 133'- 133'- 133'- 143	Sec. 22, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan, with sand Sand and gravel Sand & gravel w/clay, tan, gray Sand, medium-grained, clay, tan-gray Clay, light gray, with sand Clay, gray, with sand Sand, "packed", clay, gray Clay, brown, with sand Lignite Clay, dark brown-gray, w/ sand Clay, dark brown-gray, with sand and trace of lignite T. D.: 300' No. 106. Elevation 378' Sec. 17, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan-brown, with sand Gravel, coarse sand, w/clay, tan Sand, clay, tan Sand, clay, gray Siltstone Sand, clay, gray Siltstone Sand, clay, gray T. D.: 248'	19'- 27' 27'- 90' Drill Hole Location: County, Cr Logged by 0'- 5' 5'- 22' 22'-140' 140'-150' 150'-249' 249'-250½ 250½'-260 260'-260½: 260½-27' 277'-289' Drill Hole I Location: County, Cr Logged by:	Gravel and sand Sand, tan, medium to fine- grained T. D.: 90' No. 111. Elevation 380' SW¼, Sec. 3, T. 15 N., R. 4 E. aighead J. M. Howard Sand, tan, with clay Sand, tan, and gravel Sand, medium to coarse grained, clean, rounded to sub angular Sand, tan Sand, tan Sand, fine, gray, with few thin stringers of clay, light-tan Clay, layers of light brown, in sand, fine Lignite, hard Sand, fine Lignite, hard Sand, fine Lignite, hard Sand, fine Lignite, tand Sand, fine Lignite, bard Sand, fine Case Sand, fine Sand, fine Case Sand, fine Case Sand, fine Sand, fine Case Sand Case	Drill Hole Location: County, Cr Logged by 0'- 14' 14'- 30' 30'- 40' 40'- 90' 90'-103' 103'-140' 140'-205' 205'-240' 240'-243' 243'-255' 255'-289' Drill Hole I Location: County, Gr Logged by:	lignite Sand, tan, medium T. D.: 150' No. 115. Elevation 330' SW¼, Sec. 19, T. 15 N., R. 4 E. aighead: J. M. Howard 6/76. Clay, tan, with silt Sand, fine, w/red to white clay Clay, light- gray, with fine sand Sand, tan, medium, clean Sand, tan, coarse, with thin gray clay stringers Sand, gray, fine to medium, clean Sand, gray, medium to coarse, clean Clay, gray Sand, gray, fine to medium, clean Clay, gray with small shows of lignite - 2 separate 1" stringers @ 263' siderite, hard, 2" Lignite, soft, with brown clay Clay, gray @ 293' siderite, hard, 6" T. D.: 300' No. 116. Elevation 295' SW¼, Sec. 27, T. 16 N., R. 5 E. eene J. M. Howard 6/76.
Location: County, Cr Logged by: 0'- 21' 32'- 32'- 50' 50'-120' 120'-170' 170'-215' 231'-230' 233'-234' 234'-240' 240'-300' Drill Hole N Location: County, Cr Logged by: 0'- 6' 6'- 14' 14'-110' 10'-133' 33'-133.6' 33.6'-247' 4'4''-248'	Sec. 22, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan, with sand Sand and gravel Sand & gravel w/clay, tan, gray Sand, medium-grained, clay, tan-gray Clay, light gray, with sand Clay, gray, with sand Clay, gray, with sand Lignite Clay, dark brown-gray, w/ sand Clay, dark brown-gray, with sand and trace of lignite T. D.: 300' No. 106. Elevation 378' Sec. 17, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan-brown, with sand Gravel, coarse sand, w/clay, tan Sand, clay, tan Sand, clay, gray Siltstone Sand, clay, gray T. D.: 248' Io. 107. Elevation 350'	19'- 27' 27'- 90' Drill Hole Location: County, Cr Logged by 0'- 5' 5'- 22' 22'-140' 140'-150' 150'-249' 249'-250½ 260½'-260½ 260½'-275' 277'-289' Drill Hole I Location: County, Cr Logged by: 0'- 27' 27'- 37'	Gravel and sand Sand, tan, medium to fine- grained T. D.: 90' No. 111. Elevation 380' SW%, Sec. 3, T. 15 N., R. 4 E. raighead J. M. Howard Sand, tan, with clay Sand, tan, with clay Sand, tan, and gravel Sand, medium to coarse grained, clean, rounded to sub angular Sand, tine, gray, with few thin stringers of clay, light-tan Clay, layers of light brown, in sand, fine Lignite, hard Sand, fine, with light-green clay stringers Siderite layer, hard, 8" thick Sand, fine Lignite, hard Sand, fine Clay, tan, with sand J. M. Howard Glay, tan, with sand Clay, tan, with sand Clay, tan, with sand Clay, tan, with sand	Drill Hole Location: County, Cr Logged by 0'- 14' 14'- 30' 30'- 40' 40'- 90' 90'-103' 103'-140' 140'-205' 205'-240' 240'-243' 243'-255' 255'-289' Drill Hole Location: County, Gr Logged by: 0'- 4'	lignite Sand, tan, medium T. D.: 150' No. 115. Elevation 330' SW¼, Sec. 19, T. 15 N., R. 4 E. raighead: J. M. Howard 6/76. Clay, tan, with silt Sand, fine, w/red to white clay Clay, light- gray, with fine sand Sand, tan, medium, clean Sand, tan, coarse, with thin gray clay stringers Sand, gray, fine to medium, clean Sand, gray, fine to medium, clean Sand, gray, fine to medium, clean Clay, gray Sand, gray, fine to medium, clean Clay, gray Sand, gray, fine to medium, clean Clay, gray Sand, gray, fine Sand, gray, gray Sand, gray, gray, gray Sand, gray, gray Sand, gray, gray, gray, gray Sand, g
Location: County, Cr. 21'-32'-32'-50'-120'-170'-125'-230'-233'-233'-233'-233'-234'-240'-300'-240'-300'-240'-300'-240'-300'-240'-300'-240'-300'-240'-300'-240'-300'-240'-300'-240'-30'-33'-133'-133'-133'-133'-133'-133'	Sec. 22, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan, with sand Sand and gravel Sand & gravel w/clay, tan, gray Sand, medium-grained, clay, tan-gray Clay, light gray, with sand Clay, gray, with sand Clay, brown, with sand Lignite Clay, dark brown-gray, w/ sand Clay, dark brown-gray, with sand and trace of lignite T. D.: 300' No. 106. Elevation 378' Sec. 17, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan-brown, with sand Gravel, coarse sand, w/clay, tan Sand, clay, tan Sand, clay, tan Sand, clay, gray Siltstone Sand, clay, gray Siltstone Sand, clay, gray T. D.: 248' Io. 107. Elevation 350' NW4, Sec. 4, T. 15 N., R 4 E.	19'- 27' 27'- 90' Drill Hole Location: County, Cr Logged by: 0'- 5' 5'- 22' 22'-140' 140'-150' 150'-249' 249'-250½ 250½'-260 260'-260½' 260½'-275' 277'-289' Drill Hole I Location: County, Cr Logged by: 0'- 27' 27'- 37' 37'-105'	Gravel and sand Sand, tan, medium to fine- grained T. D.: 90' No. 111. Elevation 380' SW¼, Sec. 3, T. 15 N., R. 4 E. aighead J. M. Howard Sand, tan, with clay Sand, tan, and gravel Sand, medium to coarse grained, clean, rounded to sub angular Sand, tan Sand, fine, gray, with few thin stringers of clay, light-tan Clay, layers of light brown, in sand, fine Lignite, hard Sand, fine, with light-green clay stringers Siderite layer, hard, 8" thick Sand, fine Lignite, hard Sand, fine Lignite, hard Sand, fine Sand, fine Lignite, hard Sand, fine Clay Siderite layer, hard T. D.: 289' No. 112. Elevation 335' SE¼, Sec. 31, T. 15 N., R. 4 E. aighead J. M. Howard Clay, tan, with sand Clay, tan, with sand Clay, tan, with sand Clay, tan, with sand Sand, tan, medium-grained	Drill Hole Location: County, Cr Logged by 0'- 14' 14'- 30' 30'- 40' 40'- 90' 90'-103' 103'-140' 140'-205' 205'-240' 240'-243' 243'-255' 255'-289' Drill Hole I Location: County, Gr Logged by:	lignite Sand, tan, medium T. D.: 150' No. 115. Elevation 330' SW¼, Sec. 19, T. 15 N., R. 4 E. raighead: J. M. Howard 6/76. Clay, tan, with silt Sand, fine, w/red to white clay Clay, light- gray, with fine sand Sand, tan, coarse, with thin gray clay stringers Sand, gray, fine to medium, clean Clay, gray Sand, gray, fine to medium, clean Sand, gray, fine to medium, clean Sand, gray, fine Clay, gray Sand, gray, fine Clay, gray Sand, gray, fine Clay, gray with small shows of lignite - 2 separate 1" stringers @ 263' siderite, hard, 2" Lignite, soft, with brown clay Clay, gray @ 293' siderite, hard, 6" T. D.: 300' No. 116. Elevation 295' SW¼, Sec. 27, T. 16 N., R. 5 E. eene J. M. Howard 6/76. Silt, brown, with sand Sand, brown, with gray to
Location: County, Cr. 21'- 32'- 32'- 50'- 120' 120'-170'-115' 215'-230'-230'-233'-234'-240'-300' 240'-300' 240'-300' 240'-300' 240'-30-133'-133.6'-247'-248'-18'-10'-10'-18'-18'-18'-18'-18'-18'-18'-18'-18'-18	Sec. 22, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan, with sand Sand and gravel Sand & gravel w/clay, tan, gray Sand, medium-grained, clay, tan-gray Clay, light gray, with sand Clay, gray, with sand Clay, brown, with sand Lignite Clay, dark brown-gray, w/ sand Clay, dark brown-gray, with sand and trace of lignite T. D.: 300' No. 106. Elevation 378' Sec. 17, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan-brown, with sand Gravel, coarse sand, w/clay, tan Sand, clay, tan Sand, clay, tan Sand, clay, gray Siltstone Sand, clay, gray T. D.: 248' No. 107. Elevation 350' NW'4, Sec. 4, T. 15 N., R 4 E. aighead	19'- 27' 27'- 90' Drill Hole Location: County, Cr Logged by 0'- 5' 5'- 22' 22'-140' 140'-150' 150'-249' 249'-250½ 260½'-260½ 260½'-275' 277'-289' Drill Hole I Location: County, Cr Logged by: 0'- 27' 27'- 37'	Gravel and sand Sand, tan, medium to fine- grained T. D.: 90' No. 111. Elevation 380' SW¼, Sec. 3, T. 15 N., R. 4 E. aighead J. M. Howard Sand, tan, with clay Sand, tan, with clay Sand, tan, and gravel Sand, medium to coarse grained, clean, rounded to sub angular Sand, tan Sand, fine, gray, with few thin stringers of clay, light-tan Clay, layers of light brown, in sand, fine Lignite, hard Sand, fine, with light-green clay stringers Siderite layer, hard, 8" thick Sand, fine Lignite, hard Sand, fine Lignite, hard Sand, fine Bigheite layer, hard T. D.: 289' No. 112. Elevation 335' SE¼, Sec. 31, T. 15 N., R. 4 E. aighead J. M. Howard 6/76. Clay, tan with sand Clay, tan, with sand and gravel Sand, tan, medium-grained Sand, tan, coarse with few thin	Drill Hole Location: County, Cr Logged by 0'- 14' 14'- 30' 30'- 40' 40'- 90' 90'-103' 103'-140' 140'-205' 205'-240' 244'-243' 243'-255' 255'-289' Drill Hole Location: County, Gr Logged by: 0'- 4' 4'- 22' 22'-105'	lignite Sand, tan, medium T. D.: 150' No. 115. Elevation 330' SW¼, Sec. 19, T. 15 N., R. 4 E. aighead: J. M. Howard 6/76. Clay, tan, with silt Sand, fine, w/red to white clay Clay, light- gray, with fine sand Sand, tan, medium, clean Sand, tan, coarse, with thin gray clay stringers Sand, gray, fine to medium, clean Sand, gray, fine to medium, clean Clay, gray with small shows of lignite - 2 separate 1" stringers @ 263' siderite, hard, 2" Lignite, soft, with brown clay Clay, gray @ 293' siderite, hard, 6" T. D.: 300' No. 116. Elevation 295' SW¼, Sec. 27, T. 16 N., R. 5 E. eene J. M. Howard 6/76. Silt, brown, with sand Sand, brown, with gray to cream clay
Location: County, Cr. 21'- 32'- 32'- 50'- 120' 120'-170'-115' 215'-230'-230'-233'-234'-240'-300' 240'-300' 240'-300' 240'-300' 240'-30-133'-133.6'-247'-248'-18'-10'-10'-18'-18'-18'-18'-18'-18'-18'-18'-18'-18	Sec. 22, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan, with sand Sand and gravel Sand & gravel w/clay, tan, gray Sand, medium-grained, clay, tan-gray Clay, light gray, with sand Clay, gray, with sand Clay, brown, with sand Lignite Clay, dark brown-gray, w/ sand Clay, dark brown-gray, with sand and trace of lignite T. D.: 300' No. 106. Elevation 378' Sec. 17, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan-brown, with sand Gravel, coarse sand, w/clay, tan Sand, clay, tan Sand, clay, tan Sand, clay, gray Siltstone Sand, clay, gray Siltstone Sand, clay, gray T. D.: 248' Io. 107. Elevation 350' NW4, Sec. 4, T. 15 N., R 4 E.	19'- 27' 27'- 90' Drill Hole Location: County, Cr Logged by: 0'- 5' 5'- 22' 22'-140' 140'-150' 150'-249' 249'-250½ 250½'-260 260'-260½' 260½'-275' 277'-289' Drill Hole I Location: County, Cr Logged by: 0'- 27' 27'- 37' 37'-105'	Gravel and sand Sand, tan, medium to fine- grained T. D.: 90' No. 111. Elevation 380' SW%, Sec. 3, T. 15 N., R. 4 E. aighead J. M. Howard Sand, tan, with clay Sand, tan, with clay Sand, tan, and gravel Sand, medium to coarse grained, clean, rounded to sub angular Sand, tan Sand, tine, gray, with few thin stringers of clay, light-tan Clay, layers of light brown, in sand, fine Lignite, hard Sand, fine, with light-green clay stringers Siderite layer, hard, 8" thick Sand, fine Lignite, hard Sand, fine @ 289 siderite layer, hard T. D.: 289' No. 112. Elevation 335' SE%, Sec. 31, T. 15 N., R. 4 E. aighead J. M. Howard 6/76. Clay, tan with sand Clay, tan, with sand and gravel Sand, tan, medium-grained Sand, tan, medium-grained Sand, tan, coarse with few thin stringers of gray and brown clay	Drill Hole Location: County, Cr Logged by 0'- 14' 14'- 30' 30'- 40' 40'- 90' 90'-103' 103'-140' 140'-205' 205'-240' 240'-243' 243'-255' 255'-289' Drill Hole I Location: County, Gr Logged by: 0'- 4' 4'- 22' 22'-105' 105'-110'	lignite Sand, tan, medium T. D.: 150' No. 115. Elevation 330' SW¼, Sec. 19, T. 15 N., R. 4 E. raighead: J. M. Howard 6/76. Clay, tan, with silt Sand, fine, w/red to white clay Clay, light- gray, with fine sand Sand, tan, coarse, with thin gray clay stringers Sand, gray, fine to medium, clean Clay, gray Sand, gray, fine to medium, clean Sand, gray, fine to medium, clean Sand, gray, fine Clay, gray Sand, gray, fine Clay, gray Sand, gray, fine Clay, gray with small shows of lignite - 2 separate 1" stringers @ 263' siderite, hard, 2" Lignite, soft, with brown clay Clay, gray @ 293' siderite, hard, 6" T. D.: 300' No. 116. Elevation 295' SW¼, Sec. 27, T. 16 N., R. 5 E. eene J. M. Howard 6/76. Silt, brown, with sand Sand, brown, with gray to
Location: County, Cr. County, Cr. 21'- 32'- 32'- 50'- 50'-120'- 120'-170'-215'-230'-230'-233'-233'-234'-240'-300'- County, Cr.	Sec. 22, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan, with sand Sand and gravel Sand & gravel w/clay, tan, gray Sand, medium-grained, clay, tan-gray Clay, light gray, with sand Clay, gray, with sand Clay, brown, with sand Lignite Clay, dark brown-gray, w/ sand Clay, dark brown-gray, with sand and trace of lignite T. D.: 300' No. 106. Elevation 378' Sec. 17, T. 15 N., R. 4 E. aighead D. W. Lumbert 5/76. Clay, tan-brown, with sand Gravel, coarse sand, w/clay, tan Sand, clay, tan Sand, clay, tan Sand, clay, gray Siltstone Sand, clay, gray T. D.: 248' No. 107. Elevation 350' NW'4, Sec. 4, T. 15 N., R 4 E. aighead	19'- 27' 27'- 90' Drill Hole Location: County, Cr Logged by: 0'- 5' 5'- 22' 22'-140' 140'-150' 150'-249' 249'-250½ 250½'-260 260'-260½' 260½'-275' 277'-289' Drill Hole I Location: County, Cr Logged by: 0'- 27' 27'- 37' 37'-105'	Gravel and sand Sand, tan, medium to fine- grained T. D.: 90' No. 111. Elevation 380' SW¼, Sec. 3, T. 15 N., R. 4 E. aighead J. M. Howard Sand, tan, with clay Sand, tan, with clay Sand, tan, and gravel Sand, medium to coarse grained, clean, rounded to sub angular Sand, tan Sand, fine, gray, with few thin stringers of clay, light-tan Clay, layers of light brown, in sand, fine Lignite, hard Sand, fine, with light-green clay stringers Siderite layer, hard, 8" thick Sand, fine Lignite, hard Sand, fine Lignite, hard Sand, fine Bigheite layer, hard T. D.: 289' No. 112. Elevation 335' SE¼, Sec. 31, T. 15 N., R. 4 E. aighead J. M. Howard 6/76. Clay, tan with sand Clay, tan, with sand and gravel Sand, tan, medium-grained Sand, tan, coarse with few thin	Drill Hole Location: County, Cr Logged by 0'- 14' 14'- 30' 30'- 40' 40'- 90' 90'-103' 103'-140' 140'-205' 205'-240' 244'-243' 243'-255' 255'-289' Drill Hole Location: County, Gr Logged by: 0'- 4' 4'- 22' 22'-105'	lignite Sand, tan, medium T. D.: 150' No. 115. Elevation 330' SW¼, Sec. 19, T. 15 N., R. 4 E. aighead: J. M. Howard 6/76. Clay, tan, with silt Sand, fine, w/red to white clay Clay, light- gray, with fine sand Sand, tan, medium, clean Sand, tan, coarse, with thin gray clay stringers Sand, gray, fine to medium, clean Sand, gray, medium to coarse, clean Sand, gray, fine to medium, clean Clay, gray Sand, gray, fine to medium, clean Clay, gray Sand, gray, tine to medium, clean Clay, gray Sand, gray, fine Clay, gray Wand, gray with small shows of lignite - 2 separate 1" stringers @ 263' siderite, hard, 2" Lignite, soft, with brown clay Clay, gray @ 293' siderite, hard, 6" T. D.: 300' No. 116. Elevation 295' SW¼, Sec. 27, T. 16 N., R. 5 E. eene J. M. Howard 6/76. Silt, brown, with sand Sand, brown, with gray to cream clay Sand, tan, medium to fine

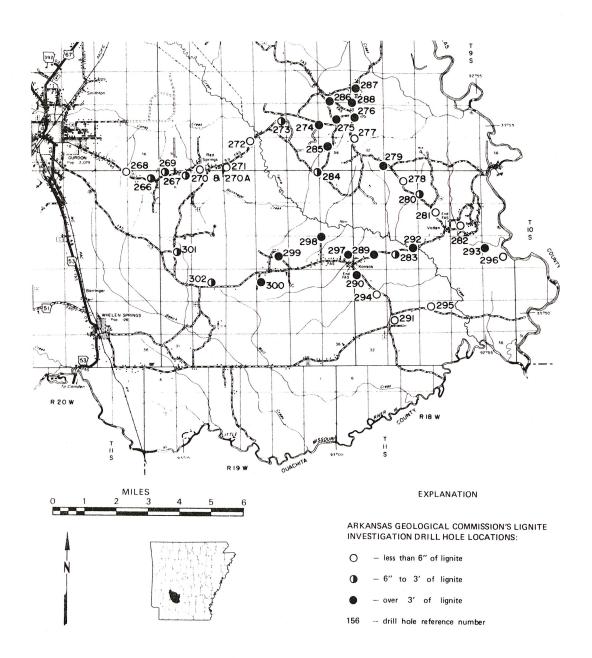
APPENDIX B

County location maps and drill logs of south Arkansas

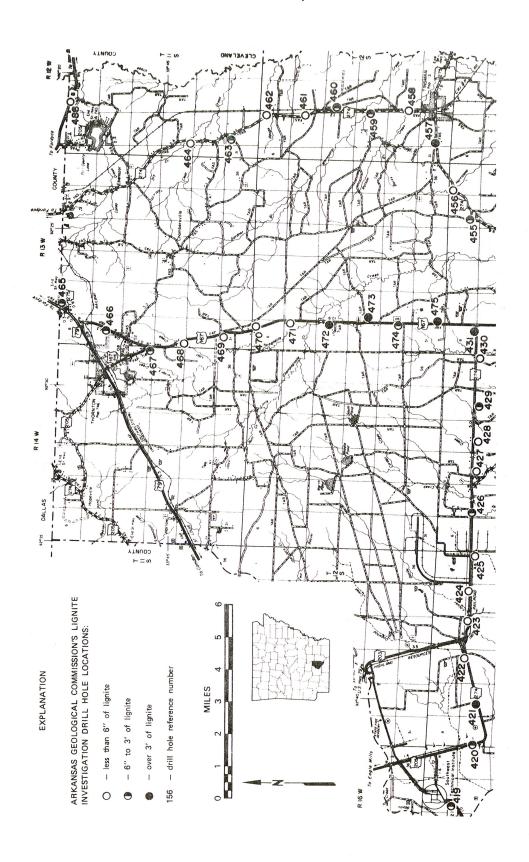
Bradley County



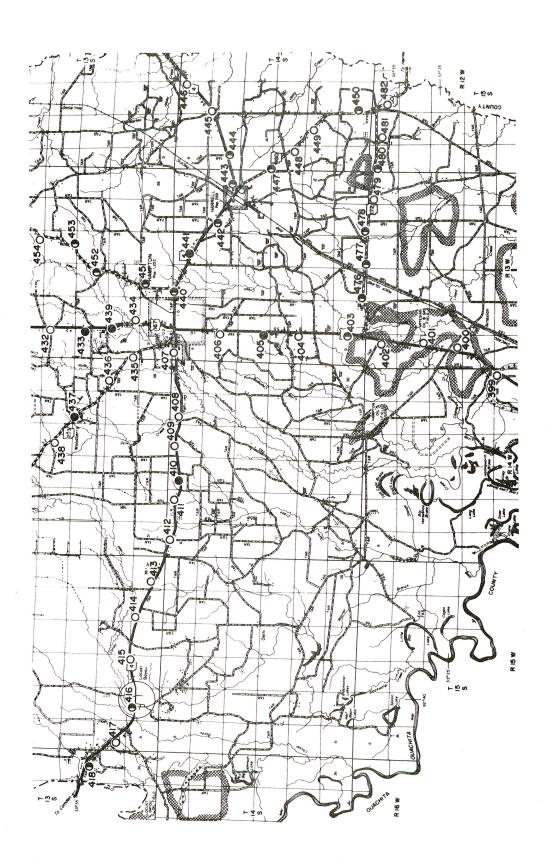
Clark County

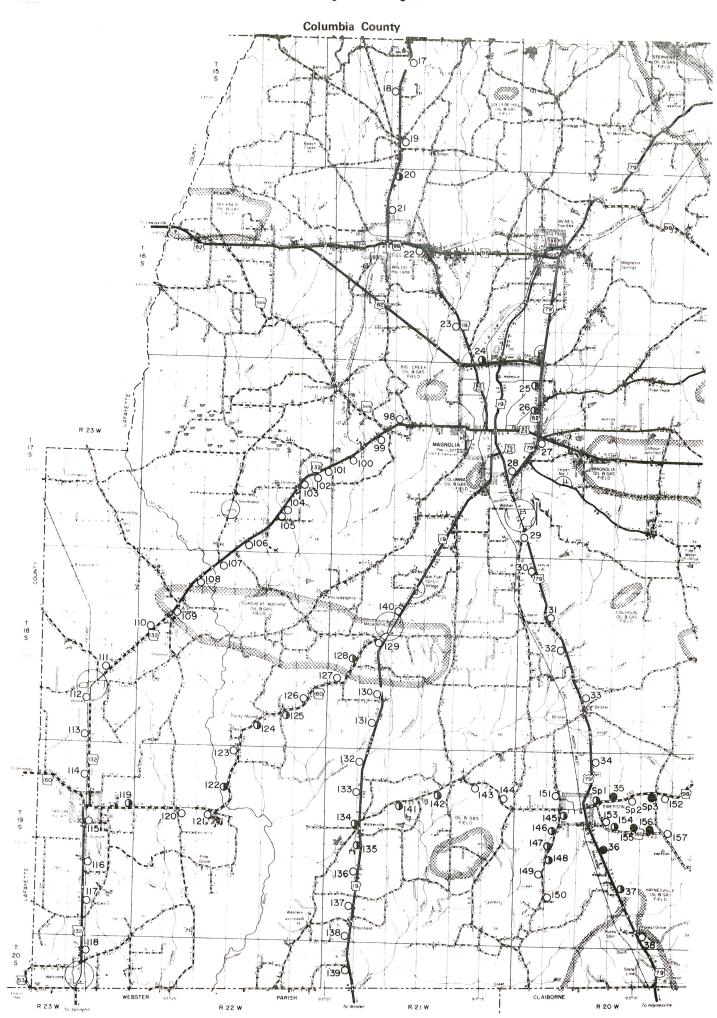


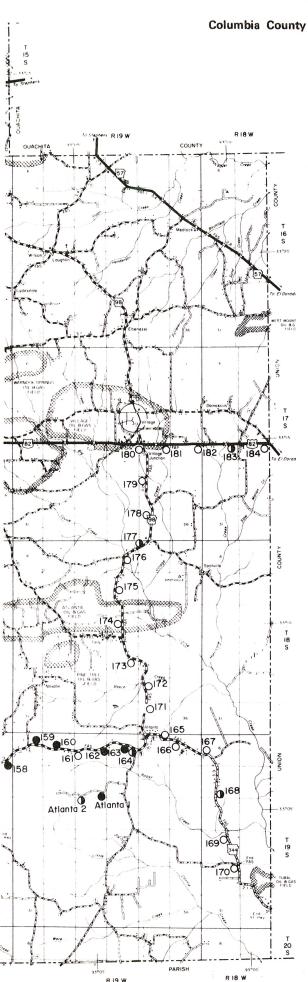
Calhoun County



Calhoun County







EXPLANATION

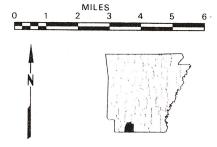
ARKANSAS GEOLOGICAL COMMISSION'S LIGNITE INVESTIGATION DRILL HOLE LOCATIONS:

- less than 6" of lignite

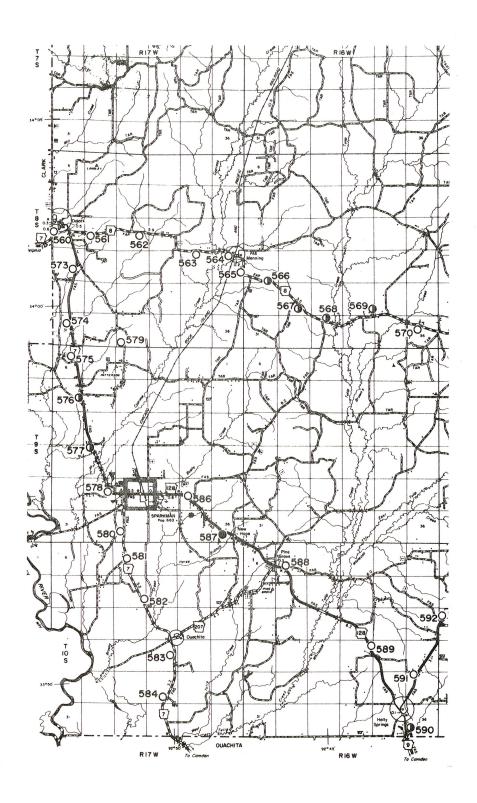
to 3' of lignite

- over 3' of lignite

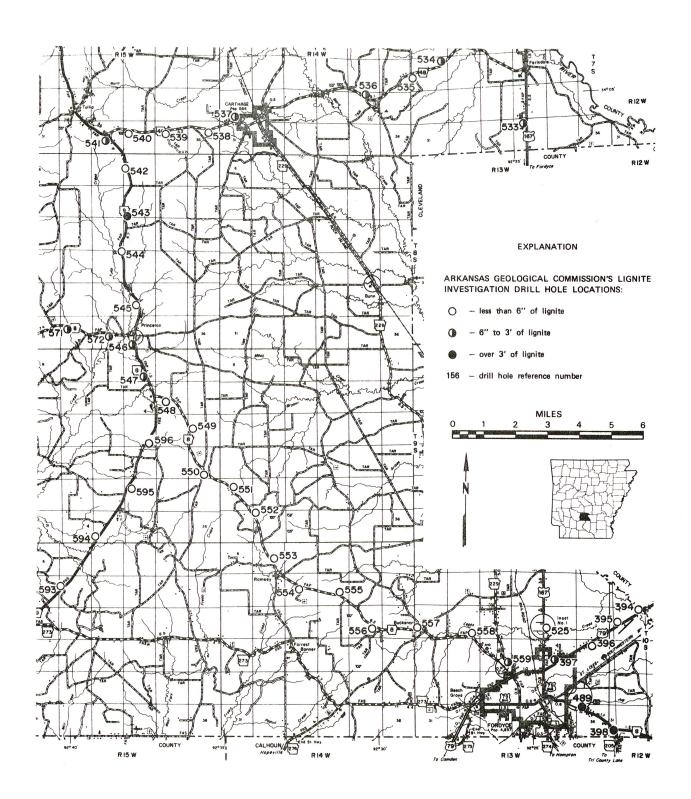
- drill hole reference number



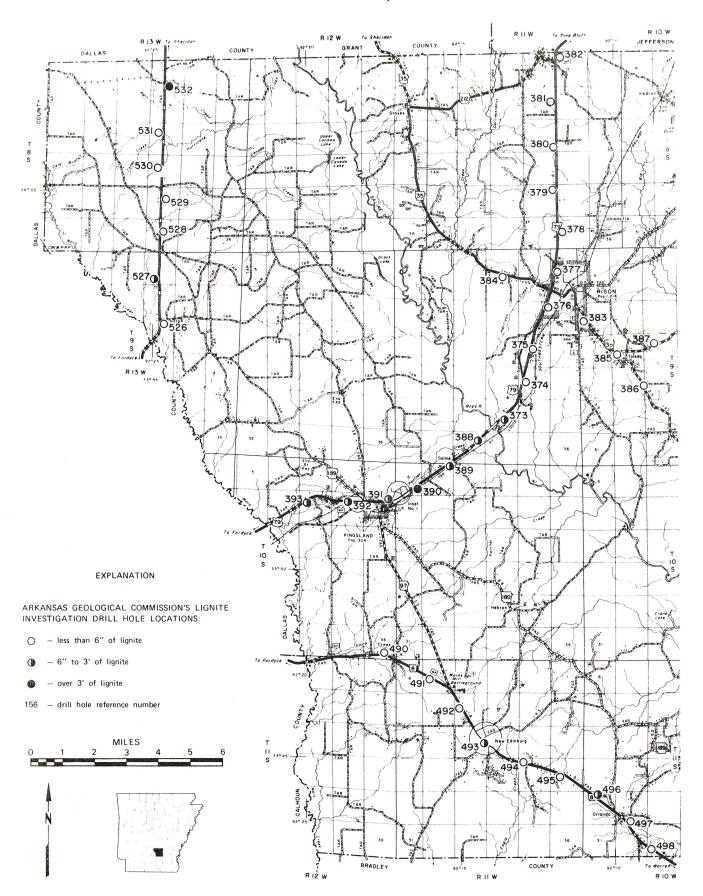
Dallas County



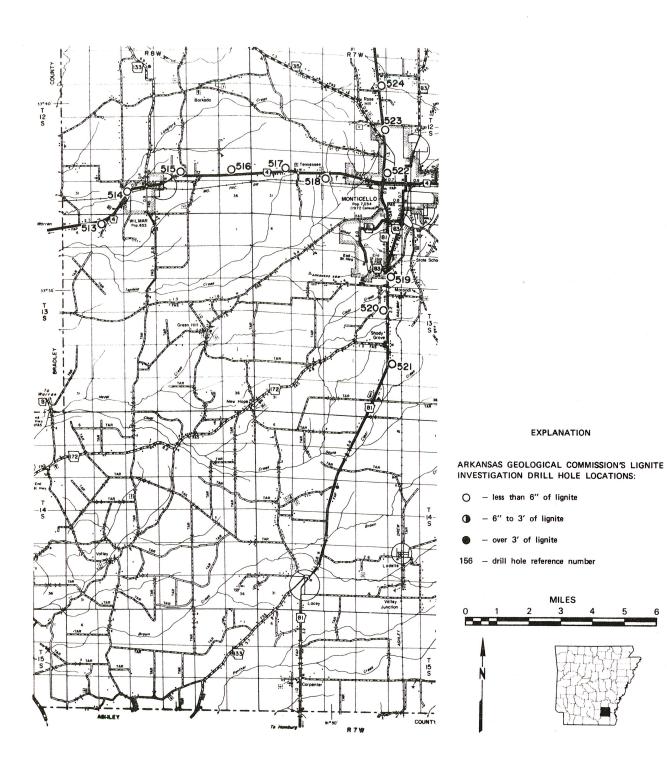
Dallas County



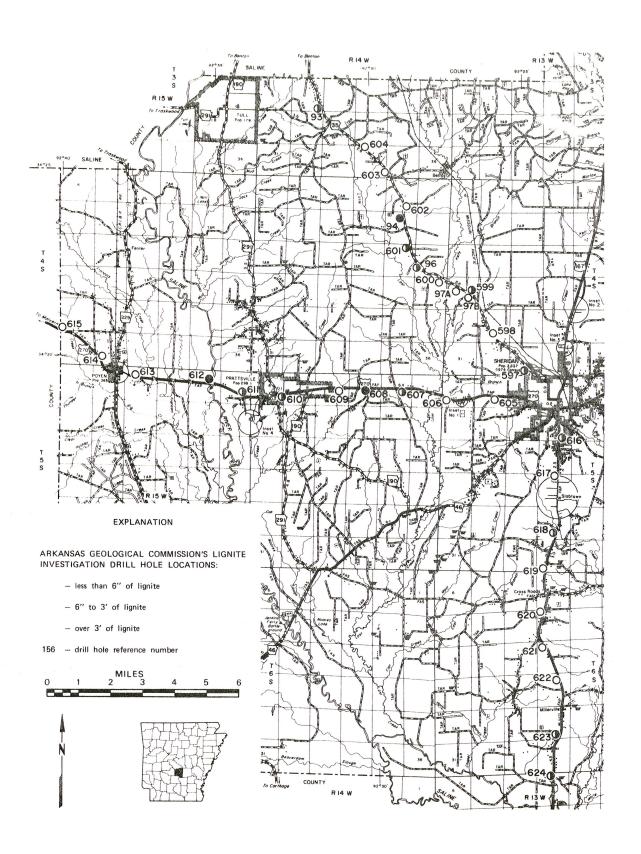
Cleveland County



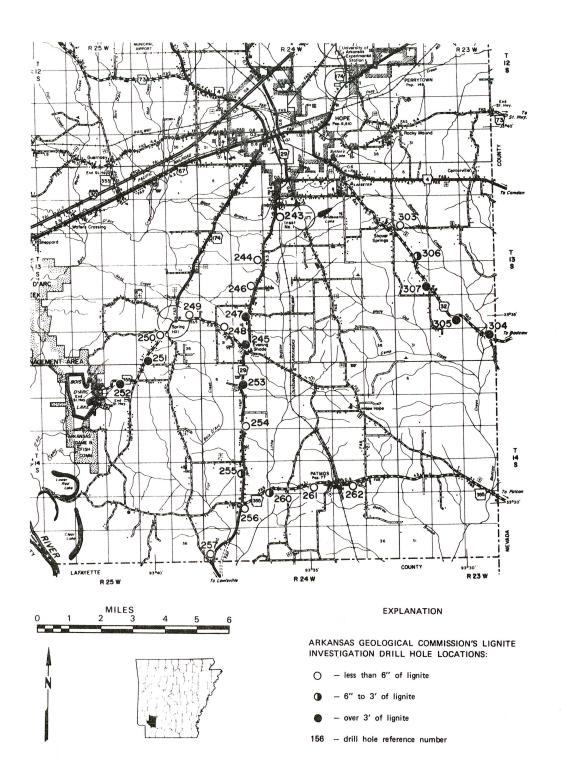
Drew County



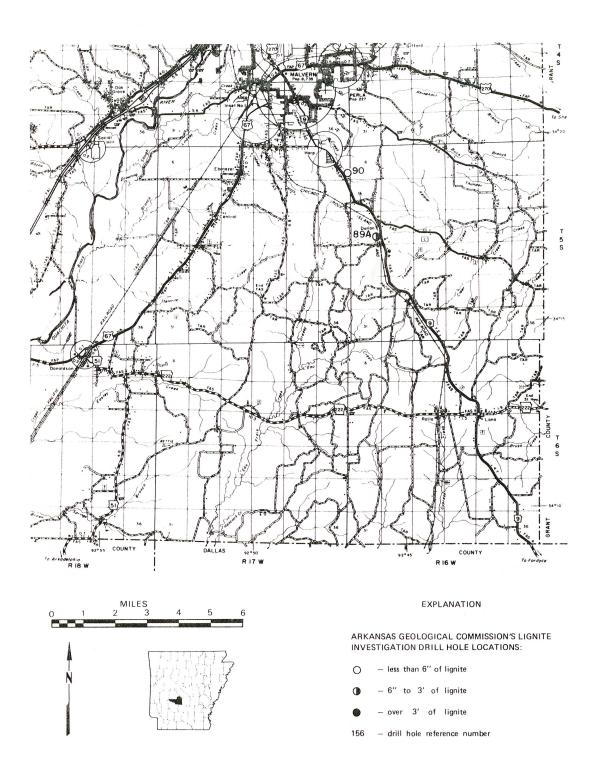
Grant County



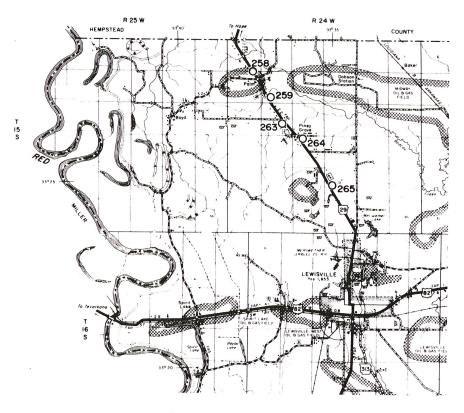
Hempstead County

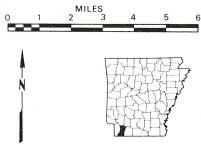


Hot Spring County



Lafayette County



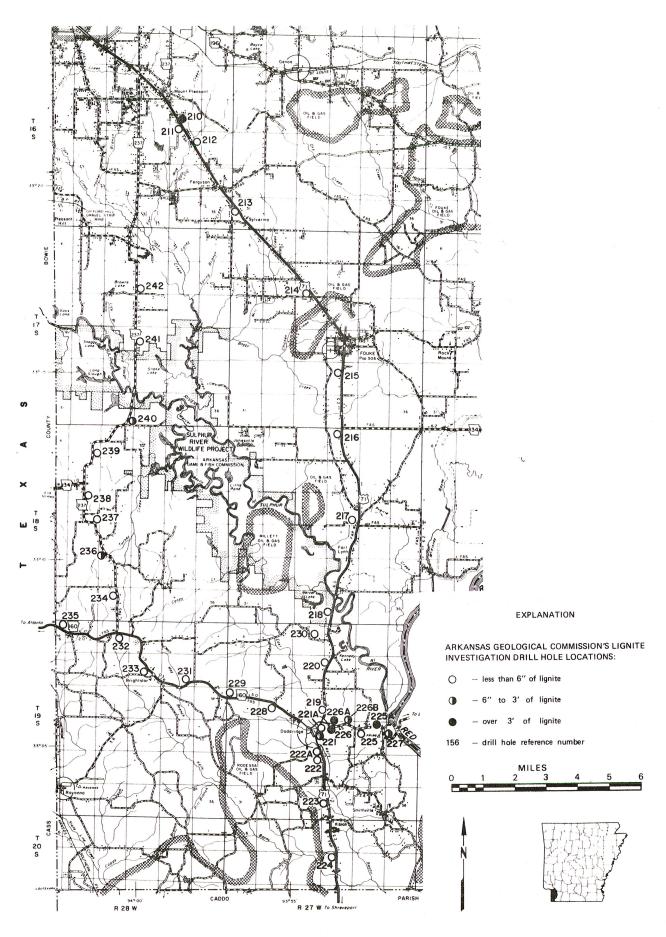


EXPLANATION

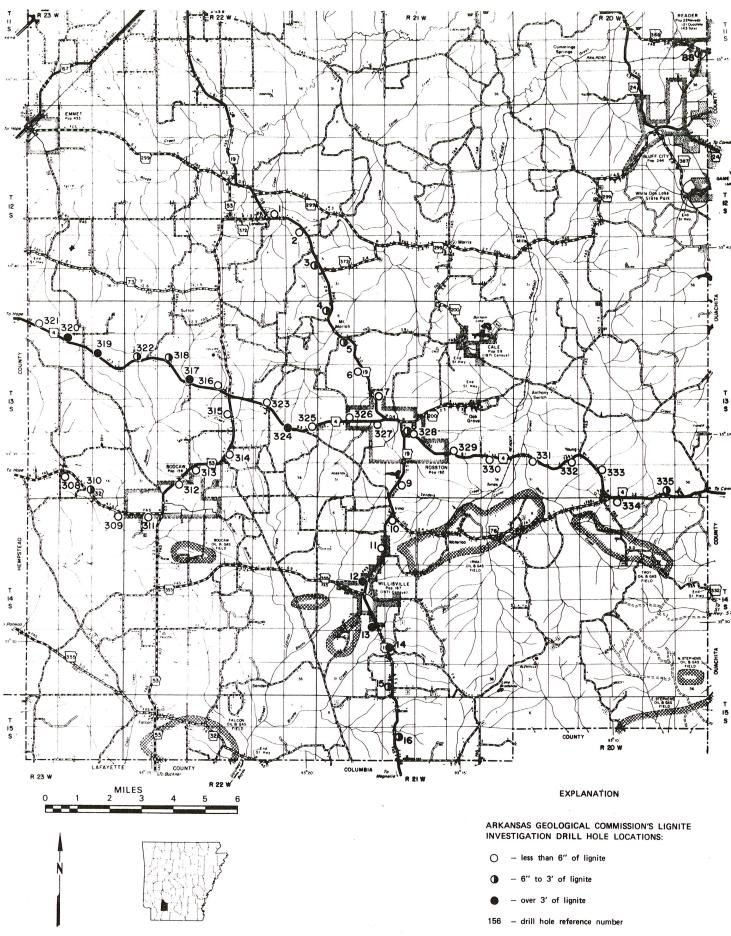
ARKANSAS GEOLOGICAL COMMISSION'S LIGNITE INVESTIGATION DRILL HOLE LOCATIONS:

- O less than 6" of lignite
- → 6" to 3' of lignite
- over 3' of lignite
- 156 drill hole reference number

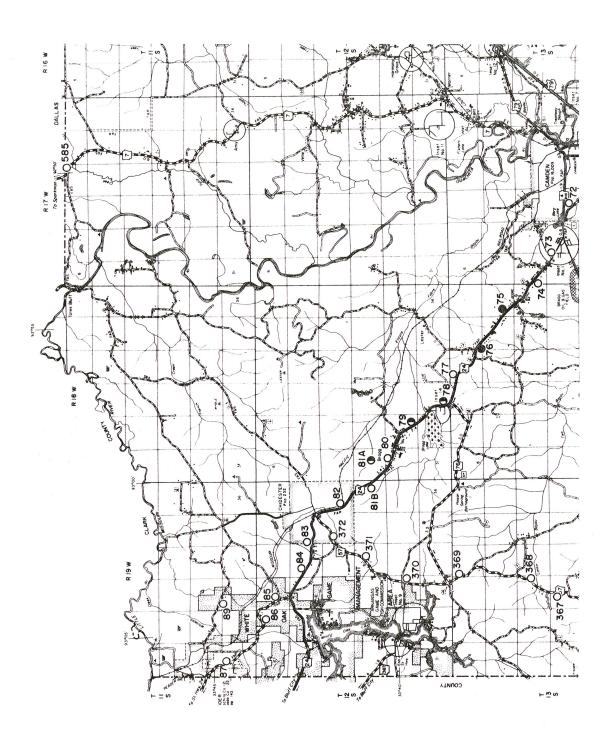
Miller County



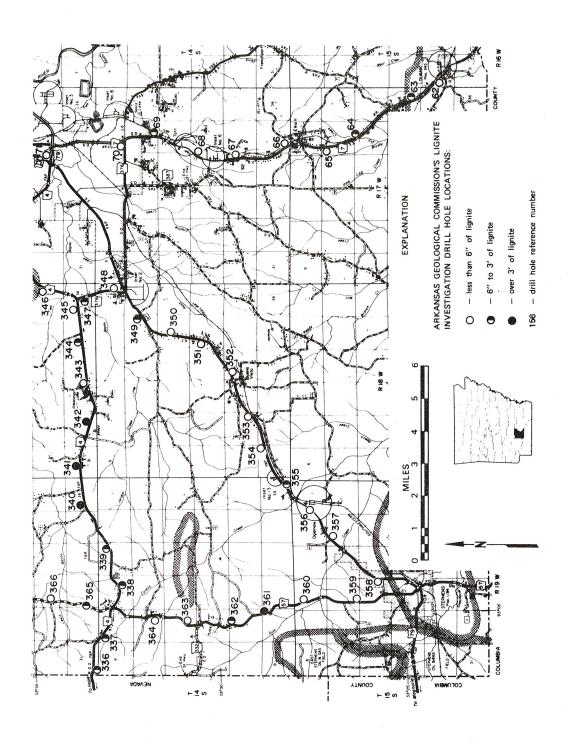
Nevada County



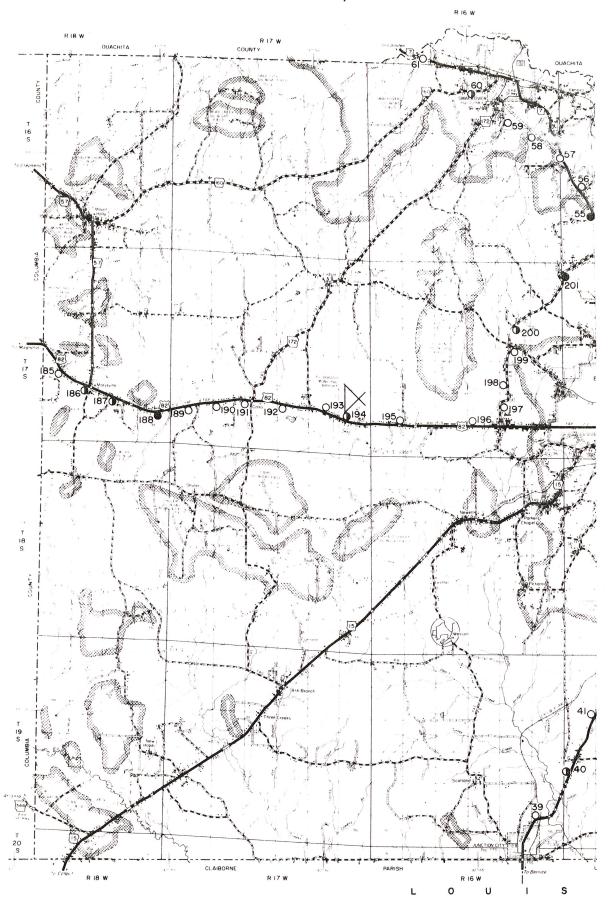
Ouachita County



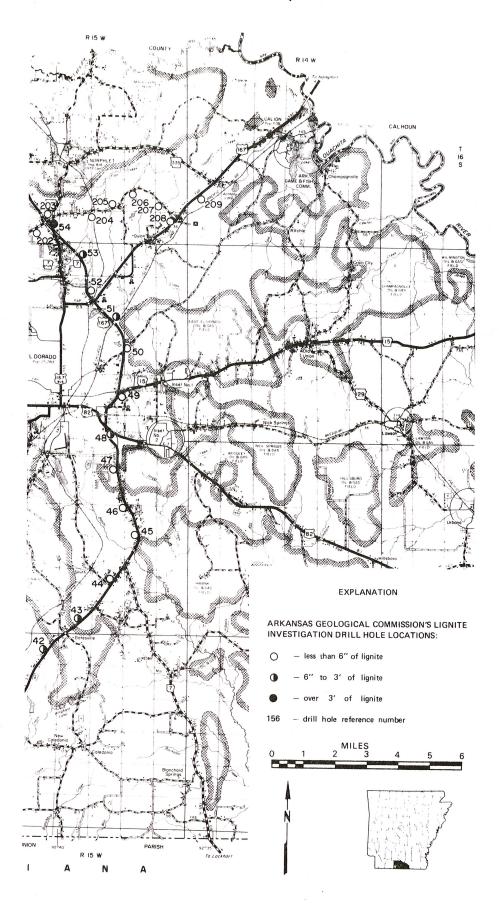
Ouachita County



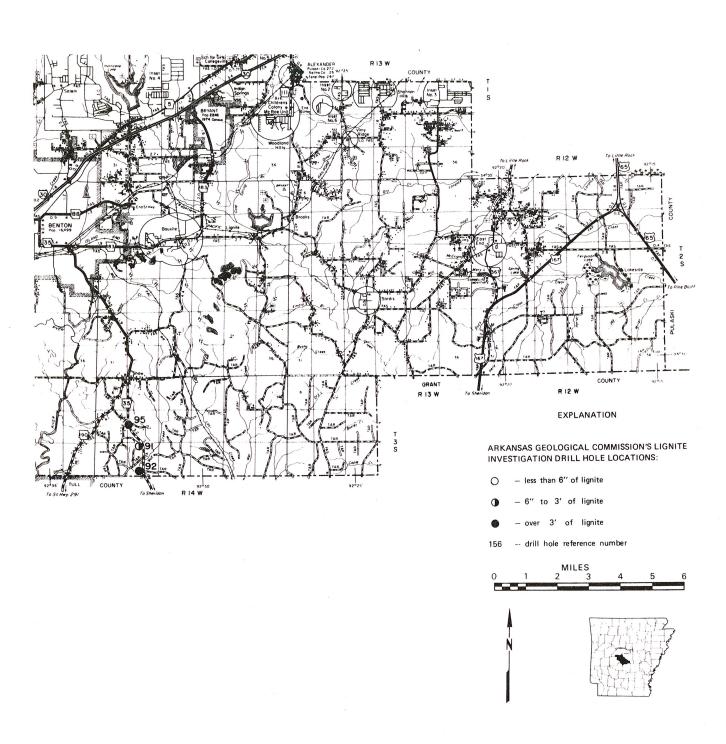
Union County



Union County



Saline County



	No. 1. Elevation 258'		grained sand	73'- 90'	Sand, very-fine-grained, with
	Sec. 23, T. 12 S. R. 22 W.	76′- 80′	Clay, gray to tan, with very fine-		some brown clay and lignite
County, N Logged by	evada : D. W. Lumbert 10/76.	80'- 86'	grained sand Sand, with iron concretions and	90′-112′	stringers @ 73', 83' and 86' Sand, fine-grained, with traces
0'- 10'	Sand, coarse- grained, with red clay and humus	86'- 9 0 '	some white clay layers Sand, very fine-grained, with	440/447/	of lignite and some light-brown to gray clay
10'- 16'	Sand, coarse-grained, with some red clay	90'- 91' 91'- 96'	tan to reddish tan clay layers Siderite Sand, medium to fine-grained,	112′-117′ 117′-118′	Clay, gray, with very fine- grained said
16'- 20'	Clay, light-gray, turning to dark- gray, with traces of lignite	96′-103′	with white clay Clay, white, to gray, with fine-	118′-118	Clay, brown, with very fine sand
20'- 25'	Clay, darkgray, with fractured lignite	103′-105′	grained sand Sand, medium to coarse-grained	123′-124′	Clay, gray, w/very fine-grained sand
25'- 30'	Contact between Wilcox and Midway formations, small gravel	105′-106′	with iron concretions Lignite	124'-125'	Lignitic clay, with very-fine sand
	with mixed red clay and coarse sand, some woody lignite	106'-116' 116'-120'	Clay, gray, with very-fine sand Clay, dark-gray, with trace of	125′-126′	Clay, brown to light tan, with very-fine grained sand Lignite, hard
30′- 33′	Clay, dark-gray, with subcon- choidal fracture T. D.: 33'		lignite and very fine sand T. D.: 120'	126'-127' 127'-150'	Clay, light-gray to blue, with some silt and fine sand T. D.: 150'
Daill Hala	N- 2 51 1 0001		No. 4. Elevation 270'		1. 5 150
Location:	No. 2. Elevation 380' SE¼, Sec. 24. T. 12 S., R. 22 W.		NW¼, Sec. 6, T. 13 S., R. 21 W.	D.::::11-1-	N 0 =
County, N	evada	County, N Logged by	evada : D. W. Lumbert 10/76.		No. 6. Elevation 380' NW¼, Sec. 17, T. 13 S., R. 21 W.
Logged by	: D. W. Lumbert 10/76.	,		County, N	
0'- 10'	Sand, medium-grained, with red	0'- 8'	Clay, reddish an, with medium- grained sand and humus	0'- 5'	
10'- 20'	clay Sand, medium coarse- grained,	8'- 28'	Clay, white, with fine-grained sand and iron concretions	5'- 7'	sand Clay, white, kaolinite
20'- 30'	with red and tan clay Sand, fine- grained, with clay,	28'- 33'	Clay, dark to light-gray, with trace of lignite and fine-grained	7'- 10'	Clay, dark-gray, carbonaceous, with some sand
30'- 40'	tan to white Sand, fine- grained, with white	33'- 33,5	sand 5' Lignite	10'- 14'	Clay, lignitic, with very fine- grained sand
40'- 50'	clay nodules Clay, white, with thin beds of	33.5′- 43′	Clay, gray to dark-gray, with very fine sand	14'- 17'	Clay, brown, carbonaceous, fissile
50'- 60'	fine-grained sand Sand, fine to medium-grained,	43'- 44' 44'- 46'	Lignite Clay, lignitic, with fine-grained	17′-17.5′ 17.5′- 37′	Sand, very fine-grained Clay, brown, fissile, with very
60'- 83'	with white and tan clay Clay, white, some fine-grained	46'- 49'	sand Clay, gray, with fine-grained	37'- 40'	fine sand Clay, sideritic, with iron nodules
83'- 93'	sand Gravel and coarse-grained sand	49'- 50'	sand Lignite, with dark-gray clay	40'- 44'	and siderite layers Clay, brown, with very fine-
	with white clay fragments The coarse material in the	50'- 55' 55'- 56'	Clay, light-blue Lignite, hard	44'- 70'	grained sand Clay, brown to light-brown,
93'- 95'	gravel is granule size. Clay, gray, with traces of lignite	56'- 57' 57'- 60'	Clay, gray to dark-gray Clay, light-gray to light-blue		fissile, with very fine-grained sand
95'-1 00 '	and sand Sand, medium to coarse, with	60′- 78′	Clay, gray to light-brown, coarsely crystalline	70'- 72' 72'- 73'	Sand, very fine-grained Clay, gray, with very fine-
100′-118′	some gray clay Sand, fine-grained, with gray	78'-78.5' 78.5'- 86'	Lignite Clay, light-gray to brown	73'- 84'	grained sand Clay, brown, with very fine
118'-124'	clay Sand, fine-grained, with gray clay	86'- 87' 87'- 89'	Clay, dark-brown, with some silt Lignite, with some lignitic clay		grained sand, @ 84' siderite T. D.: 84'
124'-140' 140'-150'	Clay, gray, with fine sand Clay, gray, with plant fragments	89'- 90' 90'- 92.5	Clay, dark-brown to gray 'Lignite, hard		
140 -130	and fine-grained sand T. D.: 150'	92.5 <u>'</u> 97' 97'- 98'	Clay, light-gray to light-blue	Location:	No. 7. Elevation 290' SE¼, Sec. 17, T. 13 S., R. 21 W.
	1. 5 130	98′-101′ 101′-103.5	Clay, gray Sand, very-fine grained, with	County, N	evada : D. W. Lumbert 10/76.
Drill Hole I	No. 3. Elevation 350'	103.5′-104	clay stringers L'Lignite	0'- 4'	Clay, red to tan,
Location: County, Ne	SE¼, Sec. 25, T. 12 S., R. 22 W.	104'-108' 108'-111'	Clay, light-gray to blue	4'- 40'	Clay, gray to brown, with very
	D. W. Lumbert 10/76.	111'-112' 112'-126'	Clay, brown Lignite Clay, light-gray, with some	40'- 48'	fine-gained sand Clay, light to dark-brown, with
0'- 10'	Clay, red, with medium to fine-	112 120	Clay, light-gray, with some very fine-grained sand T. D.: 126'	404	traces of lignite and very fine- grained sand
10'- 19'	grained sand Clay, white to light tan, with		1. D 126	48'- 55'	Clay, light gray, with very fine- grained sand and traces of
19'- 22'	fine-grained sand Clay, dark gray, with fine-grain-	Drill Hole	No. 5. Elevation 270'	55'- 56'	glauconite Sand, very fine-grained,
22'- 36'	ed sand Clay, gray, with sand	County, No	- 111	56'- 7 0 '	Clay, gray to brown, traces of lignite and thin layers of fine-
36'- 42.5 42.5'- 44'	Clay, dark-gray, with some sand Clay and sand as above with		: D. W. Lumbert 10/76.	70′-110′	grained sand Sand, very fine-grained, with
44'- 56'	ironstone concretions	0'- 10'	Clay, tan, with medium-grained sand		many thin layers of gray to brown, sometimes fissile, clay
56'- 57'	Clay, light tan, with some sand Clay, as above, with ironstone	10′- 20′	Clay, brown, lignitic, with medium to fine-grained sand	110′-120′	and traces of lignite Clay, brown, fissile, pyritic,
57'- 61' 61'- 75'	concretions Clay, tan, with fine-grained sand	20'- 54' 54'- 60'	Clay, brown, lignitic, with silt Clay, light-brown, plastic with	120'-150'	with very fine-grained sand Sand, very fine-grained with
75'- 76'	Clay, white, with thin layers of very fine-grained sand	60'- 73'	fine-grained sand Sand, fine-grained, with brown		brown fissile clay and traces of lignite
/5 - /6	Clay, lignitic, with very fine-		clay layers and trace of lignite		T. D.:150'

		ARKANSA	S LIGNITE INVESTIGATIONS		
	No. 8. Elevation 345' NE¼, Sec. 28, T. 13 S., R. 21 W.		No. 10. Elevation 370' SW¼, Sec. 4, T. 14 S., R. 21 W.	40'- 43'	Clay, gray, very silty with trace of lignite
County, No		County, N		43'- 43½' 43½-50'	
0'- 3'		0'- 6'	Clay, red to tan, with fine-	50'- 53'	siderite and traces of lignite Clay, gray, with silt
3'- 5'	grained sand Clay, white, with fine-grained	6'- 20'	grained sand Clay, brown to gray, with silt	53'- 57'	Clay, dark brown, with trace of lignite
	sand	20'- 48'	Clay, gray to dark-gray, silty,	57'- 60'	Lignite
5'- 10'	Clay, dark brown, with fine- grained sand	48'- 54'	with traces of lignitic material Clay, gray, silty, with trace of	60'- 65'	Clay, gray, interbedded with very fine sand
10'- 12'	Clay, green, glauconitic, mica- ceous	54'- 56'	lignite Lignite stringers, with very fine	65'- 67 67'- 70'	Clay, gray, with very fine sand Sand, very fine
12'- 12½ 12½'-15'	'Siderite Clay, brown, with layers of	56'- 58'	sand Sand, fine	70'- 73'	Clay, brown, lignitic, with wary fine sand
15'- 16'	glauconitic material Siderite and ironstone	58'- 60' 60'- 62'	Clay, gray, with sand Sand, very fine, with gray clay	73'- 88'	Sand, very fine, with some gray to brown clay
16'- 22'	Clay, brown, with glauconitic	62'- 66' 66'- 68'	Clay, gray, with very fine sand	88'- 90'	Clay, gray, with trace of lignite
22'- 23'	layers Clay, green, very galuconitic		Clay, lignitic, with very fine sand	90′-107′ 107′-110′	Clay, gray, with silt Clay, gray and brown
23'- 39'	Clay, brown to dark-brown, with a trace of lignite	68'- 70' 70'-105'	Clay, gray, with very fine sand Clay, gray, glauconitic, silty,	110′-118′	Clay, brown, with trace of lignite and very fine sand
39'- 40'	Sand, very fine-grained, with lignite		with trace of lignite @ 80' and siderite layer @ 85'	118′-124′ 124′-125′	Clay, gray, with very fine sand Clay, brown, with very fine
40′- 60′	Clay, brown to dark-brown, lignitic, with very fine sand	105′-106′ 106′-125′	Lignite, with silt Clay, gray, silty	125′-130′	sand Clay, gray
60′- 80′	Clay, brown, oily, with very fine sand	125′-128′ 128′-130′	Sand, fine, with lignitic clay Clay, lignitic, with very fine	130′-138′ 138′-140′	Silt, with gray clay Lignite, with brown clay and
80'- 96' 96'-116'	Clay, brown Clay, brown, fissile, micaceous,	130′-150′	sand Sand, very fine, with lignite	140′-150′	fine sand Clay, gray, with very fine sand
116′-119′	with very fine sand Clay, lignitic, with very fine sand		traces T. D.: 150'		and layers of siderite Core Interval 50'-60'
119′-121′ 121′-129′	Lignite, with brown clay	Daill Uala	N- 11 Flancia 005/		Recovered: Lost:
129'-130'	Clay, lignitic, brown, with some very fine sand	Location:	No. 11. Elevation 365' SE¼, Sec. 8, T. 14 S., R. 21 W.		50' - 56' Clay, brown and gray, silty
130′-148′	Siderite Clay, brown, lignitic, with very	County, N Logged by	evada : D. W. Lumbert 10/76.		56' - 60' Lignite showed in cut- tings; no recovery
148′-150′	fine sand Clay, lignitic, brown, with very	0'- 3'	Clay, red to tan, with sand		T. D.: 150'
	fine sand T. D.: 150'	3′- 11′	Clay, white, with iron stain and fine sand		No. 13. Elevation 330' SE¼, Sec. 20, T. 14 S., R. 21 W.
		11′- 12′ 12′- 19′	Clay, brown, with fine sand Clay, gray, with fine sand	County, No Logged by	evada : D. W. Lumbert 10/76.
Drill Hole	No. 9. Elevation 348'	19'- 20' 20'- 45'	Clay, brown, with fine sand Clay, gray, silty, and glauconitic	0'- 7'	
Location: County, N	SW¼, Sec. 33, T. 13 S., R. 21 W.	45′-46′	in places Sand, fine grained, with gray	7'- 9'	to fine sand Clay, gray to white, with fine
	D. W. Lumbert 10/76.	46'- 53'	clay		sand
0'- 3'	Clay and to the wish fire	53'- 54'	Clay, gray, lignitic, silty Sand, very fine, with gray clay	9'- 10' 10'- 13'	Sand, fine, with clay, yellow Sand, medium, with small gravel
3'- 14'	Clay, red to tan, with fine- grained sand	54'- 68' 68'- 75'	Clay, gray, silty Clay, brown, lignitic, silty	13′- 18′	Clay, dark brown, with fine sand and stringer of lignite
	Clay, tan to white, with fine grained sand	75'- 77' 77'- 8 0 '	Clay, gray, silty Clay, brown, lignitic, with very	18'- 22'	@ 13' Clay, gray, with fine sand
14'- 17'	Clay, dark-gray, with trace of lignite and very fine sand	80'- 90'	fine sand Sand, very fine, with gray clay	22'- 35'	Clay, gray, with fine sand Sand, fine grained, with traces of lignite and gray clay
17'- 20'	Clay, gray, with fine grained sand	90′-110′	Clay, gray, silty, with trace of lignite and siderite stringer	35'- 36' 36'- 40'	Clay, brown, with fine sand Clay, gray, silty
20'- 37'	Clay, gray, silty, with trace of lignite	110′-120′	Silt, with gray clay and chunks of lignite	40'- 55'	Clay, light-brown to light-gray, with trace of lignite, and fine
37′- 89′	Clay, gray to brown, silty, with traces of lignite and glauconite	120′-137′ 137′-145′	Clay, gray, with silt and lignite Silt, with tan, brittle clay,	55′- 56′	sand Sand, fine, with thin layer of
89'- 90'	Cuttings were oily. Clay, brown, with traces of	145′-150′	lignite and glauconite Clay, gray, silty	56'- 68'	lignite Clay, gray, with silt
90'-100'	lignite and very fine sand Clay, gray to brown, layered with glauconite and very fine		T. D.: 150'	68'- 70' 70'- 80'	Clay, brown, with very fine sand Clay, brown to light-gray, silty,
100′-103′	sand Sand, very fine, with gray clay	Deill Hala	No. 12 Flooring 2007	80'-120'	with trace of lignite Silt to very fine sand, packed
103′-110′	Clay, gray, with trace of lignite	Location:	No. 12. Elevation 320' NE¼, Sec. 17, T. 14 S., R. 21 W.	120'-123'	with some gray clay Lignite, with brown clay
110′-123′	and very fine sand Clay, gray,	County, No Logged by	evada : D. W. Lumbert 10/76.	123′-124′ 124′-132′	Clay, brown, with silt Lignite
123′-127′ 127′-130′	Clay, brown, with sand Clay, gray, with silt	0'- 5'	Clay, red to tan, with fine sand	132′-15 0 ′	Sand, lignitic Core Interval 120'-130'
130′-132′	Clay, brown, lignitic, with very fine sand	5'- 17' 17'- 26'	Clay, white, with very fine sand Sand, very fine, clean		Recovered: Lost:
132′-138′ 138′-140′	Clay, gray, with silt Sand, very fine, with gray clay	26'- 30'	Clay, gray, lignitic, with very fine sand		Note: Core lost due to large
140′-150′	and a trace of lignite Clay, gray and brown layered,	30'- 37'	Sand, very fine, with silt and		quantity of sand and silt. Cuttings indicate lignite at this
	with very fine sand T. D.: 150'	37'- 38' 38'- 40'	clay Clay, gray, with silt		section was several thin seams within very fine sand.
		30 - 40	Lignite, with clay		T. D.: 150'

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Drill Hole No. 14. Elevation 360'	gray clay	very fine sand
Location: SW¼, Sec. 28, T. 14 S., R. 21 W. County, Nevada	81½' 82' Siderite	80'108' Sand, fine, with gray clay,
Logged by: D. W. Lumbert 10/76.	82'- 92½' Sand, very fine, with gray clar and trace of lignite	
10,70.	92½'-94' Lignite and brown clay, with sil	108'-116' Clay, light-brown and gray, with very fine sand
0'- 3' Silty loam soil	94'- 98' Clay, brown, lignitic, with sil	@ 113' siderite layer
3'- 12' Silt, gray, with abundant clay 12'- 17' Sand, fine to medium	98'-100' Clay, light-gray, w/very fine sand	116'-120' Sand, very fine, with gov clay
12'- 17' Sand, fine to medium 17'- 40' Clay, dark gray, silty, inter-	100'-110' Sand, very fine, and silt, with	120'-130' Clay, gray ight-gray, con-
bedded with beds of gray silt	layers of light-brown and light gray clay	
some slightly lignitic	110'-112' Clay, brown to dark brown	
40'- 45' Sand, tan, fine, with silt	with very fine sand	@ 148' siderite layer
45'- 48' Sand, packed, tan, fine 48'- 51' Clay, gray and brown, silty	112'-115' Lignite and dark brown clay	T. D.: 149'
51'- 54' Lignite, with some silty clay	with very fine sand 115'-122' Sand, very fine, with silt and	D-9111-1-N- 40 E
54'- 56' Clay, brown to dark-brown,	115'-122' Sand, very fine, with silt and brown clay	Drill Hole No. 18. Elevation 345' Location: SW1/4, Sec. 21, T. 15 S., R. 21 W.
with very fine sand and silt	122'-140' Silt, with very little clay	County, Columbia
56'- 64' Clay, gray, with silt 64'- 67' Sand, fine, packed	140'-150' Clay, light gray, with silt	Logged by: D. W. Lumbert 11/76.
64'- 67' Sand, fine, packed 67'- 73½' Clay, gray to light gray, w/silt	T. D.: 150'	0/ 0/ 0/
/3½'-/6½' Lignite	Drill Hole No. 16. Elevation 345'	0'- 3' Clay, red and yellow, with fine
76½'-80' Lignite, and clay, brown, with	Location: NW¼, Sec. 9, T. 15 S., R. 21 W	sand 3'- 8' Clay, gray
very fine sand	County, Nevada	8'- 10' Clay, light brown, with consoli-
80'- 83' Very fine sand, silt, w/gray clay 83'- 90' Clay, gray, with silt	Logged by: D. W. Lumbert 11/76	dated bed of fine sand
90'-120' Sand, very fine, with silt and	0'- 5' Clay, red and light-gray layer	10'- 18' Clay, gray to dark gray, lignitic
gray clay	0'- 5' Clay, red and light-gray layer with fine sand	
120'-138' Clay, brown to light brown,	5'- 10' Clay, as abov€	18'- 26' Clay, gray, with beds of very fine sand
with silt, very hard 138'-150' Clay, gray, with silt	10'- 18' Sand, fine, w/trace of lignite	26'- 30' Clay, gray, lignific, with very
138'-150' Clay, gray, with silt Core interval 50'-55'2''	18'- 29' Clay, gray, silty, with trace of	fine sand
Recovered: Lost:	lignite and glauconite 29'- 30' Sand, fine, lignitic	30'- 34' Clay, gray, with very fine sand
3'11'' . 15''	30'- 38' Sand, fine, with gray clay	34'- 38' Clay, gray, hard 38'- 40' Clay, gray, slightly lignific with
50'-50'6" Clay, gray, with very	@ 34' siderite layer	38'- 40' Clay, gray, slightly lignitic, with silt
little silt 50'6''-51'1'' Clay, light brown	38'- 40' Clay, gray, with fine sand	
to gray, with very	40'- 45' Sand, fine, with gray clay	with very fine sand
fine sand	45'- 58' Clay, gray, glauconitic, with fine sand	The same of the sa
51'1"-52' Clay, dark brown,	58'- 59' Sandstone or siderite layer	pyrite nodules 47'- 50' Clay, gray, with lignitic material
with very fine sand,	59' 68' Sand, fine, with gray clay	47'- 50' Clay, gray, with lignitic material and fine sand
lignitic 52'-53'3'' Lignite, large cuttings	68'- 78' Clay, gray, with very fine sand	50'- 57' Sand very fine with gray clay
in mud, and broken	78'- 79' Clay, brown, lignitic, with very	layers and a trace of lignite
core indicate 15" of	fine sand 79'- 93' Sand, very fine, with traces o	57'- 60' Clay, gray to light brown, with
lignite lost at this	lignite and light-gray clay	very fine sand and trace of lignite
interval	93'- 98' Clay, light-gray, with lignite	60'- 67' Sand, very fine, with gray clay
53'3''-54'8'' Lignite, hard 54'8''-55'2'' Clay, dark-brown,	stringers 98'-100' Sand very fine w/trace of lights	67'- 72' Clay, tan to light brown with
lignitic, with very	98'-100' Sand, very fine, w/trace of lignite 100'-110' Clay, gray, with very fine sand	
fine sand	110'-114' Sand, very fine, with clay	72'- 78' Clay, gray, with very fine sand
Core interval 70'-80'	114'-115' Clay, gray, with very fine sand	and trace of lignite 78'- 87' Clay, light brown, with very fine
Recovered: Lost: 7'4'' 2'8''	115'-115½' Siderite	sand and silt
70'-74'2" Clay gray	115½'-120' Clay, gray, with very fine sand	@ 87' lignite stringer
74'2''-74'9'' Lignite	120'-130' Sand, very fine, with fissile, gray clay	87'- 90' Clay, brown to gray, with very
74'9''-75' Sand, fine.	130'-148' Clay, light-gray to gray, with silt	fine sand 90'-113' Silt, w/very fine sand, and gray
75'-77'4'' Lignite 77'4''-80' Section lost, probab-	148'-151' Lignite, with dark-brown clay,	clay
lv sand	and very fine sand	@ 105½' siderite layer
T. D.: 150'	151'-155' Clay, light brown to light gray, with silt	113'-120' Clay, gray, with very fine sand
Drill Hole No. 15. Elevation 375'	T. D.: 155'	and silt 120'-150' Silt, with some very fine sand
Location: SW¼, Sec. 33, T. 14 S., R. 21 W.	Deill Hala Na 17 5	layers, gray clay, and stringers
County, Nevada	Drill Hole No. 17. Elevation 400' Location: SE¼, Sec. 16, T. 15 S., R. 21 W.	of siderite
Logged by: D. W. Lumbert 10/76.	County, Columbia	T. D.: 150'
0'- 5' Clay, red, with fine sand	Logged by: D. W. Lumbert 11/76.	Drill Hole No. 19. Elevation 365'
0'- 5' Clay, red, with fine sand 5'- 12' Clay, light gray, w/very fine sand	0'- 4' Clay red with fine sand	Location: NW¼, Sec. 33, T. 15 S., R. 21 W.
12'- 14' Clay, light-brown, with very fine	// . self with into saila	County, Columbia
sand	4'- 18' Clay, white to light gray, with fine sand	Logged by: D. W. Lumbert 11/76.
14'- 28' Clay, dark gray, with silt 28'- 30' Clay, brown fine sand and	18'- 23' Clay, light to dark brown, with	0'- 8' Clay, red and gray layered, with
28'- 30' Clay, brown, fine sand and siderite layers	very fine sand	fine sand
30'- 45' Clay, dark gray, w/very fine sand	23'- 34' Clay, dark-gray, with very fine	8'- 11' Clay, light brown, with very fine
45 - 50° Clay, brown and gray layers.	sand 34'- 40' Clay, gray, slightly glauconitic,	sand
with very fine sand and trace	with very fine sand	11'- 16' Clay, dark brown 16'- 17' Clay, gray, with silt
of lignite 50'- 64" Sand very fine with light gray	40'- 46' Clay, gray, with brown lignitic	17'- 20' Clay gray
50'- 64' Sand, very fine, with light gray clay and traces of lignite	clay, and very fine sand	20'- 24' Clay, gray, glauconitic, w/very
64'- 75' Clay, gray, with very fine sand	46'- 50' Clay, gray, glauconitic 50'- 60' Clay, gray, glauconitic, with	fine sand
and trace of lignite	very fine sand	24'- 38' Clay, gray, glauconitic, with
@ 64' 2'' layer of siderite 75'- 81½' Very fine sand and silt, with	@ 55' lignite seam	very fine sand and trace of lignite
and and sitt, with	60'-80' Clay, gray, glauconitic, with	38'- 46' Clay, gray to brown, with very

	fine sand	54'- 55'	Sand, fine, lignitic	87'- 89'	Sand, fine, with lignite
46'- 62'	Clay, light gray, glauconitic,	55'- 68'	Clay, bluish-gray, with inter-	89'- 90'	Clay, gray, with very fine sand
62'- 70'	with very fine sand and silt Clay, gray, glauconitic, with very fine sand, trace of lignite	68'- 87'	bedded, very fine sand Clay, gray to bluish-gray, with layers of very fine sand	90′-100′	Sand, fine, interbedded with gray and brown clay, with a
70'- 73'	Clay, brown, lignitic, with very fine sand	87'- 87½ 87½-90'	'Sand, very fine	100'-116'	trace of lignite Clay, gray, silty, glauconitic,
73'- 78'	Sand, very fine, with brown and gray layered clay	90'- 97'	Clay, gray, glauconitic, lignitic,	116′-150′	with siderite layer at 105' Clay, light brown to gray, with
78′-106′	Clay, gray, glauconitic, silty, with trace of lignite and some	97′- 97½ 97%′-106	with very fine sand 'Sand, very fine 'Clay, gray, glauconitic, with		very fine same T. D.: 150'
10011101	thin siderite beds		very fine sand		No. 24. Elevation 280'
106′-118′	Clay, gray to light brown, with very fine sand	106′-110′ 110′-120′	Silt, with some glauconitic clay Clay, gray, fissile, with layers	Location: County, Co	SE¼, Sec. 35. T. 16 S., R. 21 W.
118′-120′	Silt and very fine sand, packed, with gray clay	120′-123′	of very fine sand Clay, dark gray to green, glau-		: D. W. Lumbert 11/76.
120′-150′	Clay, layered gray and brown,		conitic, with very fine sand	0'- 5'	Clay, red to tan, with fine sand
	with very fine sand and thin siderite layers	123′-125′ 125′-129′	Clay, white Clay, gray, glauconitic, with	5'- 6' 6'- 8'	Gravel, pea-size Clay, white to tan, with fine
	T. D.: 150'	129′-129½		8'- 10'	sand Clay, dark-brown, lignitic, with
		129½-134	Clay, gray, glauconitic, with very fine sand	10'- 11'	fine sand Lignite, with some brown clay
	No. 20. Elevation 380'	134'-150'	Clay, brown, with very fine	11'- 20'	Clay, gray, with fine sand
Location: County, Co	NE¼, Sec. 5, T. 16 S., R. 21 W.		sand T. D.: 150'	2 0 ′- 28′	Clay, gray, with brown layers,
	D. W. Lumbert 11/76.		1. D.: 190	28'- 30'	fissile, and fine sand Clay, light gray, with very fine sand
o			No. 22. Elevation 385'	30'- 45'	Clay, gray, glauconitic, with
0'- 4' 4'- 6'	Clay, red, with very fine sand Clay, yellow, with very fine	Location: County, Co	NE¼, Sec. 16, T. 16 S., R. 21 W.	45'- 50'	fine sand
	sand		D. W. Lumbert 11/76,	45 - 50	Clay, light gray with bluish tint
6'- 10'	Clay, gray, with silt, banded with red and yellow clay	0'- 2'	Clay red with fine and and	50′- 61½	'Clay, light gray, with very
10'- 20'	Clay, light gray to white	_	Clay, red, with fine sand and humus		fine sand, and siderite layer @ 54'
20'- 24'	Clay, dark brown to black, very	2'- 3½	'Gravel, iron cemented	611/2' 63'	Sand, fine
24'- 27'	lignitic, with very fine sand Clay, brown to black, lignitic	3½-12	Clay, light gray, with very fine sand	63'- 72' 72'- 78'	Clay, gray, silty Clay, light brown, with very
27/ 20/	with very fine sand	12'- 16'	Clay, brown, lignitic, with very		fine sand
27'- 28'	Sand, very fine, with brown clay and a trace of lignite	16'- 26'	fine sand Clay, gray, with very fine sand	78′- 80′	Clay, bluish-gray, with very fine
28'- 30'	Clay, dark-brown, with silt	26'- 33'	Clay, light gray, silty, with trace	80'-107'	sand Clay, light bluish-gray, with silt
30′- 60′	Clay, gray, silty, with trace of lignite	33'- 40'	of lignite	107′-109′	Sand, fine, with gray and brown
60'- 69'	Clay, gray, glauconitic, with	40'- 44'	Clay, blue green Clay, gray, with very fine sand	109'-120'	layered clay Clay, brown, lignitic, with very
	trace of lignite and very fine sand	44'- 47' 47'- 50'	Sand, fine		fine sand
69'- 7 0 '	Lignite, with very fine sand	50'- 57'	Clay, gray, with very fine sand Clay, gray to blue, with very	120′-140′	Clay, gray, with very fine sand and siderite layer @ 125'
70′- 80′	Clay, gray, with very fine sand	57'- 64'	fine sand	140'-150'	Clay, brown, silty
80'- 87'	Sand, fine to very fine, w/gray	64'- 79'	Clay, brown, with very fine sand Clay, blue green, with very fine		T. D.: 150'
87′-1 00′	clay Clay, light-gray, with bluish	79'- 85'	sand Clay, brown, laminated with	Drill Hole	No. 25. Elevation 350'
100'-120'	tint, silty Clay, gray to dark-gray, silty	85′- 90′	very fine sand	Location:	NE¼, Sec. 6, T. 17 S., R. 20 W.
120'-140'	Clay, gray, with bright green	90'- 92'	Clay, gray, with very fine sand Clay, brown, laminated with	County, Co Logged by	: D. W. Lumbert 11/76.
140'-150'	glauconitic sand, very fine Clay, gray to dark-gray, with		very fine sand T. D.: 92'	0'- 8'	Clay, red, with fine sand
	very fine sand			8'- 10'	Sand, fine
	T. D.: 150'			10'- 48' 48'- 50'	Sand, very fine, with some clay
			No. 23. Elevation 276'		Clay, dark brown, with trace of lignite and very fine sand
Drill Hole I	No. 21. Elevation 360'		SW¼, Sec. 26, T. 16 S., R. 21 W.	50'- 63'	Sand, very fine, with layers of
Location:	NE¼, Sec. 8, T. 16 S., R. 21 W.	County, Co Logged by:	D. W. Lumbert 11/76,		dark brown clay, and some lignite
County, Co	olumbia : D. W. Lumbert 11/76.	0'- 8'		63'- 64'	Lignite, with very fine sand
		8'- 9'	Clay, reddish tan, with fine sand Gravel, pea-size	64'- 70'	Sand, very fine, with light gray clay
0'- 7'	Clay, red to yellow, with very fine sand	9'- 10'	Clay, grayish pink, with fine sand	70'- 80'	Clay, gray to light brown, with very fine sand
7'- 14'	Clay, light gray to white, with very fine sand	10'- 14'	Clay, white to tan, with very fine sand	80'- 90' 90'-100'	Clay, brown, with very fine sand Clay, dark brown, trace of
14'- 15'	Clay, dark brown, lignitic, with very fine sand	14'- 16' 16'- 20'	Clay, brown, with very fine sand Clay, gray to dark-gray, slightly		lignite, and very fine sand
15'- 27'	Clay, blue-gray, with very fine sand	20'- 30'	lignitic, with very fine sand	100′-107′	Clay, blue-green, glauconitic, with very fine sand and siderite
27'- 29'	Clay, dark gray, with very fine	20 - 30	Clay, gray, with very fine sand and trace of lignite	107′-110′	layer @ 106' Clay, gray, with very fine sand
29'- 29½	sand	30'- 58'	Clay, gray, with very fine sand	110'-137'	Clay, greenish gray, with very
29½-30′	Siderite layer	58'- 70'	Clay, blue-gray, with very fine sand	137′-140′	fine sand Clay, light blue-green
30'- 43'	Clay, gray to dark-gray, with very fine sand, slightly lignitic	70'- 82'	Clay, gray, with very fine sand	140'-150'	Clay, gray to light brown, with
43'- 54'	Clay, gray, with very fine sand	82'- 85' 85'- 87'	Sand, fine Clay, gray, with very fine sand		very fine sand T. D.: 150'

		ATTAMO	S LIGHTL INVESTIGATIONS		
Location: County, C	No. 26. Elevation 300' NE%, Sec. 7, T. 17 S., R. 20 W. olumbia : D. W. Lumbert 11/76.	Location: County, C	No. 29. Elevation 305' NW¼, Sec. 31, T. 17 S., R. 20 W. olumbia : J. M. Howard 11/76.	26' - 30' 30' - 40' 40' - 49' 49' - 50' 50' - 70'	Clay, gray, silty Clay, gray, silty, carbonaceous Clay, brown, silty Clay, gray, silty
0'- 5' 5'- 7'	Clay, red to tan, with fine sand and iron concretions Clay, brown and white layered.	0′- 10′ 10′- 17′	Clay, white to gray, silty Clay, white to gray, silty, with oxidized sandy iron clay balls	70'- 80'	Clay, gray, with some brown layers, with very fine sand Clay, brown to gray layers, with very fine to d
7'- 10' 10'- 21'	very fine sand Clay, white, with very fine sand Clay, gray, with fine sand	17'- 20' 20'- 21'	Sand, brown, medium, lignitic	80′- 90′ 90′-128′	Clay, gray, htly glausonitic with very fine sand Clay, brown to gray, with very
21'- 23' 23'- 28'	Lignite, with dark brown clay and fine sand Clay, gray-green, with fine sand	21'- 23½ 23½'-31'	'Sand, gray, with silt Clay, gray, with fine sand and silt, and trace of lignite	128'-130' 130'-148'	fine sand Clay, bluish-gray, silty
28'- 96'	Sand, fine, with thin beds of gray and gray-green clay, and a few traces of lignite	31'- 56' 56'- 56½	Sand, gray, fine 'Clay, gray, with fine sand and silt, with trace of lignite	148′-150′	Clay, gray, silty, with very fine sand Clay, gray, glauconitic and mica-
96′-120′ 120′-130′ 130′-140′	Clay, gray with blue tint, silty Clay, light blue-gray, with silt Sand, fine, with gray clay	56½'- 60 60'- 68'	Sand, gray, fine	Drill Hole	ceous, with fine sand T. D.: 150' No. 32. Elevation 266'
140′-150′	Clay, gray, glauconitic, with very fine sand T. D.: 150'	68'- 75' 75'- 80'	Clay, brown, with silt Clay, brown, silty, interbedded with gray silty clay	Location: County, C	SE¼, Sec. 17, T. 18 S., R. 20 W.
Drill Hole	No. 27. Elevation 280'	80′- 85½ 85½'86′	'Clay, gray, silty Clay, brown, silty, with thin lignite seams	0'- 4'	
Location: County, C	NE¼, Sec. 18. T. 17 S., R. 20 W.	86′-102 ′ 102′-106′	Clay, gray, silt Clay, brown, silty, with fine sand and siderite @ 105½'	4'- 5' 5'- 12'	Gravel, pea-size Clay, white, silty, with iron- stone concretions
0'- 10' 10'- 13'	Sand and clay, red to tan Sand, with gray and white clay	106′-146′	Clay, gray, silty, with very fine sand and thin layer of siderite @131'	12'- 14' 14'- 20' 20'- 30'	Clay, dark-brown, silty Clay, gray, silty Clay, bluish-gray, with very fine
13'- 15'	layers Clay, gray, with trace of lignite and fine sand	146′-150′	Clay, brown, silty, with fine sand T. D.: 150'	30'- 40'	sand and trace of lignite Clay, bluish-gray, glauconitic, with very fine sand, and siderite
15'- 20' 20'- 30' 30'- 38'	Sand, fine, with gray clay Clay, gray, with very fine sand Clay, gray and brown layered,	Location:	No. 30. Elevation 347' NE¼, Sec. 6, T. 18 S., R. 20 W.	40'- 50'	layer Clay, bluish-green, as above, with beds of brown lignitic clay
38'- 40 ' 40'- 56'	with very fine sand Clay, brown, trace of lignite and very fine sand Clay, gray, silty		: D. W. Lumbert 11/76.	50'- 77' 77'- 80'	Clay, bluish-gray, with very fine sand Clay, dark brown, lignitic, silty
56'- 561/2	Siderite Clay, brown, with very fine sand	0'- 4' 4'- 11' 11'- 12'		80'- 86' 86'-110'	Clay, dark brown, with fine sand and lignite seam Clay, gray, with very fine sand
60'- 70' 70'-105'	Clay, gray and brown, with very fine sand Clay, gray, with very fine sand	12'- 40' 40'- 55'	concretions Clay, white, with some very fine sand and silt Clay, white, with very fine sand	110′-113′ 113′-115′	Clay, gray, glauconitic, with very fine sand and siderite layer Clay, blue-gray, and very fine
105′-107′ 107′-115′ 115′-118′	Sand, fine, with gray clay Clay, gray, with very fine sand Sand, fine, with brown and gray	55'- 60' 60'- 65'	Clay, gray, slightly lignitic, with very fine sand Sand, fine, with gray lignitic	115′-118′ 118′-123′	sand Sand, very fine, with some lignite Clay, gray, with very fine sand
118′-120′ 120′-130′	clay and trace of lignite Clay, gray, with very fine sand Sand, fine, with gray clay	65'- 70'	clay Clay, gray, with trace of lignite and very fine sand	123′-130′	and siderite layer Sand, very fine, with glauconitic
130′-150′	Clay, gray, with very fine sand, siderite @ 145' T. D.: 150'	70'- 90'	Sand, fine, with some thin beds of gray, tan, and white clay and scattering ironstone con-	130′-140′	clay and trace of lignite Clay, gray, glauconitic, with trace of lignite and very fine sand, and a siderite layer @ 131'
Drill Hole	No. 28. Elevation 273'	90'- 95'	cretions Clay, green, glauconitic, with layers of ironstone concretions	140′-150′	Clay, gray, glauconitic, with trace of lignite and very fine sand, with siderite layer @ 144'
County, Co	SE¼, Sec. 24, T. 17 S., R. 21 W. plumbia : D. W. Lumbert 11/76.	95'- 96½ 96½'- 99'	and very fine sand 'Siderite Sand, fine, with some brown to		T. D. 150'
0'- 10' 10'- 30'	Clay, red and tan layers, with fine sand	99′-100′ 100′-120′	gray clay Clay, brown, with very fine sand Clay, gray, with trace of lignite		No. 33. Elevation 275' NW¼, Sec. 28, T. 18 S., R. 20 W. olumbia
30'- 40'	Gravel, medium, with tan and white clay layers, and fine sand Sand, fine, with white clay	120′-140′	and very fine sand, glauconitic in places Clay, gray, with very fine sand	Logged by	: J. M. Howard 11/76. Clay, tan, with medium to fine
40'- 65' 65'- 75'	@ 35' Clay, gray, with very fine sand Clay, dark brown, with very fine	140′-150′	Clay, gray, with brown layers, and very fine sand T. D: 150'	5'- 16' 16'- 20'	sand and silt Clay, white to cream, silty Clay, brown, and silty
75'- 95'	sand and layers of siderite Clay, bluish-gray, with very fine sand, trace of lignite, and siderite layer (25)	Drill Hole	No. 31. Elevation 280'	20'- 22'	Clay, gray, silty 'Clay, gray, silty, interbedded with brown clay, with siderite
95′-1 0 7′ 107′-1 0 9′	siderite layer @ 95' Clay, light brown, silty Clay, dark brown, lignitic, with	County, Co	SE¼, Sec. 7, T. 18 S., R. 20 W. Dlumbia : D. W. Lumbert 11/76.	32½′-44′	layer @ 321/2'
109′-120′	very fine sand Clay, gray, with layers of brown clay, with very fine sand	0'- 10' 10'- 24'	Clay, white, silty Clay, white to light brown,	44'- 46' 46'- 46½'	Clay, gray, silty Sandstone, with a brown carbonate cement
120′-150′	Clay, gray, silty, with siderite layer from 134½' - 136½. T. D.: 150'	24'- 26'	silty Clay, brown, with very fine sand and silt	46½'- 60'	Clay, gray, silty, with fine sand and minor, light-brown, clay stringer

60'- 79'	Clay, blue-gray, silty	100'-120'	Clay, greenish-gray, with very	60'- 67' 67'- 80'	Sand, tan, fine
79'- 80' 80'- 85'	Clay, light brown, silty Clay, gray, silty, with very	120′-130′	fine sand Clay, light-gray to light-brown,		Clay, gray, with silt, and trace of lignite
85′- 90′	fine sand Clay, gray, micaceous, with	130′-150′	with trace of lignite Clay, light blue-green, with silt	80'- 90'	Clay, gray, with thin inter- layers of fine gray sand and
90′-100′	fine sand and silt Silt, gray, with very fine sand and mica		Core interval 35'-45' Recovered: Lost: 2'	90′-132′	silt Clay, greenish-gray, with lignite flakes or partings, ar some
100'-105' 105'-110' 110'-125' 125'-141' 141'-150'	Clay, gray, silty Sand, very fine, gray, with silt Clay, gray, silty, with fine sand Sand, gray, very fine, with silt Sand, glauconitic, fine, with		35'-36' Clay, gray, silty 36'-37' Clay, brown to dark brown, with very fine sand and silt	132′-146′ 146′-150′	fine brow. Clay, light-brown, slightly silty Clay, brown, with lignite stringers T. D.: 150'
141-150	numerous thin siderite seams T. D.: 150'		37'-43' Lignite, hard, with con- choidal fracture 43'-45' Only 2'' of very fine		No. 38. Elevation 320'
Drill Hole	No. 34. Elevation 284'		sand with brown lignitic material recovered T. D.: 150'	County, C	NE¼, Sec. 35, T. 19 S., R. 20 W. olumbia : B. F. Clardy 12/76.
Location: County, C	NE¼, Sec. 4, T. 19 S., R. 20 W.	Drill Hole	No. 36 . Elevation 305'	0'- 5'	Clay, very silty, mottled red and
	: D. W. Lumbert 12/76.	Location:	SE¼, Sec. 16, T. 19 S., R. 20 W.		gray
0'- 7'	Clay, red, tan and brown, with very fine sand	County, C Logged by	olumbia : D. W. Lumbert 12/76.	5'- 25' 25'- 26'	Clay, very silty, light gray Clay, reddish-brown, sandy and glauconitic
7′- 15′ 15′- 17′	Clay, white to light-gray, silty Clay, light-brown, silty, carbon- aceous	0'- 5' 5'- 11' 11'- 13'	Clay, light-gray, with fine sand Sand, with light gray clay	26'- 55' 55'- 77'	Clay, gray, silty and sandy, with some glauconite
17'- 26' 26'- 29'	Clay, light to dark-gray, silty	13'- 17'	fine sand	77'- 91'	Clay, gray, very sandy Clay, dark-gray, silty, sandy,
29- 35'	Clay, dark-gray, with very fine sand and silt		Clay, light-gray, with very fine sand	91′-1 0 5′	with glauconite in places Clay, very silty, sandy, brown,
	Clay, gray to light tan, with very fine sand and siderite layers	17'- 20'	Clay, dark-brown, with trace of lignite and very fine sand	105′-121′	lignitic Sand, semi-consolidated, blue-
35'- 57'	Clay, dark-gray, with traces of lignite and layers of very fine sand	20'- 25' 25'- 27'	Clay, light gray, layered with light-brown, silty clay Clay, light-brown, silty		green glauconitic, clay interbed- ded with thin beds of brown lignitic, silty, clay
57'- 67'	Clay, dark-brown, with layers of gray clay and very fine sand	27'- 28'	Clay, dark-brown, very lignitic with very fine sand	121′-123′	Clay, chocolate brown, with lignite stringers
67'- 70 '	Clay, gray, glauconitic, with very fine sand	28'- 30'	Clay, light-gray, with very fine sand	123′-137′ 137′-142′	Clay, blue-gray, silty Clay, chocolate brown, lignitic,
70′- 85′	Clay, light-gray, silty, slightly lignitic	30'- 40'	Clay, light-gray, interbedded with brown, lightic clay	142′-150′	silty Clay, silty, gray, slightly sandy,
85'- 88 '	Clay, dark-brown, with very fine sand	40'- 441/2	'Clay, gray to light brown, with trace of lignite and very fine		with trace of lignite T. D.: 150'
88'- 92' 92'-110'	Clay, dark-gray, with layers of white clay, and very fine sand	441/2'- 481	sand Lignite, with dark-brown clay,		No. 39. Elevation 140'
110′-130′	Sand, very fine, with gray silty clay and traces of lignite	48'- 50'	and very fine sand Clay, light-brown, with very	County, U	
130′-140′	Clay, gray, with very fine sand Sand, very fine, glauconitic,	50'- 60'	fine sand and lignitic material Sand, fine, with trace of lignite		: D. W. Lumbert 2/77.
140′-141′ 141′-150′	with some gray clay Clay, gray, with very fine sand	60′-100′	Clay, light blue-gray, with very fine sand	0'- 5' 5'- 16'	Sand, fine, with gray clay binder
141-150	Sand, glauconitic T. D.: 150'	100′-110′	Clay, light-gray, with trace of lignite and very fine sand	16'- 20' 20'- 56'	Clay, light-gray to white, silty Sand, very fine, with traces of
Drill Holo	No 25 Elementes 210/	110′-140′	Clay, light-gray, slightly glau- conitic	56'- 62'	lignite, and some gray clay Clay, light-gray, with very fine
Location:	No. 35. Elevation 310' NW¼, Sec. 10, T. 19 S., R. 20 W.	140′-150′	Clay, light blue-gray, with very fine sand	62'- 66'	sand and trace of lignite Sand, fine, glauconitic, mica-
County, C Logged by	olumbia : D. W. Lumbert 12/76.		Core interval 40'-46' Recovered: Lost:	66'- 77'	ceous, with thin beds of siderite Clay, gray, glauconitic, with
0'- 10'	Clay, tan to white, with very fine sand		6' 0' 40'-41½' Clay, brown, with	77′-103′	very fine sand Clay, brown, lignitic, with very
10'- 20'	Clay, white, with pink tint, wtih very fine sand		very fine sand 41½'-45' Lignite 45'-46' Clay, brown, and very	103′-110′	fine sand Clay, light-gray, slightly glau-
20'- 24' 24'- 33'	Clay, white, with very fine sand Clay, light brown to gray, with		45'-46' Clay, brown, and very fine sand T. D.: 150'	110′-120′ 120′-130′	conitic, with very fine sand Clay, gray, silty, micaceous Clay, as above, with siderite
33″- 34′	very fine sand Clay, light brown to dark- brown, layered with silt		No. 37. Elevation 300' NW¼, Sec. 27, T. 19 S., R. 20 W.	130′-140′	@ 122½'-123' Clay, gray, glauconitic, mica- ceous
34'- 35 ½ 35½- 40'	'Clay, light-gray, silty Lignite, friable, silty, increasing-	County, C		140′-150′	Clay, gray to brown, with siderite layers
40'- 41½ 41½'-50'	ly better lignite from 38'-40' 'Lignite, friable Clay, light-gray, with light-	0'- 10'	,,	Dentil	T. D.: 150'
	brown layers, silty, and slightly glauconitic	10'- 23'	clay interbedded Silt, mottled, tan, gray and pink, with clay	Location:	No. 40. Elevation 190' NW¼, Sec. 19, T. 19 S., R. 15 W.
50'- 60'	Clay, gray, slightly glauconitic, with trace of lignite	23'- 28'	Sand, tan, with silt, and trace of lignite	County, U Logged by	nion : D. W. Lumbert 2/77.
60′- 80′ 80′- 90′	Clay, bluish-gray, silty Clay, bluish-gray, glauconitic,	28'- 30' 30'- 47½	Clay, light brown, silty 'Sand, tan, fine, with silt	0'- 22' 22'- 52'	Sand, very fine, with red clay Sand, very fine, with white, red,
90'- 99½	silty, with siderite @ 89' 'Clay, gray, with very fine sand	47½'- 48' 48'- 59'	Sand, tan, fine	52'- 60'	and gray clay binder Clay, gray, with very fine sand
99½′-100′	Lignite	59′- 60′	Clay, gray, with silt		and trace of lignite

00 - 7972	'Sand, very fine, with gray clay binder		with some sand layers, and iron- stone concretion layer @ 33'	60'- 70'	Sand, very fine, with stringer of lignite
79½′ 80′ 80′- 83′	Sand, very fine, with lignite Lignite	40'- 50'	Sand, very fine, with light gray clay	70'- 90' 9 0 '-100'	Sand, very fine, with gray clay Clay, gray, with very fine sand
83'- 90'	Sand, very fine, with lignite and brown clay	50'- 80'	Sand, very fine, with trace of lignite		Clay, gray, slightly glauconitic with trace of lignite
90'-100'	Clay, gray, with very fine sand and trace of lignite	80'- 90' 90'-110'	Sand, very fine, with gray clay Sand, very fine, with trace of	110′-120′ 120′-132′	Clay, gray, with very fine sand Clay, gray to brown, with very
100'-140'	Gray clay, with very fine sand may be packed sand getting	110′-120′	lignite Sand, very fine, lignitic	132′-140′	fine sand Sand, gray, very fine, packed,
140′-150′	very few cuttings Sand, very fine, packed, @ 143' -145' lignitic sand	120'-147' 147'-150' 150'-160'	Sand, very fine Lignite and very fine sand Clay, gray, slightly glauconitic,	140′-150′	with gray clay Clay, gray, silty, micaceous T. D.: 150'
	T. D.: 150'		with very fine sand T. D.: 160'	Drill Hole I	No. 48. Elevation 215'
Drill Hole I	No. 41. Elevation 180'	Drill Hole	No. 44. Elevation 232'	Location: County, Ur	Sec. 34, T. 17 S., R. 15 W.
	SE¼, Sec. 7, T. 19 S., R. 15 W.		NE¼, Sec. 27, T. 18 S., R. 15 W.		D. W. Lumbert 2/77.
	: D. W. Lumbert 2/77.		: D. W. Lumbert 2/77.	0'- 14'	Sand, very fine, with red and tan clay
0'- 12'	Sand, very fine, with gray clay binder and ironstone concretion layer at 7'	0'- 10' 10'- 20'	Sand, red , with clay binder Sand, with interbedded red to tan clay	14'- 20' 20'- 32'	Clay, light gray to white, with very fine sand
	'Clay, light-gray to tan, with very fine sand	20'- 70'		32'- 50'	Sand, very fine, with white clay Clay, light gray to white, with very fine sand
30½ <u>′</u> 62′ 62′- 90′	Clay, dark gray, with trace of		No. 45. Elevation 220'	50'- 64½' 64½' 65'	Sand, very fine, with tan clay Lignite
90'- 911/2	lignite and very fine sand 'Siderite	Location: County, U	SW¼, Sec. 14, T. 18 S., R. 15 W. nion	65'- 7 0'	Clay, gray, glauconitic, with very fine sand
	Sand, fine, with gray clay, and trace of lignite	Logged by	: D. W. Lumbert 2/77.	70'- 80'	Clay, gray, with trace of lignite and very fine sand
100′-110′	Clay, gray, slightly glauconitic with very fine sand		Clay, light gray, with very fine sand	80'-100'	Clay, gray, glauconitic, with very fine sand
110′-15 0 ′	Clay, gray to blue-gray, glaucon- itic, micaceous, silty, with very	10'- 20'	and iron layer at 15'	100′-110′	Clay, gray to brown, with very fine sand
	fine sand T. D.: 150'	20'- 60' 60'- 70'	Sand, very fine, with gray clay Sand, very fine, with trace of	110′-120′	Clay, gray, glauconitic, with very fine sand
D		70'- 80'	lignite Silt, gray	1441/2'1441/2'	'Clay, gray, with very fine sand Siderite, with glauconite on top
Location:	No. 42. Elevation 195' NE¼, Sec. 5, T. 19 S., R. 15 W.	80′- 90′	Sand, very fine, with trace of lignite	145'-15 0 '	Clay, gray, with very fine sand T. D.: 150'
County, Ur Logged by:	nion : D. W. Lumbert	90′-110′	Sand, very fine, with stringer of lignite	Drill Hole I	No. 49. Elevation 200'
0'- 10'	Clay, gray, silty		T. D.: 110'	Location:	NE¼, Sec. 27, T. 17 S., R. 15 W.
0'- 10' 10'- 28' 28'- 30'	Clay, gray, silty Clay, light gray to tan, silty Clay, brown, with very fine		T. D.: 110' No. 46. Elevation 235'	Location: County, Ur	NE¼, Sec. 27, T. 17 S., R. 15 W.
10'- 28'	Clay, light gray to tan, silty Clay, brown, with very fine sand and trace of lignite Clay, iight gray with brown clay	Location: County, U	T. D.: 110' No. 46. Elevation 235' NE¼, Sec. 15, T. 18 S., R. 15 W.	Location: County, Ur Logged by:	NE¼, Sec. 27, T. 17 S., R. 15 W. nion
10'- 28' 28'- 30'	Clay, light gray to tan, silty Clay, brown, with very fine sand and trace of lignite Clay, light gray with brown clay interbedded with very fine sand Clay, light-gray, with very fine	Location: County, U Logged by	T. D.: 110' No. 46. Elevation 235' NE¼, Sec. 15, T. 18 S., R. 15 W. nion : D. W. Lumbert 2/77.	Location: County, Ur Logged by:	NE%, Sec. 27, T. 17 S., R. 15 W. nion D. W. Lumbert 2/77. Sand, very fine, with red clay binder Sand, very fine, with light gray
10'- 28' 28'- 30' 30'- 40'	Clay, light gray to tan, silty Clay, brown, with very fine sand and trace of lignite Clay, iight gray with brown clay interbedded with very fine sand Clay, light-gray, with very fine sand Sand, very fine, with iron stain-	Location: County, U Logged by	T. D.: 110' No. 46. Elevation 235' NE¼, Sec. 15, T. 18 S., R. 15 W. nion	Location: County, Ur Logged by: 0'- 10' 10'- 20' 20'- 30'	NE%, Sec. 27, T. 17 S., R. 15 W. nion D. W. Lumbert 2/77. Sand, very fine, with red clay binder
10'- 28' 28'- 30' 30'- 40' 40'- 46'	Clay, light gray to tan, silty Clay, brown, with very fine sand and trace of lignite Clay, light gray with brown clay interbedded with very fine sand Clay, light-gray, with very fine sand Sand, very fine, with iron stained clay Clay, light gray, with very fine	Location: County, U Logged by 0'- 7'	T. D.: 110' No. 46. Elevation 235' NE%, Sec. 15, T. 18 S., R. 15 W. nion D. W. Lumbert 2/77. Clay, light gray to red, with fine sand Sand, fine, with clay, light gray to red Clay, light gray to white, silty,	Location: County, Ur Logged by: 0'- 10'	NE%, Sec. 27, T. 17 S., R. 15 W. nion D. W. Lumbert 2/77. Sand, very fine, with red clay binder Sand, very fine, with light gray to white clay Sand, very fine, with white to
10'- 28' 28'- 30' 30'- 40' 40'- 46' 46'- 57'	Clay, light gray to tan, silty Clay, brown, with very fine sand and trace of lignite Clay, iight gray with brown clay interbedded with very fine sand Clay, light-gray, with very fine sand Sand, very fine, with iron stained clay Clay, light gray, with very fine sand Sand, very fine, with stringers	Location: County, U Logged by 0'- 7' 7'- 10' 10'- 20' 20'- 25'	T. D.: 110' No. 46. Elevation 235' NE¼, Sec. 15, T. 18 S., R. 15 W. nion : D. W. Lumbert 2/77. Clay, light gray to red, with fine sand Sand, fine, with clay, light gray to red Clay, light gray to white, silty, interbedded with fine sand Clay, white silty	Location: County, Ur Logged by: 0'- 10' 10'- 20' 20'- 30' 30'- 96' 96'-100'	NE%, Sec. 27, T. 17 S., R. 15 W. nion D. W. Lumbert 2/77. Sand, very fine, with red clay binder Sand, very fine, with light gray to white clay Sand, very fine, with white to tan clay Sand, very fine, with thin beds
10'- 28' 28'- 30' 30'- 40' 40'- 46' 46'- 57' 57'- 60'	Clay, light gray to tan, silty Clay, brown, with very fine sand and trace of lignite Clay, iight gray with brown clay interbedded with very fine sand Clay, light-gray, with very fine sand Sand, very fine, with iron stained clay Clay, light gray, with very fine sand Sand, very fine, with stringers of lignite Clay, light gray, glauconitic,	Location: County, U Logged by 0'- 7' 7'- 10' 10'- 20' 20'- 25' 25'- 30' 30'- 37'	T. D.: 110' No. 46. Elevation 235' NE¼, Sec. 15, T. 18 S., R. 15 W. nion : D. W. Lumbert 2/77. Clay, light gray to red, with fine sand Sand, fine, with clay, light gray to red Clay, light gray to white, silty, interbedded with fine sand Clay, white silty Sand, very fine, with white clay Clay, white, silty	Location: County, Ur Logged by: 0'- 10' 10'- 20' 20'- 30' 30'- 96' 96'-100'	NE%, Sec. 27, T. 17 S., R. 15 W. nion D. W. Lumbert 2/77. Sand, very fine, with red clay binder Sand, very fine, with light gray to white clay Sand, very fine, with white to tan clay Sand, very fine, with thin beds of tan and white clay Clay, gray, with very fine sand
10'- 28' 28'- 30' 30'- 40' 40'- 46' 46'- 57' 57'- 60' 60'- 88' 88'- 90' 90'-100'	Clay, light gray to tan, silty Clay, brown, with very fine sand and trace of lignite Clay, iight gray with brown clay interbedded with very fine sand Clay, light-gray, with very fine sand Sand, very fine, with iron stained clay Clay, light gray, with very fine sand Sand, very fine, with stringers of lignite Clay, light gray, glauconitic, with very fine sand Sand, very fine sand Sand, very fine Sand Sand, sery fine Sand Sand, very fine Sand Sand, very fine Sand	Location: County, U Logged by 0'- 7' 7'- 10' 10'- 20' 20'- 25' 25'- 30' 30'- 37' 37'- 40'	T. D.: 110' No. 46. Elevation 235' NE¼, Sec. 15, T. 18 S., R. 15 W. nion : D. W. Lumbert 2/77. Clay, light gray to red, with fine sand Sand, fine, with clay, light gray to red Clay, light gray to white, silty, interbedded with fine sand Clay, white silty Sand, very fine, with white clay Clay, white, silty Sand, very fine, with white and pink clay	Location: County, Ur Logged by: 0'- 10' 10'- 20' 20'- 30' 30'- 96' 96'-100' 100'-110'	NE%, Sec. 27, T. 17 S., R. 15 W. nion D. W. Lumbert 2/77. Sand, very fine, with red clay binder Sand, very fine, with light gray to white clay Sand, very fine, with white to tan clay Sand, very fine, with thin beds of tan and white clay Clay, gray, with very fine sand and lignite stringer Clay, gray, interbedded with
10'- 28' 28'- 30' 30'- 40' 40'- 46' 46'- 57' 57'- 60' 60'- 88' 88'- 90'	Clay, light gray to tan, silty Clay, brown, with very fine sand and trace of lignite Clay, iight gray with brown clay interbedded with very fine sand Clay, light-gray, with very fine sand Sand, very fine, with iron stained clay Clay, light gray, with very fine sand Sand, very fine, with stringers of lignite Clay, light gray, glauconitic, with very fine sand Sand, very fine sand Sand, very fine, interbedded with gray clay, with a trace of	Location: County, U Logged by 0'- 7' 7'- 10' 10'- 20' 20'- 25' 25'- 30' 30'- 37' 37'- 40' 40'- 50'	T. D.: 110' No. 46. Elevation 235' NE½, Sec. 15, T. 18 S., R. 15 W. nion : D. W. Lumbert 2/77. Clay, light gray to red, with fine sand Sand, fine, with clay, light gray to red Clay, light gray to white, silty, interbedded with fine sand Clay, white silty Sand, very fine, with white clay Clay, white, silty Sand, very fine, with white and pink clay Sand, very fine, interbedded with white clay	Location: County, Ur Logged by: 0'- 10' 10'- 20' 20'- 30' 30'- 96' 96'-100' 110'-110' 110'-120'	NE%, Sec. 27, T. 17 S., R. 15 W. nion D. W. Lumbert 2/77. Sand, very fine, with red clay binder Sand, very fine, with light gray to white clay Sand, very fine, with white to tan clay Sand, very fine, with thin beds of tan and white clay Clay, gray, with very fine sand and lignite stringer Clay, gray, interbedded with fine sand and trace of lignite Clay, gray to brown, with fine
10'- 28' 28'- 30' 30'- 40' 40'- 46' 46'- 57' 57'- 60' 60'- 88' 88'- 90' 90'-100' 100'-110'	Clay, light gray to tan, silty Clay, brown, with very fine sand and trace of lignite Clay, iight gray with brown clay interbedded with very fine sand Clay, light-gray, with very fine sand Sand, very fine, with iron stained clay Clay, light gray, with very fine sand Sand, very fine, with stringers of lignite Clay, light gray, glauconitic, with very fine sand Sand, very fine, interbedded with gray clay, with a trace of lignite Sand, very fine, interbedded with gray clay, with a trace of lignite Sand, very fine	Location: County, U Logged by 0'- 7' 7'- 10' 10'- 20' 20'- 25' 25'- 30' 30'- 37' 37'- 40' 40'- 50'	T. D.: 110' No. 46. Elevation 235' NE¼, Sec. 15, T. 18 S., R. 15 W. nion : D. W. Lumbert 2/77. Clay, light gray to red, with fine sand Sand, fine, with clay, light gray to red Clay, light gray to white, silty, interbedded with fine sand Clay, white silty Sand, very fine, with white clay Clay, white, silty Sand, very fine, with white and pink clay Sand, very fine, interbedded	Location: County, Ur Logged by: 0'- 10' 10'- 20' 20'- 30' 30'- 96' 96'-100' 110'-120' 120'-130' 130'-140'	NE%, Sec. 27, T. 17 S., R. 15 W. nion i D. W. Lumbert 2/77. Sand, very fine, with red clay binder Sand, very fine, with light gray to white clay Sand, very fine, with white to tan clay Sand, very fine, with thin beds of tan and white clay Clay, gray, with very fine sand and lignite stringer Clay, gray, interbedded with fine sand and trace of lignite Clay, gray, with very fine sand and trace of lignite Clay, gray, with very fine sand and trace of lignite Clay, gray, interbedded with very fine sand
10'- 28' 28'- 30' 30'- 40' 40'- 46' 46'- 57' 57'- 60' 60'- 88' 88'- 90' 90'-100' 100'-110'	Clay, light gray to tan, silty Clay, brown, with very fine sand and trace of lignite Clay, iight gray with brown clay interbedded with very fine sand Clay, light-gray, with very fine sand Sand, very fine, with iron stained clay Clay, light gray, with very fine sand Sand, very fine, with stringers of lignite Clay, light gray, glauconitic, with very fine sand Sand, very fine sand Sand, very fine sand Sand, very fine Sand, very fine Sand, very fine Clay, light gray, with a trace of lignite Sand, very fine Clay, gray, slightly glauconitic, with a trace of lignite and very	Location: County, U Logged by 0'- 7' 7'- 10' 10'- 20' 20'- 25' 25'- 30' 30'- 37' 37'- 40' 40'- 50' Drill Hole	T. D.: 110' No. 46. Elevation 235' NE½, Sec. 15, T. 18 S., R. 15 W. nion : D. W. Lumbert 2/77. Clay, light gray to red, with fine sand Sand, fine, with clay, light gray to red Clay, light gray to white, silty, interbedded with fine sand Clay, white silty Sand, very fine, with white clay Clay, white, silty Sand, very fine, with white and pink clay Sand, very fine, interbedded with white clay Sand, very fine, interbedded with white clay Sand, very fine T. D.: 65' No. 47. Elevation 220'	Location: County, Ur Logged by: 0'- 10' 10'- 20' 20'- 30' 30'- 96' 96'-100' 110'-110' 110'-120'	NE%, Sec. 27, T. 17 S., R. 15 W. nion D. W. Lumbert 2/77. Sand, very fine, with red clay binder Sand, very fine, with light gray to white clay Sand, very fine, with white to tan clay Sand, very fine, with thin beds of tan and white clay Clay, gray, with very fine sand and lignite stringer Clay, gray, interbedded with fine sand and trace of lignite Clay, gray, with very fine sand and trace of lignite Clay, gray, with very fine sand and trace of lignite Clay, gray, with very fine sand and trace of lignite Clay, gray, with very fine sand and trace of lignite Clay, gray, interbedded with
10'- 28' 28'- 30' 30'- 40' 40'- 46' 46'- 57' 57'- 60' 60'- 88' 88'- 90' 90'-100' 100'-110'	Clay, light gray to tan, silty Clay, brown, with very fine sand and trace of lignite Clay, iight gray with brown clay interbedded with very fine sand Clay, light-gray, with very fine sand Sand, very fine, with iron stained clay Clay, light gray, with very fine sand Sand, very fine, with stringers of lignite Clay, light gray, glauconitic, with very fine sand Sand, very fine, interbedded with gray clay, with a trace of lignite Clay, gray, slightly glauconitic, with a trace of lignite and very fine Sand, very fine Clay, gray, slightly glauconitic, with a trace of lignite and very fine sand Sand, very fine, interbedded Sand, very fine, interbedded	Location: County, U Logged by 0'- 7' 7'- 10' 10'- 20' 20'- 25' 25'- 30' 30'- 37' 37'- 40' 40'- 50' Drill Hole Location: County, U	T. D.: 110' No. 46. Elevation 235' NE½, Sec. 15, T. 18 S., R. 15 W. nion : D. W. Lumbert 2/77. Clay, light gray to red, with fine sand Sand, fine, with clay, light gray to red Clay, light gray to white, silty, interbedded with fine sand Clay, white silty Sand, very fine, with white clay Clay, white, silty Sand, very fine, with white and pink clay Sand, very fine, interbedded with white clay Sand, very fine, interbedded with white clay Sand, very fine T. D.: 65' No. 47. Elevation 220' SE½, Sec. 3, T. 18 S., R. 15 W. nion	Location: County, Ur Logged by: 0'- 10' 10'- 20' 20'- 30' 30'- 96' 96'-100' 110'-120' 120'-130' 130'-140'	NE%, Sec. 27, T. 17 S., R. 15 W. nion D. W. Lumbert 2/77. Sand, very fine, with red clay binder Sand, very fine, with light gray to white clay Sand, very fine, with white to tan clay Sand, very fine, with thin beds of tan and white clay Clay, gray, with very fine sand and lignite stringer Clay, gray, interbedded with fine sand and trace of lignite Clay, gray to brown, with fine sand, and trace of lignite Clay, gray, interbedded with very fine sand and trace of lignite Clay, gray, interbedded with very fine sand Clay, gray, interbedded with very fine sand Clay, gray to tan, interbedded
10'- 28' 28'- 30' 30'- 40' 40'- 46' 46'- 57' 57'- 60' 60'- 88' 88'- 90' 90'-100' 100'-110'	Clay, light gray to tan, silty Clay, brown, with very fine sand and trace of lignite Clay, iight gray with brown clay interbedded with very fine sand Clay, light-gray, with very fine sand Sand, very fine, with iron stained clay Clay, light gray, with very fine sand Sand, very fine, with stringers of lignite Clay, light gray, glauconitic, with very fine sand Sand, very fine sand Sand, very fine Sand, very fine Sand, very fine Sand, very fine Clay, light gray, glauconitic, with gray clay, with a trace of lignite Sand, very fine Clay, gray, slightly glauconitic, with a trace of lignite and very fine sand Sand, very fine, interbedded with gray clay Sand, very fine, interbedded with gray clay Sand, very fine	Location: County, U Logged by 0'- 7' 7'- 10' 10'- 20' 20'- 25' 25'- 30' 30'- 37' 37'- 40' 40'- 50' Drill Hole Location: County, U Logged by	No. 46. Elevation 235' NE½, Sec. 15, T. 18 S., R. 15 W. nion : D. W. Lumbert 2/77. Clay, light gray to red, with fine sand Sand, fine, with clay, light gray to red Clay, light gray to white, silty, interbedded with fine sand Clay, white silty Sand, very fine, with white clay Clay, white, silty Sand, very fine, with white and pink clay Sand, very fine, interbedded with white clay Sand, very fine T. D.: 65' No. 47. Elevation 220' SE½, Sec. 3, T. 18 S., R. 15 W. nion : D. W. Lumbert 2/77.	Location: County, Ur Logged by: 0'- 10' 10'- 20' 20'- 30' 30'- 96' 96'-100' 110'-120' 120'-130' 130'-140' 140'-150'	NE%, Sec. 27, T. 17 S., R. 15 W. nion i D. W. Lumbert 2/77. Sand, very fine, with red clay binder Sand, very fine, with light gray to white clay Sand, very fine, with white to tan clay Sand, very fine, with thin beds of tan and white clay Clay, gray, with very fine sand and lignite stringer Clay, gray, interbedded with fine sand and trace of lignite Clay, gray, with very fine sand and trace of lignite Clay, gray, interbedded with very fine sand Clay, gray, interbedded with very fine sand Clay, gray to tan, interbedded with very fine sand Clay, gray to tan, interbedded with very fine sand and trace of lignite T. D.: 150'
10'- 28' 28'- 30' 30'- 40' 40'- 46' 46'- 57' 57'- 60' 60'- 88' 88'- 90' 90'-100' 100'-110' 110'-127' 130'-140'	Clay, light gray to tan, silty Clay, brown, with very fine sand and trace of lignite Clay, iight gray with brown clay interbedded with very fine sand Clay, light-gray, with very fine sand Sand, very fine, with iron stained clay Clay, light gray, with very fine sand Sand, very fine, with stringers of lignite Clay, light gray, glauconitic, with very fine sand Sand, very fine sand Sand, very fine Sand very fine Clay, with a trace of lignite Sand, very fine, interbedded with gray clay, with a trace of lignite Sand, very fine Clay, gray, slightly glauconitic, with a trace of lignite and very fine sand Sand, very fine, interbedded with gray clay	Location: County, U Logged by 0'- 7' 7'- 10' 10'- 20' 20'- 25' 25'- 30' 30'- 37' 37'- 40' 40'- 50' 50'- 65' Drill Hole Location: County, U Logged by 0'- 10'	T. D.: 110' No. 46. Elevation 235' NE½, Sec. 15, T. 18 S., R. 15 W. nion : D. W. Lumbert 2/77. Clay, light gray to red, with fine sand Sand, fine, with clay, light gray to red Clay, light gray to white, silty, interbedded with fine sand Clay, white silty Sand, very fine, with white clay Clay, white, silty Sand, very fine, with white and pink clay Sand, very fine, interbedded with white clay Sand, very fine T. D.: 65' No. 47. Elevation 220' SE½, Sec. 3, T. 18 S., R. 15 W. nion : D. W. Lumbert 2/77. Sand, very fine, with red clay binder	Location: County, Ur Logged by: 0'- 10' 10'- 20' 20'- 30' 30'- 96' 96'-100' 110'-110' 110'-120' 120'-130' 130'-140' 140'-150'	NE%, Sec. 27, T. 17 S., R. 15 W. nion D. W. Lumbert 2/77. Sand, very fine, with red clay binder Sand, very fine, with light gray to white clay Sand, very fine, with white to tan clay Sand, very fine, with thin beds of tan and white clay Clay, gray, with very fine sand and lignite stringer Clay, gray, interbedded with fine sand and trace of lignite Clay, gray to brown, with fine sand, and trace of lignite Clay, gray, with very fine sand and trace of lignite Clay, gray, interbedded with very fine sand clay, gray, interbedded with very fine sand with very fine sand and trace of lignite T. D.: 150' No. 50. Elevation 210' NW%, Sec. 23, T. 17 S., R. 15 W.
10'- 28' 28'- 30' 30'- 40' 40'- 46' 46'- 57' 57'- 60' 60'- 88' 88'- 90' 90'-100' 110'-127' 127'-130' 140'-150'	Clay, light gray to tan, silty Clay, brown, with very fine sand and trace of lignite Clay, iight gray with brown clay interbedded with very fine sand Clay, light-gray, with very fine sand Sand, very fine, with iron stained clay Clay, light gray, with very fine sand Sand, very fine, with stringers of lignite Clay, light gray, glauconitic, with very fine sand Sand, very fine, interbedded with gray clay, with a trace of lignite Sand, very fine, interbedded with gray clay, with glauconitic, with a trace of lignite sand, very fine Clay, gray, slightly glauconitic, with a trace of lignite and very fine sand Sand, very fine, interbedded with gray clay Sand, very fine, interbedded with gray clay Sand, very fine T. D.: 150'	Location: County, U Logged by 0'- 7' 7'- 10' 10'- 20' 20'- 25' 25'- 30' 30'- 37' 37'- 40' 40'- 50' Drill Hole Location: County, U Logged by 0'- 10' 10'- 20'	T. D.: 110' No. 46. Elevation 235' NE½, Sec. 15, T. 18 S., R. 15 W. nion : D. W. Lumbert 2/77. Clay, light gray to red, with fine sand Sand, fine, with clay, light gray to red Clay, light gray to white, silty, interbedded with fine sand Clay, white silty Sand, very fine, with white clay Clay, white, silty Sand, very fine, with white and pink clay Sand, very fine, interbedded with white clay Sand, very fine T. D.: 65' No. 47. Elevation 220' SE½, Sec. 3, T. 18 S., R. 15 W. nion : D. W. Lumbert 2/77. Sand, very fine, with red clay binder Sand, fine, with interbedded light-gray clay	Location: County, Ur Logged by: 0'- 10' 10'- 20' 20'- 30' 30'- 96' 96'-100' 110'-120' 120'-130' 140'-150' Drill Hole Location: County, Un	NE%, Sec. 27, T. 17 S., R. 15 W. nion D. W. Lumbert 2/77. Sand, very fine, with red clay binder Sand, very fine, with light gray to white clay Sand, very fine, with white to tan clay Sand, very fine, with thin beds of tan and white clay Clay, gray, with very fine sand and lignite stringer Clay, gray, interbedded with fine sand and trace of lignite Clay, gray to brown, with fine sand, and trace of lignite Clay, gray, with very fine sand and trace of lignite Clay, gray, interbedded with very fine sand clay, gray, interbedded with very fine sand with very fine sand and trace of lignite T. D.: 150' No. 50. Elevation 210' NW%, Sec. 23, T. 17 S., R. 15 W.
10'- 28' 28'- 30' 30'- 40' 40'- 46' 46'- 57' 57'- 60' 60'- 88' 88'- 90' 90'-100' 110'-127' 127'-130' 130'-140' 140'-150' Drill Hole N Location: County, Un	Clay, light gray to tan, silty Clay, brown, with very fine sand and trace of lignite Clay, iight gray with brown clay interbedded with very fine sand Clay, light-gray, with very fine sand Sand, very fine, with iron stained clay Clay, light gray, with very fine sand Sand, very fine, with stringers of lignite Clay, light gray, glauconitic, with very fine sand Sand, very fine sand Sand, very fine Sand very fine Sand, very fine, interbedded with gray clay, with a trace of lignite Sand, very fine, interbedded with gray clay fine, interbedded with gray clay sand, very fine, interbedded with gray clay Sand, very fine, interbedded with gray clay Sand, very fine T. D.: 150' No. 43. Elevation 262' NE%, Sec. 33, T. 18 S., R. 15 W.	Location: County, U Logged by 0'- 7' 7'- 10' 10'- 20' 20'- 25' 25'- 30' 30'- 37' 37'- 40' 40'- 50' 50'- 65' Drill Hole Location: County, U Logged by 0'- 10'	T. D.: 110' No. 46. Elevation 235' NE½, Sec. 15, T. 18 S., R. 15 W. nion : D. W. Lumbert 2/77. Clay, light gray to red, with fine sand Sand, fine, with clay, light gray to red Clay, light gray to white, silty, interbedded with fine sand Clay, white silty Sand, very fine, with white clay Clay, white, silty Sand, very fine, with white and pink clay Sand, very fine, interbedded with white clay Sand, very fine T. D.: 65' No. 47. Elevation 220' SE½, Sec. 3, T. 18 S., R. 15 W. nion : D. W. Lumbert 2/77. Sand, very fine, with red clay binder Sand, fine, with interbedded light-gray clay Sand, fine, interbedded with	Location: County, Ur Logged by: 0'- 10' 10'- 20' 20'- 30' 30'- 96' 96'-100' 110'-120' 120'-130' 130'-140' 140'-150' Drill Hole N Location: County, Ur Logged by:	NE%, Sec. 27, T. 17 S., R. 15 W. nion I D. W. Lumbert 2/77. Sand, very fine, with red clay binder Sand, very fine, with light gray to white clay Sand, very fine, with white to tan clay Sand, very fine, with thin beds of tan and white clay Clay, gray, with very fine sand and lignite stringer Clay, gray, interbedded with fine sand and trace of lignite Clay, gray to brown, with fine sand, and trace of lignite Clay, gray, with very fine sand and trace of lignite Clay, gray, interbedded with very fine sand Clay, gray to tan, interbedded with very fine sand Clay, gray to tan, interbedded with very fine sand and trace of lignite T. D.: 150' No. 50. Elevation 210' NW%, Sec. 23, T. 17 S.,R. 15 W. nion
10'- 28' 28'- 30' 30'- 40' 40'- 46' 46'- 57' 57'- 60' 60'- 88' 88'- 90' 90'-100' 110'-127' 127'-130' 140'-150' Drill Hole N Location: County, Ur Logged by:	Clay, light gray to tan, silty Clay, brown, with very fine sand and trace of lignite Clay, iight gray with brown clay interbedded with very fine sand Clay, light-gray, with very fine sand Sand, very fine, with iron stained clay Clay, light gray, with very fine sand Sand, very fine, with stringers of lignite Clay, light gray, glauconitic, with very fine sand Sand, very fine, interbedded with gray clay, with a trace of lignite Clay, gray, slightly glauconitic, with very fine Sand, very fine Sand, very fine Clay, gray, slightly glauconitic, with a trace of lignite and very fine sand Sand, very fine, interbedded with gray clay Sand, very fine T. D.: 150' No. 43. Elevation 262' NE¼, Sec. 33, T. 18 S., R. 15 W. nion D. W. Lumbert 2/77.	Location: County, U Logged by 0'- 7' 7'- 10' 10'- 20' 20'- 25' 25'- 30' 30'- 37' 37'- 40' 40'- 50' Drill Hole Location: County, U Logged by 0'- 10' 10'- 20' 20'- 30' 30'- 38' 38'- 40'	T. D.: 110' No. 46. Elevation 235' NE½, Sec. 15, T. 18 S., R. 15 W. nion : D. W. Lumbert 2/77. Clay, light gray to red, with fine sand Sand, fine, with clay, light gray to red Clay, light gray to white, silty, interbedded with fine sand Clay, white silty Sand, very fine, with white clay Clay, white, silty Sand, very fine, with white and pink clay Sand, very fine, interbedded with white clay Sand, very fine T. D.: 65' No. 47. Elevation 220' SE½, Sec. 3, T. 18 S., R. 15 W. nion : D. W. Lumbert 2/77. Sand, very fine, with red clay binder Sand, fine, with interbedded light-gray clay Sand, fine Sand, fine, interbedded with light gray clay Clay, gray, w/trace of lignite	Location: County, Ur Logged by: 0'- 10' 10'- 20' 20'- 30' 30'- 96' 96'-100' 110'-120' 120'-130' 130'-140' 140'-150' Drill Hole N Location: County, Ur Logged by:	NE%, Sec. 27, T. 17 S., R. 15 W. nion in D. W. Lumbert 2/77. Sand, very fine, with red clay binder Sand, very fine, with light gray to white clay Sand, very fine, with white to tan clay Sand, very fine, with thin beds of tan and white clay Clay, gray, with very fine sand and lignite stringer Clay, gray, interbedded with fine sand and trace of lignite Clay, gray to brown, with fine sand, and trace of lignite Clay, gray, interbedded with very fine sand Clay, gray, interbedded with very fine sand Clay, gray to tan, interbedded with very fine sand Clay, gray to tan, interbedded with very fine sand and trace of lignite T. D.: 150' No. 50. Elevation 210' NW%, Sec. 23, T. 17 S., R. 15 W. nion D. W. Lumbert 2/77. Sand, very fine, interbedded with tan and gray clay
10'- 28' 28'- 30' 30'- 40' 40'- 46' 46'- 57' 57'- 60' 60'- 88' 88'- 90' 90'-100' 110'-127' 127'-130' 130'-140' 140'-150' Drill Hole N Location: County, Un	Clay, light gray to tan, silty Clay, brown, with very fine sand and trace of lignite Clay, iight gray with brown clay interbedded with very fine sand Clay, light-gray, with very fine sand Sand, very fine, with iron stained clay Clay, light gray, with very fine sand Sand, very fine, with stringers of lignite Clay, light gray, glauconitic, with very fine sand Sand, very fine sand Sand, very fine Sand very fine Sand, very fine, interbedded with gray clay, with a trace of lignite Sand, very fine, interbedded with gray clay fine, interbedded with gray clay sand, very fine, interbedded with gray clay Sand, very fine, interbedded with gray clay Sand, very fine T. D.: 150' No. 43. Elevation 262' NE%, Sec. 33, T. 18 S., R. 15 W.	Location: County, U Logged by 0'- 7' 7'- 10' 10'- 20' 20'- 25' 25'- 30' 30'- 37' 37'- 40' 40'- 50' Drill Hole Location: County, U Logged by 0'- 10' 10'- 20' 20'- 30' 30'- 38'	T. D.: 110' No. 46. Elevation 235' NE½, Sec. 15, T. 18 S., R. 15 W. nion : D. W. Lumbert 2/77. Clay, light gray to red, with fine sand Sand, fine, with clay, light gray to red Clay, light gray to white, silty, interbedded with fine sand Clay, white silty Sand, very fine, with white clay Clay, white, silty Sand, very fine, with white and pink clay Sand, very fine, interbedded with white clay Sand, very fine T. D.: 65' No. 47. Elevation 220' SE½, Sec. 3, T. 18 S., R. 15 W. nion : D. W. Lumbert 2/77. Sand, very fine, with red clay binder Sand, fine, with interbedded light-gray clay Sand, fine Sand, fine, interbedded with light gray clay	Location: County, Ur Logged by: 0'- 10' 10'- 20' 20'- 30' 30'- 96' 96'-100' 110'-120' 120'-130' 130'-140' 140'-150' Drill Hole N Location: County, Ur Logged by: 0'- 30'	NE%, Sec. 27, T. 17 S., R. 15 W. nion I D. W. Lumbert 2/77. Sand, very fine, with red clay binder Sand, very fine, with light gray to white clay Sand, very fine, with white to tan clay Sand, very fine, with thin beds of tan and white clay Clay, gray, with very fine sand and lignite stringer Clay, gray, interbedded with fine sand and trace of lignite Clay, gray to brown, with fine sand, and trace of lignite Clay, gray, with very fine sand and trace of lignite Clay, gray, interbedded with very fine sand Clay, gray to tan, interbedded with very fine sand Clay, gray to tan, interbedded with very fine sand and trace of lignite T. D.: 150' No. 50. Elevation 210' NW%, Sec. 23, T. 17 S., R. 15 W. nion D. W. Lumbert 2/77. Sand, very fine, interbedded

Drill Hole	No.51. Elevation 182'	134'-135½	o' Lignite		Core interval 20' 25'
Location:	Sec. 15, T. 17 S., R. 15 W.		O'Clay, gray, with interbedded		Recovered: Lost:
County, U Logged by	nion : D. W. Lumbert 2/77.	140′-150′	very fine sand Sand, very fine, with inter-		5' 0' 20' - 21'8'' Clay, brown, ligni-
0'- 10'	Clay, tan to light brown, with very fine sand		bedded gray clay and stringers of lignite T. D.: 150'		tic, sandy 21'8''-24'2" Lignite, hard
10'- 14'	Clay, light gray, with very fine sand		1 150		24'2"-24'8" Lignite, woody 24'8"-25' Brown, lightic
14'- 25' 25'- 28'	Sand, yellow, very fine Sand, very fine, with brown		No. 54. Elevation 158' Sec. 32, T. 16 S., R. 15 W.		T. D.: 150'
	clay	County, U		Drill Hole	No. 56. Elevation 215'
28'- 29 ' 29'- 30 '	Lignite, and brown clay Clay, brown, with trace of	Logged by	: D. W. Lumbert 2/77.	Location: County, U	SE¼, Sec. 19, T. 16, S., R. 15 W. nion
30'- 46'	lignite Clay, brown, with stringers of	0'- 9'	Clay, red and light gray, with	Logged by	: D. W. Lumbert 3/77.
46'- 54'	lignite and very fine sand Clay, blue-green, with very fine	9'- 10'	very fine sand Clay, brown, carbonaceous,	0'- 10' 10'- 20'	Clay, light gray,w/very fine sand Clay, light gray to light brown,
54'- 60'	sand Clay, brown, with very fine sand		with very fine sand and some lignite	20'- 30'	with very fine sand
60'- 66'	and trace of lignite	10'- 17'	Lignite		Clay, light brown, with inter- bedded very fine sand
66'- 70'	Sand, very fine, with brown clay Clay, brown, with very fine sand	17′- 18′	Clay, brown, with very fine sand	30'- 50'	Sand, fine, with interbedded light brown clay
70'- 80'	and trace of lignite Brown clay, and very fine sand,	18'- 20' 20'- 27'	Clay, gray, with very fine sand Clay, brown, with silt	50'- 65' 65'-110'	Clay, gray, w/very fine sand Sand, fine, with gray clay
80'- 90'	interbedded Clay, brown to gray, very	27'- 30'	Clay, light gray, with very fine sand	110′-120′ 120′-130′	Sand, fine, slightly glauconitic Sand, fine, slightly glauconitic,
90′-100′	sandy Clay, gray, slightly glauconitic.	30'- 39' 39'- 40'	Sand, very fine, with lignite	130′-140′	with gray clay Sand, fine, with lignite stringers
100'-140'	with very fine sand Clay, gray, glauconitic, mica-	40′- 50′	stringers and brown clay	140′-150′	Clay, gray, glauconitic, with
	ceous, with very fine sand and		Sand, very fine, with lignite stringers		very fine sand T. D.: 150'
140'-150'	trace of lignite Clay, gray, interbedded with	50′-100′	Sand, fine Core interval 9' - 17'	Drill Hole	No. 57. Elevation 195'
	very fine sand T. D.: 150'		Recovered: Lost: 8' 0'		SW¼, Sec. 18, T. 16 S., R. 15 W.
			9' - 13'4'' Lignite, hard, with conchoidal fracture		: D. W. Lumbert 3/77.
Drill Hole	No. 52. Elevation 150' Sec. 9, T. 17 S., R. 15 W.		13'4" - 14' Clay, gray & brown,	0'- 10'	Sand, very fine, with red clay
County, U			with lignite partings 14'-17' Clay, gray & brown.	10/ 00/	binder
	: D. W. Lumbert 2/77.		14' - 17' Clay, gray & brown, with very fine sand	10'- 20'	Sand, very fine, with light gray and tan clay layers
0'- 10'	Sand, very fine, with red clay		T. D.: 100′	20'- 70' 70'- 73'	Sand, very fine Clay, brown, with very fine
10'- 20'	gray clay	Drill Hole	No. 55. Elevation 180'	73'- 90'	sand and trace of lignite Sand, very fine
20'- 67'	Sand, very fine, with stringers of lignite	Location: County, U	SW¼, Sec. 29, T. 16 S., R. 15 W.	90'- 96'	Clay, gray to brown, with interbedded very fine sand and
67'- 72' 72'- 8 0 '	Clay, blue-green, with silt Clay, brown, with stringers of		: D. W. Lumbert 2/77.	06/ 100/	trace of lignite
80'- 90'	lignite	0/ 10/		96′-100′ 100′-130′	Clay, gray, with very fine sand Clay, gray, with interbedded
00 - 90	Clay, light brown, and very fine sand	0'- 19'	very fine sand		very fine sand and trace of lignite
	T. D.: 90'	19'- 20'	Clay, light brown, with very fine sand	130′-140′	Clay, gray, with very fine, packed, sand
Drill Hole Location:	No. 53. Elevation 150' Sec. 4 ., T. 17 S., R. 15 W.	20'- 211/2	' Clay, dark brown, with very fine sand	140′-150′	Clay, gray, with very fine sand T. D.: 150'
County, U	nion : D. W. Lumbert 2/77.	211/2'-241/	2' Lignite		
			Clay, dark to light brown, with interbedded very fine sand		No. 58. Elevation 120' NW¼, Sec. 13, T. 16 S., R. 16 W.
	Sand, very fine, interbedded with gray clay	30′- 35′	Clay, light brown, with very fine sand	County, U	nion : D. W. Lumbert 3/77.
10'- 20' 20'- 30'	Clay, gray, with very fine sand Clay, blue-gray, with very fine	35'- 40'	Clay, light gray, with very fine sand	0'- 20'	Sand, very fine
30'- 40'	sand Clay, blue-gray, with very fine	40'- 44'	Clay, gray to brown, with very fine sand	20'- 30'	Clay, dark gray, with very fine sand and trace of lignite
40'- 60'	sand and trace of lignite Sand, very fine	44'- 46' 46'- 55'	Lignite, with very fine sand Sand, very fine, with interbed-	30'- 50'	Clay, blue-gray, with very fine sand
60′- 80′	Sand, very fine, with stringers of lignite	55'- 60'	ded light brown clay Clay, gray, with very fine sand	50'- 70'	Clay, gray, glauconitic, micaceous, with very fine sand
80'- [°] 82' 82'- 8 4'	Sand, very fine Clay, blue-gray, with very fine	60'- 66'	Clay, light brown, with very fine sand	70'- 85'	Clay, gray to brown, with very
84'- 88'	sand Sand, very fine	66'- 70'	Clay, blue-green, with very fine	85'- 9 0 '	fine sand Sand, very fine, with gray to
88'- 94'	Clay, blue gray, with very fine sand and lignite stringers	70'- 85'	sand Clay, green to brown, with trace of lignite and interbedded very	90′-103′	Sand, interbedded with gray
94'-110'	Clay, gray, glauconitic, slightly micaceous, with very fine sand	85′-120′	fine sand Clay, blue-green, silty, with	103′-103½′ 103½′-120′	clay, and trace of lignite Siderite Clay, gray, slightly glauconitic,
110'-117'	and siderite Sand, very fine	120′-130′	trace of lignite at 94' Clay, gray, slightly glauconitic,	120′-130′	with very fine sand Clay, green, very glauconitic,
117′-120′	Clay, gray to brown, with very fine sand	130′-150′	with interbedded fine sand Sand, very fine, with interbed-		with siderite and very fine sand
120'-134'	Clay, blue-gray, with very fine sand	.00 -100	ded gray clay, some glauconite and mica	130′-150′	Clay, gray to brown, with very fine sand T. D. 150'

		ANKANSA	AS LIGHT LE INVESTIGATIONS		
Drill Hole	No. 59. Elevation 150'	10' 20'	Sand, medium to fine	Daill Hala	No. 64 Flooring ACE
Location:	Sec. 11, T. 16. S., R. 16 W.	20' 30'	Clay, gray, glauconitic, with	Location:	No. 64. Elevation 165' Sec. 14, T. 15 S., R. 17 W.
County, L Logged by	v: D. W. Lumbert 3/77.	30'- 33' 33'- 50'	Siderite layer, with large gravel	County, O Logged by	Ouachita v: D. W. Lumbert 3/77.
0'- 13' 13'- 20'		50'- 58'	Clay, gray, with very fine sand Clay, gray, with fine sand T. D.: 58'	0'- 5'	Sand, very fine, with red and tan clay
20'- 60'	with fine sand Sand, very fine, with light gray			5′- 10 ′	Clay, gray, with very fire sand
60'- 70'	clay Sand, very fine, packed, with	Drill Hole	No. 62. Elevation 120'	10'- 20'	
70'- 80'	some gray clay	County, O		20'- 25'	clay and trace of lignite Sand, very fine, with light gray
70 - 80	very fine sand and trace of		: D. W. Lumbert 3/77.	25'- 50'	clay Sand, very fine, glauconitic
80'- 94'	lignite Clay, blue-gray, with very fine	0'- 7' 7'- 8'	Clay, gray, with very fine sand Ironstone concretion layer	50'- 60'	with gray clay Sand, very fine, with inter-
94'- 94%	sand and trace of lignite 2' Siderite	8'- 10' 10'- 15'	Clay, gray, with very fine sand Gravel, pea-size, with coarse		bedded gray clay, and dark
94½′-120	O' Clay, gray, with very fine sand, siderite layer @ 100'	15'- 23'	sand	60'- 62'	brown clay and lignite Clay, dark brown, with lignite
120′-140′	Clay, gray to dark brown, with very fine sand	23'- 26'	Clay, gray, with fine sand Clay, gray to light gray, lignitic with very fine sand	62'- 9 0'	Sand, very fine, with layers of brown clay and stringers of lignite
140′-147′	Clay, blue-gray, glauconitic, with very fine sand	26'- 28' 28'- 35'	Clay, brown, with very fine sand Clay, gray, with very fine sand	90′-110′	Sand, very fine, with light gray
147′	Siderite T. D.: 147'	35'- 38'	Clay, light brown, with very fine sand and siderite at 38'	110′-114′	and tan clay Clay, light gray to tan, with
		38'- 40'	Clay, brown to gray, with inter-	114′-130′	very fine sand Sand, very fine, with light gray
Drill Hole Location:	No. 60 a. Elevation 160'	40'- 50'	bedded, very fine sand Clay, gray, with very fine sand	130′-133′	to tan clay Lignite
County, U	nion	50'- 79'	Clay, gray, glauconitic, slightly lignitic, with very fine sand	133′-135′	Clay, dark brown to light brown with traces of lighter and very
	: D. W. Lumbert 3/77.		and siderite layers @ 66' and 78'	135′-138′	fine sand Sand, very fine
0'- 10' 10'- 2 0 '	Sand, very fine	79′- 80′ 80′- 96′	Sand, very fine, with gray clay Clay, gray, glauconitic, with	138′-140′	Clay, gray to light gray, with
20'- 30'	clay	96′-103′	very fine sand Sand, very fine	140′-150′	very fine sand Clay, blue-gray, with very fine
30'- 43' 43'- 43½	Sand, very fine, with tan clay	103′-120′	Clay, light gray to tan, with		sand T. D.: 150'
431/2'50'	Clay, gray, with interbedded, very fine sand	120′-130′	trace of lignite and very fine sand	-	
50'- 57'	Sand, fine, with trace of lignite T. D.: 57'		Sand, very fine, with gray and brown clay		No. 65. Elevation 234' NW¼, Sec. 11, T. 15 S., R. 17 W.
	1. 0 37	130′-140′	Clay, brown, with very fine sand	County, O	uachita : D. W. Lumbert 3/77.
Drill Hole	60 b. Elevation 160'	140′-150′	Clay, blue-gray, with brown layers of clay and very fine	0'- 10'	Sand, very fine, red, with light
County, U			sand T. D. <u>:</u> 150′	10'- 36'	gray clay Sand, very fine, with white clay
	: D. W. Lumbert 3/77.		•	36'- 50' 50'- 70'	Sand, very fine Sand, very fine, with white clay
0'- 10' 10'- 16'	Clay, gray, with very fine sand Sand, very fine, with gray to	Drill Hole Location:	No. 63. Elevation 148' SE¼, Sec. 24, T. 15 S., R. 17 W.	70'- 80'	Sand, very fine, with lignite stringer
16'- 26'	white clay Clay, dark gray, silty, with very	County, O	uachita : D. W. Lumbert 3/77.	80'- 85'	Clay, gray, slightly glauconitic
26'- 30'	fine sand Sand, medium to fine		3///.	85'- 90'	with very fine sand Sand, very fine
30'- 6 0 '	Clay, gray, silty, slightly glau- conitic, with very fine sand and	0'- 19'	Clay, light gray to white, with	90'- 97'	Clay, gray, with trace of lignite T. D.: 97'
60'- 70'	trace of lignite Clay, gray to tan, with very fine	19'- 24' 24'- 40'	very fine sand Sand, very fine, with iron stain		
70'- 87'	sand Clay, brown, with very fine sand		Clay, gray, glauconitic, with very fine sand	Drill Hole Location:	No. 66. Elevation 265' SW¼, Sec. 35, T. 14 S., R. 17 W.
87'- 9 0 '	and trace of lignite	40'- 53'	Clay, gray, very glauconitic, with very fine sand and siderite	County, O	uachita : D. W. Lumbert 3/77.
90′-110′	Clay, gray, with very fine sand Clay, gray, slightly glauconitic, with very fine sand, trace of	53'- 80'	layer @ 53' Clay, gray, glauconitic, with	0'- 34'	Sand, very fine, with some red
110′-120′	lignite, and siderite layer @ 104' Sand, very fine, with interbed-	80'- 90' 90'- 97'	very fine sand Clay, gray, with very fine sand Clay, gray, glauconitic, with	34'- 50'	clay, gray, with very fine sand
120'-140'	ded gray-green clay and siderite Sand, very fine, with gray clay	97′-100′	very fine sand	50′- 63′	Clay, gray, silty, with traces of lignite
140′-149′	and siderite layer at 137' Sand, very fine, interbedded	100′-126′	glauconitic clay	63′- 70′ 70′- 80′	Sand, very fine, with gray clay Sand, very fine
	with gray clay and trace of lig- nite, siderite layer at 149'	126′-130′	Clay, gray, glauconitic, with very fine sand	80′-100′	Sand, very fine, with stringers of lignite
	T. D.: 149'	130′-140′	Sand, very fine, with gray glauconitic clay	100′-110′	Sand, very fine, interbedded with gray glauconitic clay and
Drill Hole I	No. 61. Elevation 112'	140′-150′	Clay, gray, glauconitic, with interbedded very fine sand	110′-137′	siderite Clay, green, glauconitic, with
Location: County, Ur	SE¼, Sec. 32, T. 15 S., R. 16 W.		Sand, very fine, interbedded with brown lignitic clay		interbedded siderite and very fine sand
Logged by:	D. W. Lumbert 3/77.	150′-151′	Lignite, with dark brown clay, and very fine sand	137′-140′	Clay, light gray, with very fine sand and trace of lignite
0'- 10'	Sand, medium, with iron cement and red clay	151′-160′	Clay, gray to brown, with very fine sand T. D.: 160'	140′-150′	Clay, light gray, slightly glau- conitic, with very fine sand T. D.: 150'

Drill Hole	No. 67. Elevation 235'	Drill Hole	No. 69. Elevation 165'		very fine sand
Location:	Sec. 27, T. 14 S., R. 17 W.	Location:	SE¼, Sec. 11, T. 14 S., R. 17 W.	40'- 53'	Clay, gray, with traces of lignite
County, C		County, O		53'- 60'	Sand, very fine, with brown clay
Logged by	: D. W. Lumbert 3/77.	Logged by	: D. W. Lumbert 3/77.	60'- 75'	Sand, very fine, interbedded with brown clay and trace of
0'- 10'	Sand, fine to very fine				lignite
10'- 14'		0'- 7'	Clay, red, with very fine sand	75'- 80'	Clay, brown, with very fine
14'- 14'	'Ironstone layer Clay, gray, with very fine sand	7'- 8' 8'- 10'	Gravel, pea-size	00/ 05/	sand and trace of lignite
14/2 20	and trace of lignite	0 - 10	Clay, light gray to white, with very fine sand	8 0 ′- 95′	Sand, very fine, with brown clay
20'- 30'	Clay, gray to brown, with very	10'- 23'	Clay, gray, carbonaceous, with	95'- 971	2' Clay, dark brown, with very
30'- 40'	fine sand-silt, @ 23' siderite 3"		very fine sand		fine sand
40'- 50'	Clay, gray, with very fine sand Clay, gray, slightly lignitic, with	23'- 23½	'Gravel, pea-size	97½′-100	O' Clay, gray, with very fine sand
	very fine sand	23/2-30	Clay, light gray, with iron stain and coarse sand	100′-110′	Clay, gray, interbedded with very fine sand
50'- 60'	Same	30'- 37'	Sand, very fine, with stringer of	110'-140'	
60′- 70′	, interpretation,		lignite		@136' trace of lignite
70'- 80'	micaceous Sand, very fine, glauconitic,	37'- 43'	Clay, gray to brown, with very	140′-150′	Silt, with traces of lignite
	micaceous, interbedded with	43'- 60'	fine sand and trace of lignite Sand, very fine, with gray-green		T. D.: 150'
	clay, gray		glauconitic clay		
80'- 90'	Clay, white to gray, glauconitic,	60'- 70'	Clay, gray to brown, glauconitic		No. 72. Elevation 150'
90'-100'	with interbedded siderite Sand, very fine, glauconitic,	70'- 80'	with interbedded very fine sand		SW14, Sec. 21, T. 13 S., R. 17 W.
	with interbedded siderite	70 - 80	Sand, very fine, with gray to brown, slightly glauconitic clay	County, O	: D. W. Lumbert 3/77.
100′-110′	Clay, light gray, with very fine	80'-100'	Clay, gray to brown, with sand	Logged by	. D. W. Lumbert 3///.
110/100/	sand	100′-110′	Clay, gray to light brown, with		
110′-120′	Clay, gray to brown, with very fine sand and trace of lignite	110/1164	very fine sand and siderite layers	0'- 10'	, ,
	@ 115'	110'-116/2	'Sand, very fine, with gray clay Clay, dark brown, with lignite	10'- 27'	fine sand
120'-130'	Clay, layered gray to brown,	110/2120	and silt	10 - 27	Clay, light gray to tan, with very fine sand
400/450/	with trace of lignite	120'-130'	Sand, very fine	27'- 30'	Clay, gray to brown, with very
130′-150′	Clay, gray, with very fine sand T. D.: 150'	130′-140′	Sand, very fine, with traces of		fine sand
	1. 5 150	140'-150'	lignite and silt Silt, packed	30'- 40'	Sand, very fine, with clay,
		140 -150	T. D.: 150'		brown to gray, and trace of lignite
Drill Hole	No. 68. Elevation 220'			40'- 56'	Clay, brown, with very fine
County, O	NE¼, Sec. 22, T. 14 S., R. 17 W.	Duitt Hala	N- 70 Et 1001		sand
	D. W. Lumbert 3/77.		No. 70. Elevation 180' SE¼, Sec. 2, T. 14 S., R. 17 W.	56'- 63'	Clay, gray, with very fine sand
		County, O		76½′-77′	'Sand, very fine, with gray clay Lignite, with very fine sand
0'- 10'	Sand, very fine to fine, with iron stain	Logged by	D. W. Lumbert 3/77.	77'- 80'	Clay, gray, with very fine sand
10'- 20'	Sand, very fine, with clay, light	0'- 7'	Clay, tan, with layers of limon-	80'- 86'	Clay, light gray to white, with
	gray to white		ite, and very fine sand	86'- 90'	silt Clay, gray, interbedded with
20'- 30'	Clay, white to light gray, with very fine sand	7′- 10′	Clay, black to dark brown, very		fine sand
30'- 40'	Sand, very fine, with clay, white	10'- 37'	lignitic, with very fine sand Clay, chocolate brown, with	90′-100′ 100′-110′	Clay, gray to light gray
	to light grav		silt	100 -110	Clay, gray to light gray, with interbedded very fine sand
40'- 441/2	Sand, coarse	37'- 57'	Clay, brown to light brown,	110'-140'	Clay, gray to light gray, with
44/2-50	Clay, light gray to white, with very fine sand		slightly glauconitic, with very		very fine sand
50'- 53'	Sand, fine to coarse	57'- 57%	fine sand Lignite, with sand	140′-150′	Clay, light gray to brown, with
53'- 55'	Clay, white to gray, with very	571/2'-70'	Clay, gray, with very fine sand		very fine sand T. D.: 150'
55'- 60 '	fine sand	7 0 ′- 89′	Sand, very fine, with gray clay		
33 - 00	Clay, gray to dark gray, with very fine sand	89'- 90'	and tan siderite layers	D.:!!! !!!.	N - 72
60'- 70'	Clay, gray, with very fine sand	90'- 95'	Clay, gray, with very fine sand Sand, very fine, with siderite	Location:	No. 73. Elevation 220' NW¼, Sec. 19, T. 13 S., R. 17 W.
70′- 89′	8''Clay, gray, slightly glauconitic,	95'-100'	Clay, white, with silt	County, O	uachita
	with very fine sand @ 74½' siderite layer	100/ 110/	@ 98'-99' sand, very fine		: D. W. Lumbert 3/77.
	@ 87'8" siderite layer, and	100'-110' 110'-120'	Sand, very fine, with silt Clay, gray, with traces of	0′ 10′	Clay light and
	@ 89'8" siderite laver	110 120	lignite and silt	0 - 10	Clay, light gray, with iron stain, and very fine sand
89.8"-97	Clay, gray, glauconitic, with	120′-140′	Clay, light gray to light brown,	10'- 20'	Clay, gray, with very fine sand
97'-104'	very fine sand Sand, very fine	140'-150'	with very fine sand	20'- 30'	Clay, gray to brown, with very
104/440/	@ 98' siderite layer	140-150	Clay, light gray, with silt T. D.: 150'	30'- 40'	fine sand Clay, gray to brown, carbona-
104′-110′	Clay, gray, glauconitic, with very fine sand				ceous, with very fine sand
110'-120'	Clay, gray to brown, with trace	Drill Hole	No. 71. Elevation 180'	40'- 70' 70'- 73'	Clay, brown, with silt
100/100/	of lignite		SW¼, Sec. 26, T. 13 S., R. 17 W.	73'- 76'	Clay, dark brown, with silt Clay, light gray, with very fine
120′-130′	Clay, gray, with tan clay layers and trace of lignite and very	County, Oc	achita		sand
	fine sand	Logged by:	D. W. Lumbert 3/77.	76'- 77'	Clay, white, with silt
130′-139′	Clay, light gray, slightly glau-	0'- 10'	Clay, tan, with sand	77'- 90' 90'-110'	Clay, gray, with silt Silt, with gray clay
139'-140'	conitic with trace of lignite	10'- 12'	Clay, brown, with trace of		@ 108' trace of lignite
140'-1441/	Siderite Clay, light bluish-gray, with very	10/ 00/	lignite	110'-118'	Silt, interbedded with gray clay
	fine sand	12'- 23'	Clay, gray, with very fine sand and trace of lignite @ 12'-14'	118′-120′	Clay, gray, with silt
1441/2'147'	Sand, very fine	23'- 25'	Clay, white, with very fine sand	120′-140′	Sand, very fine, with interbed- ded gray clay and traces of
147′-150′	Clay, gray, with very fine light-	25'- 30'	Clay, gray brown, with very fine		lignite
	gray sand T. D.: 150'	30'- 40'	sand	140′-150′	Sand, very fine
		00 - 40	Clay, gray, glauconitic, with		T. D.: 150'

Drill Hole	No. 74. Elevation 308'	37½'- 41'	Lignite	50'- 60'	Sand, very fine, with pink to
Location: County, O	.SW¼, Sec. 18, T. 13 S., R. 17 W.	41'- 50'	Clay, light gray, and chocolate		light tan clay
	: D. W. Lumbert 3/77.		brown interlayered, and very fine sand	60'- 73' 7 3 '- 8 0 '	Clay, brown to gray, with silt Clay, brown, with very fine
0'- 8'	Clay, red, with fine sand	50'- 55' 55'- 6 0'	Clay, light blue-gray, with silt Clay, light gray to gray, with silt	80'-110'	sand and traces of lignite Clay, light brown to brown,
8'- 10'	Clay, green, glauconitic, with fine sand; @ 8' siderite	60'- 80' 80'- 90'	Clay, blue-gray, with silt Clay, light gray, glauconitic,		interbedded with very fine sand
10'- 18'	Clay, green to gray, with very fine sand		with interbedded silt	110′-120′	
18'- 20'	Clay, red to yellow, with iron	90′-110′ 110′-130′	Silt, with gray clay Sand, very fine	120'-124'	lignite at 117' - 118' Clay, white to light gray, with
20'- 25'	concretions and very fine sand Sand, very fine, with tan clay	130'-140'	Sand, very fine, with silt Core interval 18'-28'	124'-140'	very fine sand Sand, very fine, with traces of
25'- 28' 28'- 30'	Clay, gray, with very fine sand Clay, tan to white, with silt		Recovered: Lost: 9'8"		lignite
30'- 40'	Sand, very fine, with white to		18'-25' Clay, gray to chocolate	140′-150′	Sand, very fine to fine, with traces of lignite
40'- 50'	tan clay layers Silt, with white clay		brown, with very fine sand		T. D. 150'
50'- 60' 60'- 70'	Clay, gray to brown, with silt Clay, brown, with silt		25'-27'8" Lignite	Drill Hole	No. 79. Elevation 240' SE¼, Sec. 29, T. 12 S., R. 18 W.
	@ 68 - 68½ very fine sand and trace of lignite		Core Interval 35'- 45'	County, O	uachita
70'- 80'	Clay, gray, slightly glauconitic		Recovered: Lost:	Logged by	: D. W. Lumbert 3/77.
80'- 93'	@ 78' trace of lignite Clay, gray, with silt		35'-43' Clay, gray 43' 43'4'' Sand, very fine	0'- 10'	Sand, very fine to fine, with red clay binder
93′- 96′ 96′-1 00 ′	Sand, very fine, with silt Clay, gray, with silt		43'4''-45' Lignite T. D.: 140'	10'- 14'	Clay, light gray to white, iron
100'-110'	Clay, gray, slightly glauconitic			14'- 17½	stained, with silt Clay, gray, with very fine sand
110′-130′	with silt Silt, interbedded with light gray	Location:	No.77. Elevation 240' NW¼, Sec. 3, T. 13 S., R. 18 W.	17½′-20′	Lignite, with chocolate brown clay, and silt
130'-132'	clay, @ 121' siderite Clay, gray, with silt	County, O	uachita : D. W. Lumbert 3/77.	20'- 26'	Clay, gray, with fine sand
132′-137′ 137′-140′	Silt, with gray clay Clay, gray, with silt			26'- 30' 30'- 39'	Sand, fine Clay, brown, with silt
140'-144'	Silt		Clay, red to gray, with very fine sand	39'- 40' 40'- 55'	Clay, gray, with silt Silt (?)
144′-146′	Clay, gray to brown, with very fine sand	6'- 10'	Sand, very fine, with light gray to gray clay		T. D.: 55'
146′-15 0 ′	Silt, with gray clay T. D.: 150'	10'- 20'	Clay, light gray to light brown, with very fine sand		No. 80. Elevation 250'
Drill Hole I	No. 75. Elevation 260'	20'- 30'	Clay, light gray to brown and	County, O	
Location:	SW¼, Sec. 12, T. 13 S., R. 18. W.		blue interlayered, with very fine sand	Logged by	D. W. Lumbert 3/77.
County, Ou Logged by:	uachita D.W. Lumbert 3/77.	30'- 40'	Clay, brown and chocolate brown interlayered, with traces	0'- 10' 10'- 20'	Clay, red to light gray, w/silt
0'- 10'	Clay, white, with very fine sand	40'- 44'	of lignite		Clay, light gray, iron stained, with silt
10'- 37'	and iron concretions		Clay, light brown, with inter- bedded very fine sand	20′-110′	Clay, light gray @ 102' to 103' very fine sand
	Clay, gray, with very fine sand, and traces of lignite	44'- 50' 50'- 57'	Sand, very fine Sand, very fine, with white to	110′-120′ 120′-150′	Clay, gray, with silt Clay, gray
37'- 40' 40'- 42'	Lignite Clay, dark brown, with very fine	57'- 60'	gray clay and trace of lignite Clay, light brown to gray, with	120 100	T. D.:150'
42'- 48'	sand Sand, very fine, interbedded		very fine sand		No. 81a. Elevation 250'
	with grav clav	60'- 70'	Sand, very fine, with light brown to tan clay	Location: I County, Ou	NW¼, Sec. 19, T. 12 S., R. 18 W. Jachita
55/2-5//2	Clay, gray, and very fine sand 'Lignite	70′- 90′	Silt, with interbedded, brown to light brown and gray clay, with		D. W. Lumbert 3/77.
57½′- 60′	Clay, gray to brown, with very fine sand	90′-100′	trace of lignite	0'- 10'	Clay, kaolin
60'- 68½' 68½'-70'	Silt	100′-130′	Sand, very fine, w/light tan clay Sand, very fine, with light gray		T. D.: 10'
70'- 8 0'	Clay, brown, with very fine sand Clay, light gray, with silt	130'-140'	clay, and traces of lignite Sand, very fine, with traces of		No. 81b. Elevation 250' SE¼, Sec. 24 , T. 12 S., R. 19 W.
80'-1 00 '	@ 77' trace of lignite Clay, light blue-gray, with silt	140′-150′	lignite Sand, very fine, with gray clay	County, Ou	achita
100′-120′	Clay, light blue-gray, with sand, very fine	140-130	T. D.: 150'		Lonnie Gilbreath 4/77.
120′-150′	Sand, very fine		No. 78. Elevation 245'	0'- 6½' 6½'- 7'	Clay, mottled, with silt Sand, tan, very fine, with silt
	@143'-145' gray clay T. D.: 150'	Location: County, Ou	SW¼, Sec. 33, T. 12 S., R. 18 W.	7'- 24'	Clay, tan and light gray, with
			D. W. Lumbert 3/77.	24'- 46'	silt Clay, gray and yellow, with fine
Drill Hole N	lo. 76. Elevation 210'	0'- 9'	Clay, kaolin, with iron staining	46'- 63'	sand Silt, gray, with clay
County, Ou		9'- 10'	Lignite, with chocolate brown clay, and very fine sand	63′- 95′	Sand, light gray to tan, very
Logged by:	D. W. Lumbert 3/77.	10′- 10½′ 10½′- 12′	Lignite	95'-106'	fine with silt Sand, light gray to tan, fine to
0'- 10'	Sand, very fine, with red to	12'- 20'	Sand, with mottled clay	106′-107′	medium, with silt Lignite
	yellow clay, and iron concre- tions	20'- 28' 28'- 30'	Clay, light blue-gray Clay, chocolate brown, with	107'-127'	Sand, light gray to tan, fine to medium, with gray clay from
18'- 21'	Sand, very fine, with kaolin Lignite, soft, with silt	30'- 40'	traces of lignite and silt Clay, gray, with silt	107/ 100/	117'-120'
	Sand, very fine, with layers of brown clay	40'- 43'	@ 38' siderite	127′-128′ 128′-134′	Lignite Clay, gray, with silt
30'- 371/2'	Clay, gray, with very fine sand layers		Clay, black to dark brown, very lignitic, with silt		@134' lignite stringer Sand, light gray to tan, medium
	iay or s	43'- 50'	Clay, gray, with silt		T. D.: 140'

Drill Hole No. 82. Elevation 240	5′- 1!	5' Clay, red to orange, with very	10'- 17'	Clay, light gray to tan, with
Location: NW¼, Sec. 13, T. 12 S	S., R. 19 W.	fine sand		very fine sand
County, Ouachita Logged by: D. W. Lumbert	3/77.	of lignite	17'- 26'	Sand, very fine to fine, with light gray to gray clay
0'- 7' Sand, fine to very fine	20′ 30	O' Silt, with very fine sand @ 25' iron cemented sand	26'- 28' 28'- 30'	Gravel, medium to pea-size Lignite
7'- 10' Sand, very fine, wit			20 00	T. D.: 30'
10'- 20' Sand, medium, with 20'- 40' Sand, medium to fine		D' Silt, with white clay		No. 89. Elevation 290' SW¼, Sec. 28, T. 11 S., R. 19 W.
40'- 50' Sand, fine to very fine	e	stained clay	County, O	uachita
50'- 60' Clay, gray, with 60'- 70' Sand, medium to fi		O' Clay, gray to brown, with silt @ 84' ironstone concretions	Logged by	: D. W. Lumbert 4/77.
glauconitic	90′-106	S' Sand, fine to very fine, with	0'- 5'	Sand, with red clay binder
70'- 80' Sand, medium to brown to gray clay	fine, with 106'-110	glauconitic clay O' Clay, chocolate brown, with	5′- 7′ 7′- 10′	Sand, with white clay Clay, white to light gray, with
80'- 100' Sand, fine to very fine @ 97' siderite		interbedded fine to very fine sand and traces of lignite	10'- 17'	very fine sand Clay, brown, with very fine
100'-110' Sand, very fine to bedded with brown c			17'- 20'	sand Clay, dark gray, with silt and
110'-127' Clay, brown, very		clay		trace of lignite
with fine sand 127'-140' Sand, very fine, w	ith brown	interbedded gray clay	20′- 26′	Clay, gray, carbonaceous, with traces of lignite and silt
glauconitic, micaceou 140'-150' Clay, brown, glaucon	nitic, mica-	O' Sand, very fine, with gray to brown clay	26'- 30'	Clay, gray, with silt and inter- bedded very fine sand, contain-
ceous interbedded fine sand	with very	T. D.: 150'	30'- 40'	ing stringers of lignite Clay,gray, with very fine sand
T. D.: 150'		le No. 86. Elevation 215'	40'- 50'	Clay, gray, with very line said Clay, gray, micaceous, with
Drill Hole No. 83. Elevation 290		n: NE¼, Sec. 5, T. 12 S., R. 19 W.		pyrite nodules and very fine
Location: NW¼, Sec. 11, T. 12 S County, Ouachita		Ouachita by: D. W. Lumbert 4/77.	5 0 ′- 57′	sand Clay, gray, slightly glauconitic
Logged by: D. W. Lumbert	4/77. 0'- 10	o' Sand, fine, with light gray to		with siderite layers, and very fine sand
0'- 3' Clay, white, with silt	10'- 2	white clay 3' Sand, fine, with mottled clay	57'- 60'	Clay, brown, with very fine sand
3' 8' Sand, very fine, with 8' 10' Clay, white, with silt		O' Clay, brown to gray, w/traces of	60'- 70'	Sand, very fine, with brown
10'- 30' Sand, very fine, with	h red clay 30'- 3!	lignite and very fine sand 5' Sand, fine	70'- 80'	clay, and trace of lignite Sand, very fine, with inter-
binder	35'- 40	D' Clay, gray to brown, with very		bedded gray to brown, glauco-
30'- 70' Sand, medium to fine @ 68' stringer of light	gnite, with 40'- 48		80'- 90'	nitic clay, and traces of lignite Clay, chocolate brown, with
gray clay and co 70'- 85' Sand, medium to fine		6' Clay, brown to gray, with very fine sand and traces of lignite		very fine sand
brown clay T. D.: 85'	56'- 60		90'-110'	@ 86' lignite stringer Clay, brown, interbedded with
	60'- 7	7' Clay, brown, w/very fine sand	110′-116′	silt Clay, brown, with silt and
Drill Hole No. 84. Elevation 270 Location: NW4, Sec. 10, T. 12 S	′ 77′- 89 S., R. 19 W. 85′-120		116′-135′	traces of lignite
County, Ouachita	120′-130			Clay, brown, with interbed- ded silt
Logged by: D.W. Lumbert	4/77. 1 30 ′-15	fine sand, @ 123' siderite O' Sand, very fine, interbedded	135′-140′ 140′-150′	Silt, with brown clay Clay, brown, with interbedded
0'- 10' Sand, medium to fin		with brown clay T. D.: 150'	140 -150	silt, slightly glauconitic T. D.: 150'
10'- 30' Sand, fine to very fine				1. 5 130
30'- 45' Sand, coarse to fine, v 45'- 50' Clay, gray, with		le No. 87. Elevation 280' n: NW¼, Sec. 31, T. 11 S., R. 19 W.	Drill Hole	No. 89a. Elevation 505'
50'- 63' Sand, coarse to medic	ım County,	Ouachita		SE¼, Sec. 18, T. 5 S., R. 16 W.
63'- 66' Clay, brown, with c 66'- 69' Sand, coarse to medic		oy: D. W. Lumbert 4/77.	County, H	ot Spring : D. W. Lumbert 4/77.
69'- 70' Siderite, with coarse	to medium 0'-	7' Clay, red to tan, with fine sand		
sand 70'- 80' Sand, medium, with	7′- 10 brown clay 10′- 3	O' Clay, brown, with very fine sand Clay, brown, with silt		Gravel, medium Sand, medium to fine
@ 73' siderite	37'- 40	D' Sand, very fine, with brown clay	14'- 18'	Clay, white, with silt
ded brown to tan clay		O' Clay, brown, slightly glauconitic with very fine sand	18′- 41′ 41′- 41½	Clay, blue-gray to gray, with silt 'Sand, very fine
86'- 90' Clay, brown to tan, w	ith 50'- 55	@ 49½ siderite 5' Clay, brown, slightly glauconitic	411/2'- 45'	
@ 86' siderite 90'-100' Sand, medium to		interbedded with very fine sand and traces of lignite	45'- 50' 50'- 55'	Clay, dark brown, very lignitic
brown clay	55′-110	O' Clay, brown, with silt		Lignite, with chocolate brown clay and very fine sand
fine sand		bedded brown clay	55'- 60' 60'- 61'	Clay, light gray, with silt Gravel, pea-size
110'-120' Clay, brown, with silt 120'-150' Clay, brown, with		@ 117' loose sand O' Sand, very fine, with brown clay	61'- 70' 70'- 84'	Clay, white kaolin
traces of lignite	3110 and 140-150	and trace of lignite	84'-120'	Clay, gray, with silt Clay, chocolate brown, with
T. D.: 150'		T. D.: 150'		trace of lignite, and inter-
Drill Hole No. 85. Elevation 327		le No. 88. Elevation 190'	120'-130'	bedded, very fine sand Clay, light brown, with very
Location: SW¼, Sec. 4, T. 12 S. County, Ouachita	., R. 19 W. Location County,	n: NE¼, Sec. 25. T. 11 S., R. 20 W.		fine sand
Logged by: D. W. Lumbert		by: D.W. Lumbert 4/77.	130′-140′	Sand, very fine, with light brown clay
0'- 5' Clay, mottled, with si	lt 0'- 10	O' Clay, gray, with silt	140′-150′	Clay, gray, with very fine sand T. D.: 150'
		-11 9 -11 0. 0110		100

Drill Hole	No. 90. Elevation 420'	10'- 28'	Sand, very fine		with fine groop glovespitis and
	SE¼, Sec. 1, T. 5 S., R. 17 W.	28'- 30'	Lignite, with very fine sand		with fine green, glauconitic sand and trace of lignite
County, H		30'- 37'	Clay, black, very lignitic, with	371/2'- 44'	Clay, gray to light gray
Loggeaby	: D. W. Lumbert 4/77.	37'- 40'	very fine sand	44'- 45'	Clay, cream
0'- 5'	Gravel	40'- 60'	Sand, very fine Sand, very fine, with stringers	45'- 50'	Clay, gray and brown inter- bedded with fine sand and
5'- 7'	Sandstone, iron cemented		of lignite		trace of lignite
7'- 10' 10'- 20'	Lignite, w/gravel and gray clay Sand, fine, with gray clay, and		@ 50'-60' also few stringers of	50'- 56'	Clay, gray and brown inter-
	traces of lignite	60'- 70'	gray clay Clay, black, lignitic, with very	56'- 64'	bedded Clay, turquoise and brown
20′- 30′	Sand, fine, with brown clay, and		fine sand	30 - 04	interbedded
	large flakes of lignite, and pyrite nodules	70'- 80'	Clay, brown, interbedded with	64'- 66'	Clay, brown
30'- 40'	Clay, dark brown, fissile, w/very	80'- 92'	very fine sand Clay, white, with very fine sand	66' 661	@ 66' siderite
	fine to fine sand, and lignite	92'-102'	Sand, very fine, with gray clay	00 - 00 /2	Clay, dark brown, with 2" lignite stringer
40′- 50′	Sand, fine, with brown clay,	102'-110'	Clay, gray to brown, fissile, with	661/2' - 70'	Clay, gray
50'- 70'	and lignite Sand, very fine to fine	110/117/	very fine sand	70'- 75'	Clay, turquoise and brown inter-
70′-100′	Clay, white, kaolin, w/minor silt	110′-117′ 117′-120′	Sand, very fine Clay, gray to brown, with very	75/ 771/	bedded
100'-106'	Clay, white, w/increasing silt	117 120	fine sand	15 - 11/2	'Clay, light gray, with fine green glauconitic sand
106′-110′	Clay, chocolate brown, with	120′-127′	Clay, gray, glauconitic, with	771/2'-81'	Clay, light gray to green
110'-115'	lignite, and very fine sand Sand, very fine, with brown	107/104/	very fine sand	81'- 83'	Clay, dark brown, with trace
	clay and lignite	127′-134′ 134′-150′	Sand, very fine	02/ 04/	of lignite
115'-130'	Clay, white, with silt	104 100	Clay, gray, glauconitic, with very fine sand	83'- 84' 84'- 88'	Clay, tan Clay, green
	@ 126' sand, very fine, with		@ 147' siderite	88'- 90'	Clay, gray to green, with silt
130′-140′	Sand yery fine with white to		Core interval 27'-31'8"	90'- 99'	Clay, gray
100 140	Sand, very fine, with white to gray clay		35" inches of lignite for analysis T. D.: 150"	99′-100′	Clay, cream
140'-150'	Sand, medium to very fine		1. D 190	100′-102′ 102′-109′	Clay, light brown
	T. D. 150'	Drill Hole	No. 93. Elevation 342'	102 -103	Clay, gray and brown, inter- bedded with trace of lignite
Drill Hole	No. 91. Elevation 333'	Location:	SE¼, Sec. 20, T. 3 S., R. 14 W.	109′-114′	Clay, turquoise
Location:	NW¼, Sec. 17, T. 3 S., R. 14 W.	County, G		114′-116′	Clay, greenish gray and brown
County, Sa	aline	Logged by	D. W. Lumbert 4/77.	116'-120'	interbedded
Logged by	: D. W. Lumbert 4/77.	0'- 7'	Clay, white to tan, with silt	110-120	Lignite, thin stringers and dark brown clay
0'- 6'	Clay, light gray to tan, with	7'- 10'	Clay, white to tan, with fine	12 0 ′-122′	Clay, turquoise
0 0	very fine sand	10'- 16'	to very fine sand Clay, tan, with very fine sand	122′-139′	Clay, greenish gray, with silt
6'- 8'	Gravel	16'- 19'	Sand, very fine	139′-145′ 145′-150′	Silt
8'- 9'	Clay, orange, with very fine to	19'- 20'	Clay, white	143 -150	Clay, light brown T. D.: 150'
9'- 10'	fine sand Sand, fine	20'- 26'	Clay, tan, with very fine sand		
10'- 16'	Clay, light gray, with very fine	26'- 30' 30'- 36'	Sand, fine	Drill Hole I	No. 95. Elevation 350'
	sand	00 - 00	Clay, white to light tan, with very fine sand	County, Sa	NW¼, Sec. 8, T. 3 S., R. 14 W.
16′- 20′	Clay, gray to brown, with fine	36'- 40'	Sand, very fine, with light tan		D. W. Lumbert 4/77.
20'- 27'	sand and trace of lignite Sand, very fine, with gray clay	40'- 84'	clay		
27'- 35'	Clay, chocolate brown, with	40 - 64	Sand, very fine to fine @ 50'-60' minor gray clay	0'- 10'	Clay, light gray to tan, with very
	traces of lignite and very fine	84'- 85'	Clay, light gray, with trace of		fine sand @ 9½'-10' traces of lignite
35'- 38'	Sand		lignite and very fine sand	10'- 20'	Clay, gray, with traces of lignite
00 00	Clay, light brown, with very fine sand	85′- 87′	Lignite, with chocolate brown		and very fine sand
38'- 40'	Sand, very fine, with light	87'- 9 0 '	clay and very fine sand Clay, brown, with very fine	20'- 30'	Lignite, with dark brown clay
40'- 50'	brown clay		sand	30'- 34'	and very fine sand Clay, chocolate brown, with
40 - 50	Sand, very fine, with traces of lignite	90′-100′	Sand, very fine, with lignite		very fine sand
50'- 60'	Sand, very fine, with gray clay		stringers		
	cana, very mie, with drav this	100′-110′		34'- 40'	Clay, white to light gray, with
	and traces of lignite	100′-110′	Clay, gray, with thin brown		interbedded very fine sand
60'- 61'	and traces of lignite Lignite, with dark brown clay		Clay, gray, with thin brown clay layers and traces of woody lignite, with very fine sand	40'- 45'	interbedded very fine sand Lignite, with dark brown clay, and very fine sand
60'- 61' 61'- 64'	and traces of lignite Lignite, with dark brown clay and very fine sand	100′-110′	Clay, gray, with thin brown clay layers and traces of woody lignite, with very fine sand Clay, black, with lignite and	40'- 45'	interbedded very fine sand Lignite, with dark brown clay, and very fine sand
61'- 64'	and traces of lignite Lignite, with dark brown clay	110′-114′	Clay, gray, with thin brown clay layers and traces of woody lignite, with very fine sand Clay, black, with lignite and very fine sand	40'- 45' 45'- 50'	interbedded very fine sand Lignite, with dark brown clay, and very fine sand Sand, very fine, with white to light gray clay
61'- 64' 64'- 66'	and traces of lignite Lignite, with dark brown clay and very fine sand Clay, chocolate brown, with very fine sand Clay, white, with silt	110′-114′ 114′-115′	Clay, gray, with thin brown clay layers and traces of woody lignite, with very fine sand Clay, black, with lignite and very fine sand Clay, brown, to light brown,	40'- 45' 45'- 50' 50'- 54'	interbedded very fine sand Lignite, with dark brown clay, and very fine sand Sand, very fine, with white to light gray clay Clay, white, with very fine sand
61'- 64' 64'- 66' 66'- 68'	and traces of lignite Lignite, with dark brown clay and very fine sand Clay, chocolate brown, with very fine sand Clay, white, with silt Sand, very fine	110'-114' 114'-115' 115'-130'	Clay, gray, with thin brown clay layers and traces of woody lignite, with very fine sand Clay, black, with lignite and very fine sand Clay, brown, to light brown, with very fine sand Sand, very fine, with brown clay	40'- 45' 45'- 50'	interbedded very fine sand Lignite, with dark brown clay, and very fine sand Sand, very fine, with white to light gray clay Clay, white, with very fine sand Clay, gray, with very fine sand
61'- 64' 64'- 66'	and traces of lignite Lignite, with dark brown clay and very fine sand Clay, chocolate brown, with very fine sand Clay, white, with silt Sand, very fine Clay, brown, with very fine sand	110'-114' 114'-115' 115'-130' 130'-135'	Clay, gray, with thin brown clay layers and traces of woody lignite, with very fine sand Clay, black, with lignite and very fine sand Clay, brown, to light brown, with very fine sand Sand, very fine, with brown clay Sand, very fine,	40'- 45' 45'- 50' 50'- 54' 54'- 60' 60'- 80'	interbedded very fine sand Lignite, with dark brown clay, and very fine sand Sand, very fine, with white to light gray clay Clay, white, with very fine sand Clay, gray to light gray, glauconitic, with very fine sand
61'- 64' 64'- 66' 66'- 68' 68'- 70' 70'- 86'	and traces of lignite Lignite, with dark brown clay and very fine sand Clay, chocolate brown, with very fine sand Clay, white, with silt Sand, very fine Clay, brown, with very fine sand and trace of lignite Sand, very fine	110'-114' 114'-115' 115'-130'	Clay, gray, with thin brown clay layers and traces of woody lignite, with very fine sand Clay, black, with lignite and very fine sand Clay, brown, to light brown, with very fine sand Sand, very fine, with brown clay Sand, very fine Clay, gray	40'- 45' 45'- 50' 50'- 54' 54'- 60' 60'- 80' 80'- 85'	interbedded very fine sand Lignite, with dark brown clay, and very fine sand Sand, very fine, with white to light gray clay Clay, white, with very fine sand Clay, gray, with very fine sand Clay, gray to light gray, glauconitic, with very fine sand Sand, very fine, with tan clay
61'- 64' 64'- 66' 66'- 68' 68'- 70'	and traces of lignite Lignite, with dark brown clay and very fine sand Clay, chocolate brown, with very fine sand Clay, white, with silt Sand, very fine Clay, brown, with very fine sand and trace of lignite Sand, very fine Clay, chocolate brown, fissile,	110'-114' 114'-115' 115'-130' 130'-135'	Clay, gray, with thin brown clay layers and traces of woody lignite, with very fine sand Clay, black, with lignite and very fine sand Clay, brown, to light brown, with very fine sand Sand, very fine, with brown clay Sand, very fine,	40'- 45' 45'- 50' 50'- 54' 54'- 60' 60'- 80' 80'- 85'	interbedded very fine sand Lignite, with dark brown clay, and very fine sand Sand, very fine, with white to light gray clay Clay, white, with very fine sand Clay, gray, with very fine sand Clay, gray to light gray, glauconitic, with very fine sand Sand, very fine, with tan clay Siderite
61'- 64' 64'- 66' 66'- 68' 68'- 70' 70'- 86' 86'- 90'	and traces of lignite Lignite, with dark brown clay and very fine sand Clay, chocolate brown, with very fine sand Clay, white, with silt Sand, very fine Clay, brown, with very fine sand and trace of lignite Sand, very fine Clay, chocolate brown, fissile, with lignite	110'-114' 114'-115' 115'-130' 130'-135' 135'-140' Drill Hole I	Clay, gray, with thin brown clay layers and traces of woody lignite, with very fine sand Clay, black, with lignite and very fine sand Clay, brown, to light brown, with very fine sand Sand, very fine, with brown clay Sand, very fine Clay, gray T. D.: 140'	40'- 45' 45'- 50' 50'- 54' 54'- 60' 60'- 80' 80'- 85'	interbedded very fine sand Lignite, with dark brown clay, and very fine sand Sand, very fine, with white to light gray clay Clay, white, with very fine sand Clay, gray, with very fine sand Clay, gray to light gray, glauconitic, with very fine sand Sand, very fine, with tan clay Siderite Core interval 20'-30'
61'- 64' 64'- 66' 66'- 68' 68'- 70' 70'- 86' 86'- 90' 90'- 97'	and traces of lignite Lignite, with dark brown clay and very fine sand Clay, chocolate brown, with very fine sand Clay, white, with silt Sand, very fine Clay, brown, with very fine sand and trace of lignite Sand, very fine Clay, chocolate brown, fissile, with lignite Clay, chocolate brown, very	110'-114' 114'-115' 115'-130' 130'-135' 135'-140' Drill Hole I Location:	Clay, gray, with thin brown clay layers and traces of woody lignite, with very fine sand Clay, black, with lignite and very fine sand Clay, brown, to light brown, with very fine sand Sand, very fine, with brown clay Sand, very fine Clay, gray T. D.: 140' No. 94. Elevation 317' NE'4, Sec. 11, T. 4 S., R. 14 W.	40'- 45' 45'- 50' 50'- 54' 54'- 60' 60'- 80' 80'- 85'	interbedded very fine sand Lignite, with dark brown clay, and very fine sand Sand, very fine, with white to light gray clay Clay, white, with very fine sand Clay, gray, with very fine sand Clay, gray to light gray, glauconitic, with very fine sand Sand, very fine, with tan clay Siderite Core interval 20'- 30' Recovered: Becovered: Lost: 9' Lost:
61'- 64' 64'- 66' 66'- 68' 68'- 70' 70'- 86' 86'- 90' 90'- 97'	and traces of lignite Lignite, with dark brown clay and very fine sand Clay, chocolate brown, with very fine sand Clay, white, with silt Sand, very fine Clay, brown, with very fine sand and trace of lignite Sand, very fine Clay, chocolate brown, fissile, with lignite Clay, chocolate brown, very lignitic, with very fine sand Sand, very fine	110'-114' 114'-115' 115'-130' 130'-135' 135'-140' Drill Hole I Location: County, Gr	Clay, gray, with thin brown clay layers and traces of woody lignite, with very fine sand Clay, black, with lignite and very fine sand Clay, brown, to light brown, with very fine sand Sand, very fine, with brown clay Sand, very fine Clay, gray T. D.: 140' No. 94. Elevation 317' NE'4, Sec. 11, T. 4 S., R. 14 W. ant	40'- 45' 45'- 50' 50'- 54' 54'- 60' 60'- 80' 80'- 85'	interbedded very fine sand Lignite, with dark brown clay, and very fine sand Sand, very fine, with white to light gray clay Clay, white, with very fine sand Clay, gray, with very fine sand Clay, gray to light gray, glauconitic, with very fine sand Sand, very fine, with tan clay Siderite Core interval 20'- 30' Recovered: Lost: 9' 1' 20'-29' Lignite, with some
61'- 64' 64'- 66' 66'- 68' 68'- 70' 70'- 86' 86'- 90' 90'- 97'	and traces of lignite Lignite, with dark brown clay and very fine sand Clay, chocolate brown, with very fine sand Clay, white, with silt Sand, very fine Clay, brown, with very fine sand and trace of lignite Sand, very fine Clay, chocolate brown, fissile, with lignite Clay, chocolate brown, very lignitic, with very fine sand Sand, very fine Siderite	110'-114' 114'-115' 115'-130' 130'-135' 135'-140' Drill Hole I Location: County, Gr Logged by:	Clay, gray, with thin brown clay layers and traces of woody lignite, with very fine sand Clay, black, with lignite and very fine sand Clay, brown, to light brown, with very fine sand Sand, very fine, with brown clay Sand, very fine Clay, gray T. D.: 140' No. 94. Elevation 317' NE¼, Sec. 11, T. 4 S., R. 14 W. ant J. M. Howard 5/77.	40'- 45' 45'- 50' 50'- 54' 54'- 60' 60'- 80' 80'- 85'	interbedded very fine sand Lignite, with dark brown clay, and very fine sand Sand, very fine, with white to light gray clay Clay, white, with very fine sand Clay, gray, with very fine sand Clay, gray to light gray, glauconitic, with very fine sand Sand, very fine, with tan clay Siderite Core interval 20'-30' Recovered: 9' 10' 20'-29' Lignite, with some chocolate brown clay
61'- 64' 64'- 66' 66'- 68' 68'- 70' 70'- 86' 86'- 90' 90'- 97'	and traces of lignite Lignite, with dark brown clay and very fine sand Clay, chocolate brown, with very fine sand Clay, white, with silt Sand, very fine Clay, brown, with very fine sand and trace of lignite Sand, very fine Clay, chocolate brown, fissile, with lignite Clay, chocolate brown, very lignitic, with very fine sand Sand, very fine	110'-114' 114'-115' 115'-130' 130'-135' 135'-140' Drill Hole I Location: County, Gr Logged by: 0'- 9'	Clay, gray, with thin brown clay layers and traces of woody lignite, with very fine sand Clay, black, with lignite and very fine sand Clay, brown, to light brown, with very fine sand Sand, very fine, with brown clay Sand, very fine Clay, gray T. D.: 140' No. 94. Elevation 317' NE'4, Sec. 11, T. 4 S., R. 14 W. ant J. M. Howard 5/77. Clay, mottled, with fine sand	40'- 45' 45'- 50' 50'- 54' 54'- 60' 60'- 80' 80'- 85' 85'- 86'	interbedded very fine sand Lignite, with dark brown clay, and very fine sand Sand, very fine, with white to light gray clay Clay, white, with very fine sand Clay, gray, with very fine sand Clay, gray to light gray, glauconitic, with very fine sand Sand, very fine, with tan clay Siderite Core interval 20'- 30' Recovered: Lost: 9' 1' 20'-29' Lignite, with some
61'- 64' 64'- 66' 66'- 68' 68'- 70' 70'- 86' 86'- 90' 90'- 97' 97'-127' 127'-130'	and traces of lignite Lignite, with dark brown clay and very fine sand Clay, chocolate brown, with very fine sand Clay, white, with silt Sand, very fine Clay, brown, with very fine sand and trace of lignite Sand, very fine Clay, chocolate brown, fissile, with lignite Clay, chocolate brown, very lignitic, with very fine sand Sand, very fine Siderite T. D.: 130'	110'-114' 114'-115' 115'-130' 130'-135' 135'-140' Drill Hole I Location: County, Gr Logged by: 0'- 9' 9'- 14'	Clay, gray, with thin brown clay layers and traces of woody lignite, with very fine sand Clay, black, with lignite and very fine sand Clay, brown, to light brown, with very fine sand Sand, very fine, with brown clay Sand, very fine Clay, gray T. D.: 140' No. 94. Elevation 317' NE', Sec. 11, T. 4 S., R. 14 W. ant J. M. Howard 5/77. Clay, mottled, with fine sand Clay, tan, with fine sand	40'- 45' 45'- 50' 50'- 54' 54'- 60' 60'- 80' 80'- 85' 85'- 86'	interbedded very fine sand Lignite, with dark brown clay, and very fine sand Sand, very fine, with white to light gray clay Clay, white, with very fine sand Clay, gray, with very fine sand Clay, gray to light gray, glauconitic, with very fine sand Sand, very fine, with tan clay Siderite Core interval 20'-30' Recovered: 9' 1' 20'-29' Lignite, with some chocolate brown clay partings Core interval 40'-50' Recovered: Lost:
61'- 64' 64'- 66' 66'- 68' 68'- 70' 70'- 86' 86'- 90' 90'- 97' 97'-127' 127'-130' Drill Hole N Location:	and traces of lignite Lignite, with dark brown clay and very fine sand Clay, chocolate brown, with very fine sand Clay, white, with silt Sand, very fine Clay, brown, with very fine sand and trace of lignite Sand, very fine Clay, chocolate brown, fissile, with lignite Clay, chocolate brown, very lignitic, with very fine sand Sand, very fine Sand, ve	110'-114' 114'-115' 115'-130' 130'-135' 135'-140' Drill Hole I Location: County, Gr Logged by: 0'- 9' 9'- 14' 14'- 20'	Clay, gray, with thin brown clay layers and traces of woody lignite, with very fine sand Clay, black, with lignite and very fine sand Clay, brown, to light brown, with very fine sand Sand, very fine, with brown clay Sand, very fine with brown clay Sand, very fine Clay, gray T. D.: 140' No. 94. Elevation 317' NE%, Sec. 11, T. 4 S., R. 14 W. ant J. M. Howard 5/77. Clay, mottled, with fine sand Clay, tan, with fine sand Sand, fine, interbedded with	40'- 45' 45'- 50' 50'- 54' 54'- 60' 60'- 80' 80'- 85' 85'- 86'	interbedded very fine sand Lignite, with dark brown clay, and very fine sand Sand, very fine, with white to light gray clay Clay, white, with very fine sand Clay, gray, with very fine sand Clay, gray to light gray, glauconitic, with very fine sand Sand, very fine, with tan clay Siderite Core interval 20'-30' Recovered: 9' 20'-29' Lignite, with some chocolate brown clay partings Core interval 40'-50' Recovered: 8' Lost: 8' Lost: 8' Lost:
61'- 64' 64'- 66' 66'- 68' 68'- 70' 70'- 86' 86'- 90' 90'- 97' 127'-130' Drill Hole N Location: County, Sal	and traces of lignite Lignite, with dark brown clay and very fine sand Clay, chocolate brown, with very fine sand Clay, white, with silt Sand, very fine Clay, brown, with very fine sand and trace of lignite Sand, very fine Clay, chocolate brown, fissile, with lignite Clay, chocolate brown, very lignitic, with very fine sand Sand, very fine Siderite T. D.: 130' No. 92. Elevation 280' SW¼, Sec. 17, T. 3 S., R. 14 W. line	110'-114' 114'-115' 115'-130' 130'-135' 135'-140' Drill Hole I Location: County, Gr Logged by: 0'- 9' 9'- 14' 14'- 20' 20'- 24'	Clay, gray, with thin brown clay layers and traces of woody lignite, with very fine sand Clay, black, with lignite and very fine sand Clay, brown, to light brown, with very fine sand Sand, very fine, with brown clay Sand, very fine Clay, gray T. D.: 140' No. 94. Elevation 317' NE', Sec. 11, T. 4 S., R. 14 W. ant J. M. Howard 5/77. Clay, mottled, with fine sand Clay, tan, with fine sand	40'- 45' 45'- 50' 50'- 54' 54'- 60' 60'- 80' 80'- 85' 85'- 86'	interbedded very fine sand Lignite, with dark brown clay, and very fine sand Sand, very fine, with white to light gray clay Clay, white, with very fine sand Clay, gray to light gray, glauconitic, with very fine sand Sand, very fine, with tan clay Siderite Core interval 20'- 30' Recovered: 9' 1' 20'-29' Lignite, with some chocolate brown clay partings Core interval 40'- 50' Recovered: 8' 2' 42'-44' Lignite
61'- 64' 64'- 66' 66'- 68' 68'- 70' 70'- 86' 86'- 90' 90'- 97' 127'-130' Drill Hole N Location: County, Sal	and traces of lignite Lignite, with dark brown clay and very fine sand Clay, chocolate brown, with very fine sand Clay, white, with silt Sand, very fine Clay, brown, with very fine sand and trace of lignite Sand, very fine Clay, chocolate brown, fissile, with lignite Clay, chocolate brown, very lignitic, with very fine sand Sand, very fine Sand, ve	110'-114' 114'-115' 115'-130' 130'-135' 135'-140' Drill Hole I Location: County, Gr Logged by: 0'- 9' 9'- 14' 14'- 20' 20'- 24' 24'- 28'	Clay, gray, with thin brown clay layers and traces of woody lignite, with very fine sand Clay, black, with lignite and very fine sand Clay, brown, to light brown, with very fine sand Sand, very fine, with brown clay Sand, very fine Clay, gray T. D.: 140' No. 94. Elevation 317' NE%, Sec. 11, T. 4 S., R. 14 W. ant J. M. Howard 5/77. Clay, mottled, with fine sand Clay, tan, with fine sand Sand, fine, interbedded with mottled clay Sand, fine, tan Clay, gray	40'- 45' 45'- 50' 50'- 54' 54'- 60' 60'- 80' 80'- 85' 85'- 86'	interbedded very fine sand Lignite, with dark brown clay, and very fine sand Sand, very fine, with white to light gray clay Clay, white, with very fine sand Clay, gray, with very fine sand Clay, gray to light gray, glauconitic, with very fine sand Sand, very fine, with tan clay Siderite Core interval 20'-30' Recovered: 9' 1' 20'-29' Lignite, with some chocolate brown clay partings Core interval 40'-50' Recovered: 8' 2' 42'-44' Lignite 44'-45'½' Sand, with lignite and some brown clay
61'- 64' 64'- 66' 66'- 68' 68'- 70' 70'- 86' 86'- 90' 90'- 97' 127'-130' Drill Hole N Location: County, Sal Logged by:	and traces of lignite Lignite, with dark brown clay and very fine sand Clay, chocolate brown, with very fine sand Clay, white, with silt Sand, very fine Clay, brown, with very fine sand and trace of lignite Sand, very fine Clay, chocolate brown, fissile, with lignite Clay, chocolate brown, very lignitic, with very fine sand Sand, very fine Siderite T. D.: 130' No. 92. Elevation 280' SW½, Sec. 17, T. 3 S., R. 14 W. line D. W. Lumbert 4/77.	110'-114' 114'-115' 115'-130' 130'-135' 135'-140' Drill Hole I Location: County, Gr Logged by: 0'- 9' 9'- 14' 14'- 20' 20'- 24'	Clay, gray, with thin brown clay layers and traces of woody lignite, with very fine sand Clay, black, with lignite and very fine sand clay, brown, to light brown, with very fine sand Sand, very fine, with brown clay Sand, very fine Clay, gray T. D.: 140' No. 94. Elevation 317' NE%, Sec. 11, T. 4 S., R. 14 W. ant J. M. Howard J. M. Howard J. M. Howard Solot, tan, with fine sand Clay, tan, with fine sand Clay, tan, with fine sand Sand, fine, interbedded with mottled clay Sand, fine, tan Clay, gray Clay, green and brown inter-	40'- 45' 45'- 50' 50'- 54' 54'- 60' 60'- 80' 80'- 85' 85'- 86'	interbedded very fine sand Lignite, with dark brown clay, and very fine sand Sand, very fine, with white to light gray clay Clay, white, with very fine sand Clay, gray, with very fine sand Clay, gray to light gray, glauconitic, with very fine sand Sand, very fine, with tan clay Siderite Core interval 20'- 30' Recovered: 9' 1' 20'-29' Lignite, with some chocolate brown clay partings Core interval 40'- 50' Recovered: 8' 2' 42'-44' Lignite 44'-45'½' Sand, with lignite and some brown clay 45'½-50' Clay, light gray, with
61'- 64' 64'- 66' 66'- 68' 68'- 70' 70'- 86' 86'- 90' 90'- 97' 127'-130' Drill Hole N Location: County, Sal Logged by:	and traces of lignite Lignite, with dark brown clay and very fine sand Clay, chocolate brown, with very fine sand Clay, white, with silt Sand, very fine Clay, brown, with very fine sand and trace of lignite Sand, very fine Clay, chocolate brown, fissile, with lignite Clay, chocolate brown, very lignitic, with very fine sand Sand, very fine Siderite T. D.: 130' No. 92. Elevation 280' SW¼, Sec. 17, T. 3 S., R. 14 W. line	110'-114' 114'-115' 115'-130' 130'-135' 135'-140' Drill Hole I Location: County, Gr Logged by: 0'- 9' 9'- 14' 14'- 20' 20'- 24' 24'- 28' 28'- 34'	Clay, gray, with thin brown clay layers and traces of woody lignite, with very fine sand Clay, black, with lignite and very fine sand Clay, brown, to light brown, with very fine sand Sand, very fine, with brown clay Sand, very fine Clay, gray T. D.: 140' No. 94. Elevation 317' NE'4, Sec. 11, T. 4 S., R. 14 W. ant J. M. Howard 5/77. Clay, mottled, with fine sand Clay, tan, with fine sand Sand, fine, interbedded with mottled clay Sand, fine, tan Clay, gray Clay, gray Clay, green and brown interbedded	40'- 45' 45'- 50' 50'- 54' 54'- 60' 60'- 80' 80'- 85' 85'- 86'	interbedded very fine sand Lignite, with dark brown clay, and very fine sand Sand, very fine, with white to light gray clay Clay, white, with very fine sand Clay, gray, with very fine sand Clay, gray to light gray, glauconitic, with very fine sand Sand, very fine, with tan clay Siderite Core interval 20'-30' Recovered: Lost: 9' 1' 20'-29' Lignite, with some chocolate brown clay partings Core interval 40'-50' Recovered: Lost: 8' 2' 42'-44' Lignite 44'-45'½' Sand, with lignite and some brown clay 45'½-50' Clay, light gray, with very fine sand
61'- 64' 64'- 66' 66'- 68' 68'- 70' 70'- 86' 86'- 90' 90'- 97' 127'-130' Drill Hole N Location: County, Sal Logged by:	and traces of lignite Lignite, with dark brown clay and very fine sand Clay, chocolate brown, with very fine sand Clay, white, with silt Sand, very fine Clay, brown, with very fine sand and trace of lignite Sand, very fine Clay, chocolate brown, fissile, with lignite Clay, chocolate brown, very lignitic, with very fine sand Sand, very fine Siderite T. D.: 130' No. 92. Elevation 280' SW¼, Sec. 17, T. 3 S., R. 14 W. line D. W. Lumbert 4/77. Sand, very fine to fine, with	110'-114' 114'-115' 115'-130' 130'-135' 135'-140' Drill Hole I Location: County, Gr Logged by: 0'- 9' 9'- 14' 14'- 20' 20'- 24' 24'- 28' 28'- 34'	Clay, gray, with thin brown clay layers and traces of woody lignite, with very fine sand Clay, black, with lignite and very fine sand clay, brown, to light brown, with very fine sand Sand, very fine, with brown clay Sand, very fine Clay, gray T. D.: 140' No. 94. Elevation 317' NE%, Sec. 11, T. 4 S., R. 14 W. ant J. M. Howard J. M. Howard J. M. Howard Solot, tan, with fine sand Clay, tan, with fine sand Clay, tan, with fine sand Sand, fine, interbedded with mottled clay Sand, fine, tan Clay, gray Clay, green and brown inter-	40'- 45' 45'- 50' 50'- 54' 54'- 60' 60'- 80' 80'- 85' 85'- 86'	interbedded very fine sand Lignite, with dark brown clay, and very fine sand Sand, very fine, with white to light gray clay Clay, white, with very fine sand Clay, gray, with very fine sand Clay, gray to light gray, glauconitic, with very fine sand Sand, very fine, with tan clay Siderite Core interval 20'- 30' Recovered: 9' 1' 20'-29' Lignite, with some chocolate brown clay partings Core interval 40'- 50' Recovered: 8' 2' 42'-44' Lignite 44'-45'½' Sand, with lignite and some brown clay 45'½-50' Clay, light gray, with

	ARKANSAS LIGNITE INVESTIGATIONS	
Drill Hole No. 96. Elevation 301'	Drill Hole No. 98. Elevation 270'	115'-130' Clay, gray to green, with siderite
Location: SW¼, Sec. 13, T. 4 S., R. 14 W.	Location: SW¼, Sec. 9, T. 17 S., R. 21 W.	and sand
County, Grant Logged by: J. M. Howard 5/77.	County, Columbia Logged by: B. F. Clardy 5/77.	130'-150' Sand, gray, very fine, with siderite and traces of lignite
0'- 9' Clay, cream to tan, with fine	0'- 20' Clay, light brown to buff,	150'-155' Clay, gray, with silt 155'-160' Sand, gray, and siderite
sandy silt 9'- 12' Clay, light to dark brown	with silt 20'- 30' Clay, gray to brown, with	160'-165' Clay, gray, with sand 165'-175' Sand, gray, with gray clay
12'- 16' Lignite, soft 16'- 17' Clay, dark brown 17'- 19' Lignite, hard	silt 30'- 40' Clay, gray to green, glauconitic	175'-200' Clay, gray, with slit T. D.: 200'
19'- 22' Clay, light brown	with silt 40'- 60' Clay, gray, with silt	
22'- 25' Silt, gray, with gray clay 25'- 32' Clay, gray, with silt	60'- 65' Clay, gray to brown 65'- 80' Clay, gray, with silt	Drill Hole No. 101. Elevation 290' Location: NE½, Sec. 24, T. 17 S., R. 22 W.
32'- 34' Clay, gray green	80'- 85' Clay, with very fine sand	County, Columbia
34'- 40' Clay, gray green, interbedded with medium to dark brown clay, and trace of lignite	and trace of lignite 85'-125' Clay, gray, with silt and trace of lignite	Logged by: D. W. Lumbert 5/77. 0'- 45' Sand, fine to very fine, with tan
40'- 461/2' Sand, gray, medium to fine,	125'-150' Silt, with gray clay, and very	to red alternating clays 45'- 50' Sand, very fine, with tan and
with trace of lignite 46½'-50' Clay, gray green	fine sand 150'-155' Clay, gray, with silt	gray alternating clays
50'- 61½' Clay, light green 61½'-64' Sand, fine, green, glauconitic	155'-160' Clay, brown, lignitic 160'-180' Sand, very fine, with silt and	50'- 55' Clay, gray, with very fine sand 55'- 75' Clay, dark gray to dark brown,
64'- 70' Clay, light green 70'- 72' Clay, light green and light	brown clay and traces of lignite 180'-185' Clay, gray, with silt	with lignite and very fine sand 75'-105' Clay, gray, glauconitic, with
brown interbedded	185'-190' Clay, gray, with silt and siderite	very fine sand
72'- 87' Clay, green, with silt 87'- 88' Clay, green, with fine green	190'-195' Clay, gray to brown, with trace of lignite	105'-110' Clay, gray, glauconitic, with trace of lignite
glauconitic sand 88'-115' Sand, fine, green, glauconitic	195'-199' Clay, gray @ 198'-199' siderite	110'-115' Clay, brown, with trace of lignite and very fine sand
with silt @ 115' lignite stringer	T. D.: 199'	115'-120' Clay, gray, with very fine sand 120'-150' Clay, gray to brown, with very
115'-117' Clay, dark green 117'-139' Sand, fine, green, glauconitic,	Drill Hole No. 99. Elevation 310' Location: NW4, Sec. 17, T. 17 S., R. 21 W.	fine sand 150'-160' Clay, brown, with trace of
micaceous @ 139' siderite	County, Columbia Logged by: D. W. Lumbert 5/77.	lignite 160'-170' Sand, very fine, with gray clay
139'-150' Clay, green and light brown interbedded	0'- 15' Clay, red, with fine sand	and traces of lignite 170'-180' Clay, gray, with very fine sand
Core interval 10'-20' Recovered: Lost:	15'- 20' Clay, light gray to tan, with very fine sand	180'-190' Clay, gray, with Iron concre- tions and very fine sand
4'10" 5'2" 10'8"-13' Clay, tan to brown	20'- 45' Clay, light gray, with very fine to fine sand	190'-198' Clay, gray, with silt T. D.: 198'
13' - 15'6" Lignitic clay T. D.: 150'	45'- 50' Clay, gray, interlayered with	1. 5 135
1. 5 150	brown clay and very fine sand 50'-105' Clay, gray, glauconitic, with	
	very fine sand @ 80' trace of lignite	Drill Hole No. 102. Elevation 285' Location: NE%, Sec. 24, T. 17 S., R. 22 W.
Drill Hole No. 97a. Elevation 260' Location: NW%, Sec. 19, T. 4 S., R. 13 W.	105'-110' Clay, gray, glauconitic, with siderite and very fine sand	County, Columbia Logged by: D. W. Lumbert 5/77.
County, Grant	110'-150' Clay, gray to dark gray, with	
	traces of lignite and very fine sand	0'- 35' Clay, tan to red, with very fine sand
0'- 3½' Clay, gray to reddish brown 3½'-20' Clay, reddish brown, with fine	@ 120' siderite 150'-160' Clay, gray to dark gray, glauco-	35'- 55' Clay, tan to white, with very fine sand
to coarse sand T. D.: 20'	nitic, with very fine sand 160'-170' Clay, gray, and traces of lignite	@ 40'-42' Sand, very fine 55'- 60' Clay, gray, with very fine sand
	and very fine sand 170'-180' Clay, gray to green, glauconitic,	60'- 70' Clay, gray to brown, lignitic with very fine sand and approxi-
Drill Hole No. 97b. Elevation 260'	with trace of lignite	mately 1' lignite
Location: SE¼, Sec. 19, T. 4 S., R. 13 W.	180'-200' Clay, gray, glauconitic, with very fine sand and minor	70'- 90' Clay, gray, with very fine sand 90'- 95' Clay, gray, with very fine sand
County, Grant Logged by: J. D. McFarland 5/77.	siderite T. D.: 200'	95'-130' Clay, gray, minor glauconite, and very fine sand
0'- 16' Clay, light gray to reddish		@115'-120' trace of lignite 130'-140' Clay, gray and brown inter-
brown, with very fine to medium sand	Drill Hole No. 100. Elevation 275' Location: NE¼, Sec. 19, T. 17 S., R. 21 W.	bedded, and silt 140'-150' Clay, brown, with silt
16'- 22' Clay, with very fine to medium sand and few quartz pebbles	County, Columbia Logged by: B. F. Clardy 5/77.	150'-155' Clay, brown, with gray layers,
@ 19'-21' gravel		and silt 155'-160' Clay, gray, with very fine sand
brown interbedded, with sand	0'- 20' Sand, fine, red and buff, with light gray clay	and trace of lignite 160'-168' Clay, gray, glauconitic, with
and silt, trace of lignite 40'- 60' Clay, dark gray to gray and	20'- 25' Clay, red and buff, with fine sand	very fine sand 168'-180' Sand, very fine, with thin lignite
brown, with silt 60'- 70' Clay, gray, with sand and few	25'- 45' Clay, gray, with very fine sand and silt	layers and brown to gray clay 180'-185' Clay, gray, glauconitic, mica-
sand layers 70'-107' Sand, very fine to medium,	45'- 50' Clay, gray, with trace of lignite 50'- 80' Silt, gray, with fine gray sand	ceous, with very fine sand @ 181' siderite
interbedded with clay @ 103½ red clay with sand	and gray clay 80'- 95' Clay, gray, with silt, and traces	185'-190' Sand, very fine, with gray clay 190'-198' Clay, light gray to gray, glauco-
107'-150' Clay, gray, interbedded with sand and red clay	of lignite 95′-115′ Clay, gray to green, glauconitic	nitic, micaceous, with very fine sand
T. D.:150'	with sand	T. D. 198'

Drill Hole	No. 103. Elevation 290'	60'- 70'	Clay, brown, glauconitic, with	90'-100'	Clay, dark gray to green, with
	SE¼, Sec. 24, T. 17 S., R. 22 W.		very fine sand		traces of siderite
County, C			@ 65'-70' trace of lignite	100'-110'	Clay, glauconitic, with traces
Logged by	/: D. W. Lumbert 5/77.	70'- 90'	Clay, green to blue, very glau-		of lignite
0'- 10'	Sand, very fine, with light		conitic, with silt and very fine sand	110′-120′	@110' siderite
	grav clav		@ 83' siderite	110-120	Clay, dark gray to gray and green, with traces of lignite
10'- 20'		90'-100'	Clay, gray to green, with very	120'-125'	Clay, gray, interlayered with
	iron stained, very fine sand	100/ 110/	fine sand		chocolate brown, with lignite
20'- 25'	@15'-20' increase in sand Clay, light gray, with very fine	100'-110'	Sand, very fine, with gray to	40544004	and very fine sand
20 20	sand	110′-120′	green clay, and traces of lignite Sand, very fine, interbedded	125′-130′	Clay, gray, with very fine
25'- 3 0'		110 120	with gray to brown clay and	130'-140'	sand Clay, blue-gray, with silt
	sand		traces of lignite	140'-150'	Clay, gray, slightly glauconitic
30'- 35' 35'- 40'		120'-130'	Clay, gray, slightly glauconitic		with very fine sand
40'- 50'	and, tory into, with gray cray		with traces of lignite and very	150′-160′	Clay, gray, with very fine sand
40 - 50	Clay, gray to brown, micaceous with very fine sand	130′-140′	fine sand	160′-170′	Clay, blue-gray, with very fine
50'- 55'	Clay, dark gray, micaceous,	130 -140	Clay, gray, slightly glauconitic and very fine sand	170′-180′	sand and siderite
	with very fine sand	140'-150'	Sand, w/gray, glauconitic clay	170-180	Clay, gray, glauconitic, with traces of lignite
55 '- 65 '	- , , g, to g. com, g. coomicio	150'-160'	Clay, gray to green, and sand	180'-190'	Clay, gray, with silt
	with very fine sand	1001.1001	with traces of lignite	190'-200'	Clay, gray, glauconitic, with
65'- 7 0 '	@ 55'-60' trace of lignite Sand, very fine, with glauconitic	160′-190′	Clay, gray to green, with silt		interbedded siderite
00 /0	clay and siderite layers	190′-200′	@ 171' siderite Silt, with gray clay		T. D.: 200'
70'- 80'	Clay, gray, glauconitic, with	100 200	T. D.: 200'	Drill Hole	107. Elevation 245'
	very fine sand				NE¼, Sec. 4, T. 18 S., R. 22 W.
80'- 9 0 '	and the state of t		No. 105. Elevation 280'	County, C	
	green glauconitic clay		SE¼, Sec. 26, T. 17 S., R. 22 W.	Logged by	: D. W. Lumbert 5/77.
90'- 95'	@ 85'-90' trace of lignite Sand, very fine, with gray clay	County, C			
95'-100'	Clay, gray, glauconitic, with	Logged by	: D. W. Lumbert 5/77.	0′- 10′	,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,,
	very fine sand	0'- 20'	Clay, tan to red, with very fine	10'- 20'	with silt Clay, light brown to brown,
100′-1 0 5′	Clay, gray to brown, with trace		sand	10 - 20	with iron concretions and very
105′-110′	of lignite and very fine sand	20'- 30'	Clay, light gray to tan, with		fine sand
105 -110	Clay, gray, interlayered with white clay and siderite layers	20/ 50/	very fine sand	20'- 25'	Clay, gray, with very fine sand
110'-120'	Sand, very fine, with gray	30′- 50′	,, 5,,, 9,	25′- 30′	Clay, dark gray, with fine to
	glauconitic clay and siderite	50'- 65'	with very fine sand Clay, gray, glauconitic, with	30'- 50'	very fine sand
120′-130′	Clay, gray, with very fine sand		very fine sand and siderite	30 - 50	Clay, gray to dark gray, inter- layered and very fine sand
130′-140′	Clay, gray to brown, with very	65'- 95'	Clay, gray to blue, with very	50'- 80'	Clay, gray, glauconitic, with
140'-150'	fine sand		fine sand increasing to 95'		very fine sand
140 -150	Clay, gray, with layers of lignitic	95′-100′	Clay, gray, glauconitic, fissile,	80'- 90'	Clay, gray
150'-160'	clay and very fine sand Sand, very fine, with gray to	100′-110′	with fine sand	0011001	@ 89' siderite
	green and brown clay	100 - 110	Clay, gray, glauconitic, with traces of lignite	90′-100′	Clay, gray, with trace of lignite
	@ 155'-160' traces of lignite	110'-130'	Clay, gray, interbedded with		and interbedded siderite and very fine sand
160′-170′	Sand, with gray micaceous clay		sand	100'-115'	Clay, gray, very glauconitic with
170′-180′	Clay, gray, with very fine, slight	130′-150′	Sand, very fine, interbedded		layers of siderite
	ly glauconitic sand @ 172' siderite	45014001	with gray to brown clay	115'-120'	Sand, very fine, some iron
180'-190'	Clay, gray, glauconitic, with	150′-160′	Sand, with gray, glauconitic		cemented with gray clay
	interbedded very fine sand:	160'-170'	clay Clay, gray, with very fine	120′-130′	Clay, green to brown, with trace
	traces of lignite in sand	, .	sand	130′-140′	of lignite
190′-198′	Sand, very fine, with gray clay	170'-175'	Sand, very fine, with gray to	100 -140	Clay, gray to brown, with traces of lignite and very fine sand
	@ 195'-198' traces of lignite		green clay	140'-145'	Clay, gray, glauconitic, with
	T. D.: 198'	175′-200′	Sand, very fine, interbedded		very fine sand
Drill Hole	No. 104. Elevation 280'		with gray clay and traces of lignite		@ 145' iron cemented sand
Location:	NE¼, Sec. 26, T. 17 S., R. 22 W.		T. D.: 200'		T. D.: 145'
County, C				Drill Hole	No. 108. Elevation 225'
Logged by	: D. W. Lumbert 5/77.		No. 106. Elevation 260'	Location:	SE14, Sec. 5, T. 18 S., R. 22 W.
0'- 10'	Sand, fine, with light gray to	Location:	SE¼, Sec. 34, T. 17 S., R. 22 W.	County, Co	olumbia
	tan clay	County, C	olumbia : D. W. Lumbert 5/77.	Logged by	: D. W. Lumbert 5/77.
10'- 20'	Sand, fine to very fine, w/light	Logged by	. D. W. Lumbert 5///.	0'- 10'	Cond fine with and alout the
201 251	gray clay and iron concretions	0'- 15'	Sand, very fine to fine, with	10'- 40'	Sand, fine, with red clay binder Clay, tan to red, with very fine
20'- 25'	Clay, gray to brown, iron stain-		tan clay		sand
25'- 30'	ed, with very fine sand Clay, chocolate brown, with	15'- 28'	Clay, light gray and brown	40'- 50'	Clay, red with gray layers, and
	very fine sand	28'- 30'	interlayered, and very fine sand Sand, very fine	501 001	very fine sand
30'- 40'	Clay, gray, slightly glauconitic	30'- 40'	Clay, gray, micaceous, with very	50'- 60'	Clay, blue-gray, with very fine
	with trace of lignite and very		fine sand	60'- 65'	Sand coarse grading to page
40'- 45'	fine sand	40'- 50'	Clay, gray to brown, lignitic,	20 00	Sand, coarse, grading to pea gravel, with some gray clay
-0 -40	Clay, gray, interbedded with brown lignitic material and	EQ' ==:	with very fine sand	65'- 70'	Clay, gray, with coarse sand
	very fine sand	50′- 55′	Clay, dark gray, with thin	70'- 80'	Clay, gray, carbonaceous, with
45'- 55'	Clay, gray, glauconitic, with		stringer of lignite, and very fine sand	90/ 00:	very fine sand increasing to 80'
	very fine sand	55'- 75'	Clay, gray, slightly glauconitic	80'- 90 '	Clay, gray, with trace of lignite and very fine sand
55'- 60 '	@ 51' siderite		with very fine sand	90′-100′	Clay, gray, glauconitic with very
55 - 60	Clay, gray, glauconitic, with trace of lignite and very fine	75/ 00:	@ 75' siderite		fine sand
	sand	75'- 9 0 '	Clay, dark gray to green, mica- ceous, with silt	100′-150′	Clay, gray, glauconitic with very
			oods, with siit		fine sand

	@ 110'-115' trace of lignite		and very fine to fine sand	120′-145′	Clay, gray, glauconitic, mica- ceous, with traces of lignite
150'-165'	@ 115'-150' siderite layers Clay, gray, with very fine sand	80'- 90' 90'-100'	Clay, gray, with very fine sand Clay, gray, with very fine sand		and minor siderite
165'-180'	Clay, gray, decreasing glauconite with interbedded siderite and	100′-115′	and traces of lignitic material Clay, gray to brown, with traces	145'-150'	Sand, very fine, with gray, glauconitic clay
100/100/	very fine sand	115′-120′	of lignitic material Clay, gray, with very fine sand	150′-155′	Clay, gray, glauconitic, with very fine sand
180′-190′ 190′-200′	Clay, gray, with very fine sand Clay, gray, with silt T. D.: 200'	120′-130′	Clay, gray, with very fine sand very fine sand	155'-160'	Sand, very fine, with clay and interbedded siderite
Drill Hole	No. 109. Elevation 270'	130′-140′	@125'-130' trace of lignite Sand, very fine, with gray clay	160′-170′	Clay, gray, glauconitic, with very fine sand
Location:	SW¼, Sec. 8, T. 18 S., R. 22 W.		and lignite flakes	170'-180'	Sand, very fine, with gray, glauconitic clay and siderite
County, Co Logged by	olumbia : D. W. Lumbert 5/77.	140′-150′	Clay, gray, glauconitic, mica- ceous, with traces of lignite	180'-200'	Clay, glauconitic, with siderite
0'- 10'	Clay, red to brown, with fine	150'-160'	and very fine sand Clay, gray and brown, inter-		and very fine sand T. D.: 200'
10'- 40'	sand Clay, brown		layered: trace of lignite in brown clay and very fine sand		
40'- 60'	Clay, tan and brown inter- layered with silt	160′-175′	Clay, gray, glauconitic, with very fine sand		No. 114. Elevation 240' NE¼, Sec. 2, T. 19 S., R. 23 W.
60′- 65′	Clay, light gray, with minor woody lignite, and very fine	175′-180 ′	Sand, very fine, with gray glauconitic clay and traces of	County, Co	
65'- 75'	sand Sand, coarse, with gravel and	180′-190′	lignite Sand, very fine, interbedded	0'- 10'	Sand, fine, with tan clay
75'- 95'	gray clay Clay, gray, with traces of lignite	190′-200′	with gray clay Clay, gray, with very fine sand	10'- 20' 20'- 55'	Clay, tan, with very fine sand Clay, red and tan interlayered,
	and silt	100 200	T. D.: 200'	55'- 6 0 '	and very fine sand Sand, coarse, with red to brown
95′- 150 ′	Clay, gray to light gray, glauco- nitic, with very fine sand and		No. 112. Elevation 250'		clay
	layers of siderite: minor trace of lignite	Location: County, C	NE¼, Sec. 26, T. 18 S., R. 23 W. olumbia	60'- 90'	Clay, gray, with very fine sand and minor glauconite
150′-160′	Clay, gray, micaceous, with very fine sand		: D. W. Lumbert 5/77.	90′-100′ 100′-120′	Clay, gray, with trace of lignite Clay, gray, slightly glauconitic
160′-18 0′	Clay, gray, glauconitic, mica- ceous, w/fine to very fine sand	0'- 25'	Clay, tan to red, with very fine sand	120′-130′	with very fine sand Clay, gray, glauconitic, with
180′-200′	Clay, gray, with silt T. D.: 200'	25'- 30'	Clay, light gray, with very fine sand	100/150/	interbedded siderite, and very fine to fine sand
Drill Hole	No 110. Elevation 285'	30'- 35' 35'- 40'	Clay, gray, with silt Clay, light gray, glauconitic	130′-150′	Clay, green, very glauconitic with increasing stringers of
	NW¼, Sec. 18, T. 18 S., R. 22 W.	40'- 50'	with very fine sand Clay, gray and tan interlayered	150′-190′	siderite Clay, gray to green, with very
	: D. W. Lumbert 5/77.	50'- 60'	and very fine sand		fine, micaceous sand @ 165' siderite
0'- 10'	Clay, tan to light brown, w/silt		Clay, gray, glauconitic, with very fine sand	40010001	@ 170'-180' trace of lignite
10'- 50'	Clay, red to reddish brown, with silt	60′- 80′	Clay, gray, with minor woody lignite and very fine sand	190′-200′	Clay, gray, glauconitic, mica- ceous, with trace of lignite
50'- 65'	Clay, red to light tan, inter- layered, and very fine sand	80'- 90'	@ 78'-80' woody lignite Clay, with lignite flakes, and		and fine sand T. D.: 200'
65'- 85'	Sand, coarse, with minor pea gravel and red to gray clay	90'- 95'	very fine sand Sand, very fine, with gray clay		
85'- 90'	Clay, red to brown, with silt	95'-105'	Clay, gray, glauconitic, with		No. 115. Elevation 250'
90′-100′	Clay, gray to dark gray, mica- ceous	105′-110′	siderite layers and very fine sand Sand, with gray clay, and traces	County, C	
100′-105′	Clay, gray, and brown inter- layered, and lignitic material and very fine sand	110′-155′	of lignite Clay, gray, glauconitic, with very fine sand	Logged by	: D. W. Lumbert 5/77.
105′-115′	Clay, gray, micaceous, with		@ 145' siderite	0'- 10' 10'- 25'	Sand, fine, with tan to red clay
115′-120′			@ 150'-155' traces of woody lignite		layered, and very fine sand
120'-175'	tions and gray clay Clay, gray, minor glauconite	155′-160′	Sand, very fine, with glauconitic clay and traces of woody lignite	25'- 30' 30'- 40 '	Sand, very fine, with red clay Sand, very fine to coarse, with
175′-185′	and silt Clay, gray, with traces of	160′-190′	Clay, gray, with very fine sand @ 175' siderite	40'- 50'	minor red clay Clay, red, w/coarse to fine sand
185′-200′	lignite and very fine sand Clay, gray to brown, mica-	190′-200′	Clay, gray, glauconitic, mica- ceous, with very fine sand	50'- 60' 60'- 80'	Clay, red, with very fine sand Sand, with pea gravel, increasing
185 -200	ceous, with very fine sand T. D.: 200'		T. D.: 200'	80'- 90'	to 80' Clay, gray, glauconitic, with
			No. 113. Elevation 250' SW¼, Sec. 35, T. 18 S., R. 23 W.	90′-100′	coarse sand Clay, gray, glauconitic, mica-
	111. Elevation 285'	County, C	olumbia	100′-110′	ceous, with coarse to fine sand Sand, coarse, interbedded with
County, C			7: D. W. Lumbert 5/77.		gray clay
	v: D. W. Lumbert 5/77.	0'- 10'	fine sand	110′-130′	Sand, coarse to fine, with gray glauconitic clay and trace of
0'- 20'	Clay, red, with fine to very fine sand	10'- 45'	Clay, red to yellow, with very fine sand	130′-150′	lignite Clay, gray, glauconitic, with fine
20'- 30' 30'- 35'	Sand, very fine, with red clay Clay, red, with very fine sand	45'- 50' 50'- 70'	Clay, tan, with very fine sand Sand, coarse, with pea gravel	150′-160′	sand; @ 139' siderite Clay, gray, with silt
35'- 40' 40'- 50'	Sand, very fine, w/red to tan clay Sand, very fine, with red clay	70'- 85' 85'- 90'	Clay, gray, with very fine sand	160′-180′	@ 158' sand, fine Clay, gray, glauconitic, with
	and some carbonaceous material		and trace of lignite		very fine sand; @ 174' siderite
50'- 60' 60'- 70'	Gravel, with red clay Clay, gray, with very fine sand	90′-120′	Clay, gray, glauconitic, with very fine sand	180′-200′	Clay, gray, glauconitic, mica- ceous, with very fine sand
70'- 8 0 '	Clay, gray, with limonite layers		@ 100'-110' traces of lignite		T. D.: 200'

	No. 116. Elevation 250'	120′-135′	Sand, fine, with interbedded	40'- 50'	Sand, coarse, with pea gravel
County, C		135′-140′	gray clay and trace of lignite Clay, gray, with glauconitic very	50′- 60′	Clay, gray, with interbedded coarse sand
0'- 10'	Clay, tan, with fine sand	140′-150′	fine sand Clay, gray, with very fine sand	60′- 75′	Clay, gray, glauconitic, with fine sand
10'- 55'	Clay, red, with tan layers,	150′-160′	Clay, gray, very glauconitic, with very fine sand	75'- 95'	Clay, gray to green, glauconitic with siderite layers and very
55′- 60′	and very fine sand Clay, red with gray layers,	160′-170′	Sand, very fine, with glauco- nitic clay	95′-1 00′	fine sand Clay, gray, lignitic, with fine
60'- 65'	and very fine sand Clay, tan, with gray layers	170′-180′	Clay, gray to green, glauconitic with interbedded siderite and	100′-110′	sand Clay, gray, glauconitic, with
65'- 70'	and silt Clay, tan, with fine sand	180′-190′	sand Clay, gray, with very fine sand	110′-150′	lignite traces Clay, gray to brown, with
70′- 80′	Sand, coarse to fine, with iron concretions and tan clay	190′-200′	Clay, gray, glauconitic, with very fine sand		siderite layers, traces of lignite and very fine sand
80'- 90' 90'- 95'	Sand, coarse to pea gravel, with gray clay		T. D.: 200'	150′-160′	Clay, gray to green, with very fine sand, and interbedded very
95′-100′	Clay, gray, with fine sand Sand, fine to medium, with	Location:	No. 119. Elevation 240' SE¼, Sec. 12, T. 19 S., R. 23 W.	160′-190′	fine sand Clay, gray to green, glauconitic
100′-105′	gray clay Clay, gray, slightly glauconitic with fine sand	County, C Logged by	D.W. Lumbert 5/77.		with interbedded siderite and very fine sand
105′-110′	Sand, fine, with glauconitic	0'- 20'	Clay, red, with very fine sand	190′-200′	Clay, gray and brown interbed- ded, with siderite and very fine
110′-140′	clay Clay, gray, glauconitic, with	20'- 25' 25'- 45'	Sand, coarse, with pea gravel Clay, red, with very fine sand		sand T. D.: 200'
140′-150′	very fine sand Sand, very fine to fine, with	45'- 50' 50'- 55'	Clay, tan, with very fine sand Clay, tan to brown, with very		No. 122. Elevation 241'
150′-170′	gray clay Clay, gray to green, glauconitic	55'- 60'	fine sand Sand, very fine, with tan clay	Location: County, C	NE¼, Sec. 9, T. 19 S., R. 22 W. olumbia
170′-190′	with stringers of siderite and very fine sand	60′- 65′	Clay, tan, with very fine to fine sand	Logged by	: D. W. Lumbert 5/77.
190′-200′	Clay, gray, glauconitic, with very fine sand	65′- 75′ 75′- 80′	Gravel Clay, gray, with lignite and very	0'- 10'	Clay, brown to red, with fine sand
130 200	Clay, gray, glauconitic, with siderite layers and very fine sand	80'- 90'	fine sand Sand, fine, with gray glauconitic	10′- 20′	Clay, gray to light gray, with interlayered red and very fine
	T. D.: 200'	90′-100′	clay Clay, gray, glauconitic, with	20'- 30'	sand Clay, gray to red, with traces
Drill Hole	No. 117. Elevation 250'	100′-105′	very fine sand Clay, gray, with trace of lignite	30'- 70'	of oxidized lignite Clay, reddish brown, with silt
County, C		105′-110′	Clay, gray, with iron concre- tions, and very fine to fine sand	70'-100' 100'-120'	Clay, light brown with silt
Logged by	: D. W. Lumbert 5/77.	110′-140′	Clay, green, glauconitic, with		Clay, light brown and gray interlayered, and very fine sand
0'- 20' 20'- 30'	Clay, red		siderite layers, and very fine sand	120′-130′	Clay, gray, with very fine glauconitic sand
30'- 40'	Clay, red to brown, with silt Sand, very fine, with red clay and iron concretions	140′-170′	Clay, green, very glauconitic, with very fine sand and trace of lignite	130′-135′	Clay, gray, with lignite and interbedded very fine glauco- nitic sand
40'- 42' 42'- 65'	Clay, red, with fine sand Gravel, pea to medium size	170′-180′	@ 155' siderite	135′-150′	Clay, gray, glauconitic, with
65'- 80'	Clay, gray, glauconitic with very fine sand	180′-190′	fine sand	150′-170′	very fine sand Clay, gray, with very fine
80'- 95'	Clay, gray to green glauconitic with very fine sand	100 100	Clay, green, glauconitic, with very fine sand and interbedded siderite	170′-180′	sand Clay, gray, glauconitic, with
95′-1 00 ′	Sand, fine cemented, with glauconite and green clay	190'-200'	Clay, gray, glauconitic, with very fine sand	400/ 400/	traces of lignite and very fine sand
100′-130′	Clay, gray, glauconitic, with stringers of siderite and very		T. D.: 200'	180′-190′	Clay, gray, with traces of lignite
130′-140′	fine sand Clay, brown with gray layers,	Drill Hole I	No. 120. Elevation 220'	190′-200′	Clay, gray, glauconitic, with very fine sand
140′-190′	and very fine sand Clay, gray to green, glauconitic,	Location: County, Co	NE¼, Sec. 17, T. 19 S., R. 22 W.		T. D.: 200'
190′-200′	with very fine sand, some siderite	Logged by	D. W. Lumbert 5/77.		No. 123. Elevation 252' NW¼, Sec. 3, T. 19 S., R. 22 W.
190 -200	Clay, gray, glauconitic, with interbedded siderite and very	0′- 20′ 20′-100′	Clay, tan to red, with fine sand Sand, fine, grading to coarse		D. W. Lumbert 5/77.
	fine sand T. D.: 200'	100′-105′	Clay, reddish brown, with fine sand	0 - 10'	Clay, red and light gray inter- layered, and very fine sand
Drill Hole	No. 118. Elevation 270'	105′-200 ′	Clay, gray, glauconitic, with fine sand	10'- 30'	Sand, fine to very fine, with red clay
County, Co	NE¼, Sec. 2, T. 20 S., R. 23 W. olumbia		T. D.: 200'	30'- 50' 50'- 70'	Clay, reddish brown, with silt Clay, light gray and reddish
	: D. W. Lumbert 5/77.	Drill Hole I	No. 121. Elevation 220'	00 ,0	brown interlayered, and very fine sand
0'- 25' 25'- 60'	Clay, red, with sand Sand, fine, with minor red clay	Location: County, Co	NE¼, Sec. 16, T. 19 S., R. 22 W.	70'- 75'	Clay, gray, with very fine sand
60′- 80′	Clay, red, with interbedded fine sand		D. W. Lumbert 5/77.	75'- 85' 85'-115'	Gravel, pea with coarse sand Clay, gray, very glauconitic,
80'- 85' 85'- 9 0'	Sand, fine, with gray clay Gravel, with fine sand	0'- 10'	Clay, light gray, with coarse sand	115′-120′	Sand, fine, with traces of lignite
90′-100′	Sand, fine, with gray glauconitic clay	10'- 30'	Clay, gray to tan, with very fine sand	120′-135′	and gray, glauconitic clay Clay, green, very glauconitic
100′-120′	Sand, very fine, with gray glau- conitic clay and siderite	30'- 40'	Clay, light gray layered with	135′-150′	with very fine sand and siderite Clay, gray, glauconitic, with
	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		brown, and very fine sand		siderite

150′-160′	Clay, gray, glauconitic, mica-	Drill Hole	No. 126. Elevation 280'	80'- 90'	Clay, gray, with traces of lignite
160′-170′	ceous, with very fine sand Clay, gray, glauconitic, with	County, C		90′-100′	Clay, gray, glauconitic, with very fine sand
170′-190′	very fine sand Clay, gray to green, very glau-		: D. W. Lumbert 5/77.	100′-110′ 110′-150′	Clay, gray, with very fine sand Clay, gray, glauconitic, with
190′-200′	conitic, with very fine sand Clay, green, with layers of	0'- 10'	Sand, very fine, with gray to tan clay, and minor lignitic		very fine sand @ 145' increase in sand
	siderite and very fine sand T. D.: 200'	10'- 15'	material Clay, gray layered with tan,	150′-160′	Clay, gray, with very fine sand and traces of lignite
		15'- 20'	and very fine sand Clay, white to light gray, with	160′-180′	Clay, gray, with interbedded very fine to fine sand
Drill Hole	No. 124. Elevation 270'	20'- 25'	fine sand Clay, tan, with minor iron stain	180′-190	@ 170'-180' minor glauconite Clay, gray, slightly glauconitic
	NE¼, Sec. 34, T. 18 S., R. 22 W.	25′- 30′	and very fine sand		with very fine sand and traces
	: D. W. Lumbert 5/77.	25 - 30	iron concretions and very fine	190′-200′	of lignite Clay, gray, slightly glauconitic,
		30'- 40'	sand Clay, gray, glauconitic		micaceous, with very fine sand T. D.: 200'
0'- 20'	Clay, tan, with layers of red, and very fine sand	40'- 55'	Clay, gray, glauconitic, with very fine sand	Drill Hole	No. 129. Elevation 300'
20'- 30'	Clay, light gray to tan, with very fine sand	55'- 70'	@ 46' siderite	Location:	SE¼, Sec. 17, T. 18 S., R. 21 W.
201 051	@ 25'-30' iron concretions	55 - 70	trace of lignite, and very fine	County, C Logged by	: D. W. Lumbert 5/77.
30'- 35' 35'- 40'	Clay, gray, with very fine sand Clay, green, glauconitic, with		sand @ 60'-70' siderite layers	0'- 10'	Clay, gray, with very fine sand
40'- 55'	very fine sand Clay, gray, slightly glauconitic	70′-110′	Clay, gray, glauconitic, mica-		and iron concretions
	with very fine sand	110′-120′	ceous, with very fine sand Clay, gray to green, with very	10 - 25′	Clay, gray with tan layers, and very fine sand
55'- 75'	Clay, gray, with trace of lignite and very fine sand	120′-130′	fine sand Clay, green, with very fine sand	25'- 75'	Clay, gray, with very fine sand @ 65'-70' trace of lignite
75′- 80′	@ 60'-75' glauconitic		@ 125' siderite	75′- 85′	Clay, gray, with lignite stringers
	Clay, gray, with lignite, and very fine sand	130′-160′	Clay, gray, minor glauconite with very fine sand	85′-115′	and very fine sand Clay, gray, slightly glauconitic
80′-1 0 5′	Clay, gray, slightly glauconitic with very fine sand	160′-170′	@ 140'-150' trace of lignite Clay, gray to brown, with very	115′-120′	with very fine sand Clay, gray, glauconitic, with
105'-120'	Clay, gray, with lignite, and very fine sand	170′-180′	fine sand and traces of lignite		trace of lignite
120′-150′	Sand, very fine, with gray to		Clay, gray, with very fine to fine sand	120′-130′	Clay, gray, glauconitic, with some iron staining, and very
	green, glauconitic clay @ 120'-130' lignite stringers	180′-200′	Clay, gray, with interbedded very fine sand	130′-150′	fine sand Sand, very fine, with thin
150′-160′	Clay, gray, glauconitic, with traces of lignite and very fine		T. D.: 200'		interbedded gray clay, and trace of lignite
160′-190′	sand		No. 127. Elevation 280'	150′-160′	Clay, gray, with sand and
100 -190	Sand, very fine, with gray glauconitic clay, and traces of	County, C	SW¼, Sec. 19, T. 18 S., R. 21 W. olumbia	160′-170′	trace of lignite Sand, very fine, with gray,
190′-200′	lignite Clay, gray, glauconitic, with	Logged by	: D. W. Lumbert 5/77.		slightly micaceous clay, and trace of lignite
	very fine sand @ 191' siderite	0'- 35' 35'- 50'	Sand, very fine, with red clay	170′-180′	Clay, gray, with very fine sand
	T. D.: 200'		Clay, red to tan, with very fine sand	180′-190′ 190′-200′	Clay, gray, with silt Sand, very fine, with gray clay
		50'- 60'	Clay, tan, with fine to very fine sand		T. D.: 200'
Drill Hole	No. 125. Elevation 288'	60′-100′	Clay, gray, with very fine sand		No. 130. Elevation 235'
Location:	SE¼, Sec. 26, T. 18 S., R. 22 W.		@ 75'-80' trace of lignite @ 80'-100' glauconite	County, C	NE¼, Sec. 29, T. 18 S., R. 21 W. olumbia
County, County	olumbia : D. W. Lumbert 5/77.	100′-115′	Clay, gray to brown, with very fine sand	Logged by	: D. W. Lumbert 5/77.
0'- 10'	Clay, red, with sand	115′-150′	Clay, gray, glauconitic, with	0'- 10'	Sand, very fine, with red clay
10'- 20'	Clay, light gray, with iron con-		very fine sand @ 120' decrease of glauconite;	10'- 20'	Clay, gray and red interlayered, and very fine sand
20'- 30'	cretions and very fine sand Clay, tan, with very fine sand	150′-165′	trace of lignite Clay, gray, glauconitic, with	20'- 25' 25'- 30'	Clay, tan, with very fine sand
30'- 45'	@ 25'-30' iron concretions		thin beds of siderite and very		Clay, light gray to tan, with very fine sand
	Clay, light tan, with very fine sand	165′-200′	fine sand Sand, very fine, with inter-	30'- 45' 45'- 50'	Clay, gray, with very fine sand Clay, dark gray, with very fine
45′- 5 0 ′ 50′- 65′	Clay, gray, with very fine sand Clay, gray, slightly glauconitic.		bedded clay and layers of siderite	50'- 75 '	sand Clay, gray, slightly glauconitic
65'- 75'	with very fine sand Clay, gray, slightly glauconitic,		T. D.: 200'		with very fine sand
	with traces of lignite	Drill Hole	No. 128. Elevation 280'	75'- 90'	Sand, very fine, with gray clay and stringers of lignite
75′-100′	Sand, very fine, with gray, glauconitic clay and interbedded	Location: County, C	NE¼, Sec. 19, T. 18 S., R. 21 W.	90′-110′	Clay, gray to dark gray, with
100'-105'	siderite and trace of lignite Clay, gray, with very fine sand		: D. W. Lumbert 5/77.	110′-125′	very fine sand Clay, gray, with silt and trace
105'-110'	Sand, very fine, with traces of	0'- 15'	Sand, fine, with red clay	125′-130′	of lignite Sand, very fine, glauconitic,
110′-130′	lignite and gray clay Sand, very fine, with gray clay	15'- 25'	Clay, tan to light tan, with very fine sand and iron concre-	130′-140′	with interbedded siderite
130′-185′	Clay, gray, glauconitic, with very fine sand	25'- 50'	tions		Clay, gray, glauconitic, mica- ceous, with trace of lignite
185′-200′	@ 145' increase in sand		Clay, light gray to gray, with very fine sand	140′-150′	Clay, gray, micaceous, with very fine sand
100 -200	Clay, gray, glauconitic, with interbedded very fine sand	50'- 70'	Clay, gray, with very fine sand and silt	150'-155'	Sand, very fine, with gray clay and traces of lignite
	T. D.: 200′	70'- 80'	Sand, fine, with lignite	155'-165'	Clay, gray, with very fine sand

165′-180′	Sand, very fine, with gray,	Deill Hala	No. 122 Flancis 000		
,,,,,	glauconitic clay and traces of lignite	Location: County, C	No. 133. Elevation 300' NW¼, Sec. 8, T. 19 S., R. 21 W.	90′-100′	interlayered, and very fine sand
180′-195′	Clay, gray to dark gray, mica- ceous, with silt		7: D. W. Lumbert 5/77.	100′-120′ 120′-135′	fine sand
195′-200′	Silt, with gray clay T. D.: 200'	0'- 30'	Sand, fine, with interbedded		micaceous sand
		30'- 50'		135′-160′	@ 135'-140' traces of lignite
Drill Hole	No. 131. Elevation 230'	50′-100′	The second secon	160'-180'	@ 150'-160' glauconite Sand, very fine, with gray
County, C	- 141 i	100'-110'	very fine sand Sand, very fine with green clay		glauconitic clay @ 170'-180' traces of lignite
	/: D. W. Lumbert 5/77.	110′-120′	and interbedded siderite	180′-200′	Silt, with gray to green clay
0'- 18' 18'- 20'	Sand, fine Clay, gray to tan, and very fine sand	120′-160′			@ 192' siderite T. D. 200 '
20'- 45'	Clay, light gray, with very fine sand	400/4-0/	@ 150'-160' siderite layers	Drill Hole	No. 136. Elevation 315'
45'- 50'	Clay, light gray to tan, with	160′-170′	Sand, very fine, with brown clay and trace of lignite	Location: County, C	SW14, Sec. 20, T. 19 S., R. 21 W.
50′- 65′	iron stain Clay, light gray, with very fine sand	170′-180′	Clay, gray and brown inter- layered, and very fine sand and	Logged by	/: D. W. Lumbert 5/77.
65′- 70′	@ 60'-65' trace of lignite Sand, very fine, with tan to red	180′-200′	traces of lignite Clay, brown, with traces of lignite	0'- 10' 10'- 25'	
70′-100′	clay Clay, gray, glauconitic, with		@ 190'-200' very fine sand T. D.: 200'	25′- 50′	@ 15'-20' minor tan clay layers
	trace of lignite and very fine sand	Duill Hala		50'- 55'	Sand, fine, with light tan clay
100′-110′	@ 85'-95' increase in sand	Location:	No. 134. Elevation 300' NW¼, Sec. 17, T. 19 \$., R. 21 W.	55′-100′	Clay, gray to dark gray, with very fine sand
110′-120′	and trace of lignite	County, C	olumbia v: D. W. Lumbert 5/77.		@ 80'-85' trace of lignite @ 85'-100' thin stringers of lig-
120′-130′	and trace of lignite Clay, gray to brown, micaceous	0'- 90'		100′-115′	nite Clay, gray, slightly glauconitic.
130′-140′	with very fine sand		with light gray clay © 50'-60' minor layers of tan	115′-130′	micaceous, with very fine sand Clay, gray, glauconitic, with
100 - 140	green, very glauconitic, mica-		clay @ 60'-85' traces of lignite		very fine sand and trace of lignite
140′-150′	ceous with very fine sand Clay, gray to dark gray, with	90′-100′	Clay, chocolate brown, with very fine sand and lignitic	130′-135′	Clay, gray to green, very
150′-180′	silt and trace of lignite Sand, very fine, interbedded	100′-105′	material	135'-160'	glauconitic with very fine sand Clay, gray, with very fine sand
100/ 100/	with glauconitic clay and layers of siderite		with stringers of lignite and very fine sand	160′-200′	Sand, very fine, with green to gray clay
180′-190′	Sand, very fine, with gray glauconitic clay and trace of	105′-110′ 110′-140′	Clay, gray, with very fine sand Clay, gray, slightly glauconitic,		@ 180'-190' traces of lignite T. D.: 200'
190′-200′	lignite Clay, gray, with silt	140′-160′	micaceous, with very fine sand	D.: 11 . 1 . 1	B1 489
	@ 190' siderite T. D.: 200'		Sand, very fine, with gray clay and traces of lignite	Location:	No. 137. Elevation 250' SE½, Sec. 30, T. 19 S., R. 21 W.
		160′-180′	Sand, very fine, with inter- bedded gray, glauconitic clay	County, C	olumbia : D. W. Lumbert 5/77.
Drill Hole	No. 132. Elevation 225'	180'-200'	and traces of lignite Clay, gray, with lignite stringers	0'- 10'	
County, C			and very fine sand T. D.: 200'	10'- 20'	Clay, light brown, with very
Logged by	: D. W. Lumbert 5/77.	Daill Hala		20'- 30'	fine sand Clay, dark gray, with very fine
0'- 15'	Clay, light gray to light brown,	Location:	No. 135. Elevation 290' SW¼, Sec. 17, T. 19 S., R. 21 W.	30'- 45'	sand Clay, greenish gray, with very
15'- 35'	with fine to medium sand Sand, coarse, grading to pea	County, Co	olumbia : D. W. Lumbert 5/77.	45′- 60′	fine sand
35'- 40'	gravel Clay, gray, with coarse sand		Clay, light gray to light tan		Clay, dark gray, with very fine sand
40′- 50′	clay, dark gray, with very fine sand	10 - 15'	interlayered, w/very fine sand	60′- 65′	Clay, gray with thin brown layers, and very fine sand
50′- 70′	Sand, fine to medium, green, with interbedded siderite	15'- 20'	Clay, light gray, with silt Clay, light gray, iron stained	65'- 70'	Clay, dark gray, with very fine sand
70'- 80'	@ 55'-60' trace of lignite Clay, green, very glauconitic	20'- 25'	with silt Clay, light gray and brown	70'- 90'	Clay, bluish green, very glau- conitic, with very fine sand
80′-100′	with very fine sand	25'- 35'	Interlayered, and very fine sand Clay, chocolate brown, with	90′-100′	@ 80'-90' siderite layers
55 -100	Clay, dark gray to green, with very fine sand and siderite		very fine sand @ 30'-35' traces of lignite	100′-120′	Clay, dark gray to green, with very fine sand
100'-120'	layers Clay, dark green, micaceous,	35'- 50'	Clay, gray, slightly glauconitic	120'-130'	Silt with dark gray to green clay Clay, gray to green, with silt
	with very fine sand and siderite layers	50'- 65'	with interbedded very fine sand Clay, gray to dark gray, slightly	130′-140′	Clay, gray to green, with inter- bedded very fine sand
120′-130′	Clay, gray to dark gray, with very fine sand	65'- 75'	glauconitic with very fine sand Clay, gray, glauconitic, with	140′-150′	Clay, dark gray to green, with very fine sand
130′-200′	Clay, dark gray to green, with very fine sand		Interbedded siderite and very fine sand	150′-160′	Sand, very fine, with green clay and thin siderite layers
	@ 130'-150' siderite lavers	75'- 85'	Clay, brown and gray inter- bedded, and very fine sand	160′-200′	Sand, very fine, with inter-
	@ 160'-180' siderite layers @ 190'-200' trace of lignite	85'- 90'	Clay, chocolate brown, with		bedded, gray, dark gray, and green, very glauconitic clay and
	T. D.: 200'		traces of lignite and very fine sand		thin siderite layers T. D.: 200'

Drill Hole No. 138. Elevation 240'	Drill Hole No. 141. Eleva	ation 285'		green clay, and traces of lignite
Location: SE¼, Sec. 31, T. 19 S., R. 21 W.	Location: SW¼, Sec. 9,		130′-145′	Clay, gray, glauconitic, with very fine sand
County, Columbia Logged by: D. W. Lumbert 5/77.	County, Columbia Logged by: D. W. Lumb	ert 5/77.	145'-150'	Sand, fine, with gray clay
			150'-170'	Sand, fine, with interbedded
0'- 15' Clay, tan to light gray, with very		ay,w/very fine sand slightly glauconitic	170′-180′	gray clay and traces of lignite Clay, gray, with silt
fine sand	with very fine	e sand	180′-190′	Clay, gray, slightly glauconitic
15'- 20' Clay, gray, with very fine sand 20'- 40' Clay, greenish gray, with slightly		ngers of lignite with thin stringers	190′-200′	with very fine sand Clay, gray, glauconitic, with
glauconitic silt	of lignite a	nd very fine sand		interbedded very fine sand
40'- 50' Clay, bright green, with very fine sand and interbedded	50'-60' Clay, gray to with silt	green, glauconitic		and siderite T. D.: 200'
siderite		glauconitic, with		
50'- 85' Sand, very fine to fine, alternat- ing with gray to green clay	very fine sand @ 65' siderite			No. 144. Elevation 300' NE¼, Sec. 12, T. 19 S., R. 21 W.
85'- 90' Clay, green, with siderite layers		green, with traces	County, Co	olumbia
90'-110' Clay, dark gray to green, with very fine sand		nd very fine sand green to gray, with	Logged by:	D. W. Lumbert 5/77.
110'-140' Clay, dark gray to green, glau-	very fine sand	d	0'- 10'	
conitic, with very fine sand @ 120'-140' decreasing glauco-	@ 85'-90' tra 90'-120' Clay, gray t	ces of lignite o green, with very	10'- 20'	with very fine sand Clay, light gray, with very fine
nite	fine sand			sand
140'-160' Clay, dark gray to gray, with very fine sand	120'-130' Clay, gray wi 130'-135' Clay, gray,	th silt with very fine	20'- 30'	Clay, light brown, with very fine sand
@ 150'-160' increasing glauco-	glauconitic sa	and	30'- 40'	Clay, bluish gray, with very
nite and trace of lignite 160'-170' Silt, with gray to green clay		ne, with green clay reen to gray clay	40'- 65'	fine sand Clay, gray, slightly glauconitic
170'-180' Clay, dark gray to green, with	170'-190' Clay, gray to	green, with inter-		with very fine sand
very fine sand 180'-200' Clay, gray, glauconitic, with silt	bedded very 190'-200' Clay, gray, w		65'- 75'	Clay, gray to brown, with very fine sand
@ 190'-200' increasing silt	T. D.: 200'	Terr sire	75'- 90'	Clay, gray to dark green, with
T. D.: 200'	Drill Hole No. 142. Elev	ation 280'		very fine slightly micaceous sand
	Location: NE¼, Sec. 10		90′-100′	Clay, brown, with very fine sand
Drill Hole No. 139. Elevation 238'	County, Columbia Logged by: D. W. Lumb	ert 5/77.	100′-140′	Clay, gray, glauconitic, mica- ceous, with very fine sand
Location: SE¼, Sec. 6, T. 20 S., R. 21 W.			140′-150′	Clay, bluish gray, with very fine
County, Columbia Logged by: D. W. Lumbert 5/77.		with minor tan clay rown, with traces of	150'-170'	sand Clay, gray to bright green, with
	lignite and ve	ery fine sand		very fine sand
0'- 15' Clay, red to tan, with sand 15'- 20' Sand, with siderite layers		vith traces of lignite vith lignite stringers	170′-190′	@ 160'-170' siderite layers Sand, fine, with green clay
20'- 35' Clay, gray, with very fine sand		with very fine sand		@ 180'-190' siderite layers
35'- 40' Clay, black, micaceous, with very fine sand	and stringers 55'- 60' Sand, fine,	of lignite with interbedded	190′-200′	Clay, bright green, with inter- bedded very fine sand and
40'- 60' Clay, gray, glauconitic, with	brown clay a	and traces of lignite		siderite
very fine sand @ 55'-60' siderite layers		with stringers of very fine sand		T. D.: 200'
60'- 80' Clay, dark gray to green, with	65'- 85' Clay, gray, v	with very fine sand	Drill Hole	No. 145. Elevation 290'
very fine micaceous sand 80'- 85' Siderite		ine, with gray clay		SE¼, Sec. 8, T. 19 S., R. 20 W.
T. D.: 85'	and trace of	vith very fine sand lignite	County, Co Logged by	: D. W. Lumbert 5/77.
	100'-115' Clay, gray, w 115'-120' Sand, very f		0′ 15′	Class limbs breasen suish some
Drill Hole No. 140. Elevation 310'	and trace of	ine, with gray clay lignite	0'- 15'	Clay, light brown, with very fine sand
Location: SW¼, Sec. 9, T. 18 S., R. 21 W.		with interbedded	15'- 20'	Lignite
County, Columbia Logged by: D. W. Lumbert 5/77.	very fine san 150'-180' Sand, fine	a to very fine, with	20'- 35'	Clay, light to chocolate brown, with very fine sand
0'- 10' Clay, light gray to tan, with		gray clay and traces	35'- 50'	Clay, dark gray to gray, with
very fine sand		slightly glauconitic		very fine sand @ 35'-40' trace of lignite
10'- 30' Clay, light gray to light brown, with very fine sand	with very fin T. D.: 200'		50'- 65'	Clay, dark gray and dark brown interbedded, and very fine sand
30'-105' Clay, light gray and tan inter-			65′-100′	Clay, gray, glauconitic, with
layered, and very fine to fine sand	Drill Hole No. 143. Elev Location: NE¼, Sec. 11			very fine sand @ 70'-80' siderite layers
@ 70'-90' trace of lignite	County, Columbia		100'-130'	Clay, gray to green, with very
@ 90'-100' trace of lignite and siderite	Logged by: D. W. Lumb	ert 5/77.	130′-140′	fine micaceous sand Sand, very fine, with gray clay
105'-110' Silt, with gray, glauconitic,		gray to tan, iron		and minor siderite
micaceous clay 110'-120' Sand, very fine, with interbed-		h very fine sand to light gray, with	140′-160′	Clay, gray to greenish gray, with very fine sand
ded gray, glauconitic clay	very fine san	d	160'-170'	Sand, very fine, with green
120'-150' Clay, gray, with very fine sand @ 145'-150' traces of lignite	@ 40′-50′ mi @ 50′-65′ mi	caceous nor glauconite	170′-190′	glauconitic clay Silt, with green glauconitic clay
150'-165' Clay, gray, slightly glauconitic	@ 65'-70' sid	erite layers		and minor siderite
with very fine sand @ 162' siderite		dark gray to green, ne micaceous sand	190′-200′	Clay, green, with silt Core interval 12'-20'
165'-170' Silt, with gray, glauconitic clay	80'-100' Clay, gray	to light gray, with		Recovered: Lost:
170'-200' Clay, gray, glauconitic, with interbedded very fine sand	very fine mid 100'-120' Clay, dark	aceous sand gray, micaceous,		0' 8' 12'-20' no lignite recovered;
@ 170'-180' traces of lignite	glauconitic,	with very fine sand		apparently from 12"-18" thick
T. D.: 200'	120'-130' Sand, very fi	ne to fine,w/gray to		T. D. : 200'

Location:	No. 146. Elevation 300' NE¼, Sec. 17, T. 19 S., R. 20 W.		Core interval 27'-30' Recovered: Lost:	106′-116′	Clay, gray, with silt and fine sand
County, C Logged by	Columbia v: D. W. Lumbert 5/77.		3' 0' 27'-28' lignite, silty	116 -120′	@ 116' siderite Clay, gray, with silt and very
0'- 10'	,,		28'-29'1'' lignite, hard 29'1''-30' silt, with few lignite	120'-126'	fine sand
10'- 15'			stringers T. D.: 200'	126′-140′	micaceous, with fine gray sand Clay, gray, with silt and fine
15'- 17'	, and a second	Drill Hole	No. Special 1. Elevation 315'		sand @ 130'-140' trace of lignite
17'- 25'	brown, with very fine sand Lignite, with chocolate brown	County, C		140′-144′ 144′-147′	Clay, gray, with silt Clay, brown
25'- 30'	clay and very fine sand Clay, gray, with traces of lignite and very fine sand		: J. M. Howard 5/77.	147′-150′	Silt, gray, with fine sand T. D.: 150'
30'- 50'	Clay, gray to green, with very fine sand	0′- 6′ 6′- 17′	silt	Drill Hole	No. Special 3. Elevation 315'
50′- 75′		17'- 27'	Sand, very fine, with gray silt and minor gray clay layers Sand, very fine, with silt and	County, C	
	very fine sand @ 75' siderite		light brownish gray clay Clay, brown	0'- 6'	: J. M. Howard 5/77.
75'- 90'	very fine sand		'Clay, gray, with silt and fine	6'- 16'	Silt, mottled, with clay and fine sand Sand, fine, tan, with silt
90′-120′	fine sand	45½-47′ 47′- 48½	Lignite 'Clay, dark brown	16'- 23'	Clay, light brown, with trace of lignite
120′-145′	very fine, slightly glauconitic	48½-51′	Clay, gray, with silt and fine sand	23'- 25' 25'- 28'	Clay, gray Clay, brown
145′-150′		51'- 58' 58'- 60'	Clay, dark brown, lignitic Clay, gray and light brown	28'- 30' 30'- 34'	Lignite Lignite, with thin interbeds of
150′-170′ 170′-190′	Clay, gray, with very fine sand @ 160'-170' micaceous	60'- 64'	interlayered Clay, brown, lignitic	34'- 40'	dark brown clay Sand, fine, tan, with silt and
190′-200′	Sand, very fine, with gray clay Silt, with gray clay Core interval 20'-28'	64'- 68' 68'- 88'	Sand, tan, very fine, lignitic Clay, brown, lignitic, with	40'- 49'	clay Sand, fine, gray, with silt
	Recovered: Lost:	88′-100′	very fine sand Clay, brown, with slightly glauconitic fine sand	49'- 66'	Clay, gray, with very fine sand and silt
	20'-20'5'' lignite with clay 20'5''-21'4'' lignite, soft	100'-112' 112'-125'	Sand, tan, fine, with silt Clay, gray, with fine sand and	66'- 68'	@ 60'-65' traces of lignite Sand, fine, gray, with trace of lignite
	21'4"-22'4" lignite, hard 22'4"-23' lignite, very argillac-	125′-129′	glauconite and trace of lignite Sand, fine, glauconitic, with	68'- 83'	Clay, gray, with silt and very fine sand
	eous 23'-27' silt, brown, lignitic,		greenish gray clay and trace of lignite		@ 80'-83' trace of glauconite @ 83' siderite
	with sand and clay 27'-28' sand, very fine, glauco- nitic, gray to green	129′-148′	Clay, gray, with very fine sand and glauconite	83′- 90′	Clay, gray, with fine sand and glauconite
	T. D.: 200'		@ 148' siderite T. D.: 148'	90′-100′	Clay, brown, with silt and fine sand
**		Drill Hole	No. Special 2. Elevation 302'	100′-105′ 105′-110′	Silt, brown, with very fine sand Clay, gray, with silt and very
Drill Hole Location:	No. 147. Elevation 290' SW¼, Sec. 17, T. 19 S., R. 20 W.	Location: County, Co	NE¼, Sec. 10, T. 19 S., R. 20 W.	110′-120′	fine sand Silt, gray, with very fine sand
County, C	olumbia : D. W. Lumbert 5/77.		J. M. Howard 5/77.	120′-137′	and clay Clay, gray, with silt @ 137' siderite
0'- 10'		0'- 5'	Sand, very fine, with mottled silt	137′-143′	Sand, very fine, gray with silt
10'- 20'	with very fine sand Clay, light gray, with very fine	5'- 9' 9'- 14 '	Clay, tan, with very fine sand Clay, light brown, with fine	143′-147′	Clay, gray, with silt and very
20'- 25' 25'- 30'	sand Clay, brown, with very fine sand Lignite	144 404	@ 12'-14' trace of lignite in clay		@ 147' siderite Core interval 27'-35'5"
30'- 40'	Clay, gray, slightly glauconitic, with very fine sand	14'- 16' 16'- 19'	Sand, fine to very fine, tan, with silt and trace of lignite		Recovered: Lost: 8'5" 0'
40'- 50'	Clay, gray to brown, with very fine sand		Clay, gray, lignitic, with very fine sand Sand, fine, tan, with trace of		27'-28' clay, dark brown to chocolate brown, micaceous,
50′- 70′	Clay, gray, slightly glauconitic with very fine sand	22½′-34′	lignite Clay, gray, with silt		lignitic, with very fine sand 28'-30' lignite, friable 30'-30'8'' lignite, hard, very
70'- 80'	@ 66' siderite Clay, gray to brown, slightly	34'- 36'	Clay, dark brown @ 35'-35½' lignite		compact 30'8''-35'5" lignite, hard, slight-
80′-110′	glauconitic, with very fine sand and siderite layers	36'- 45' 45'- 48'	Clay, dark brown, lignitic Clay, dark brown, with very		ly friable T. D.: 147'
110′-140′	Clay, gray to green to brown, with very fine sand Clay, gray, with very fine sand	48'- 50'	fine sand and trace of lignite Sand, fine, gray, with brown	Drill Hole I	No. Atlanta 1. Elevation 310'
140′-150′	@ 110'-120' micaceous Sand, very fine, with gray slight-	50'- 77'	clay Sand, fine, gray, with few	Location: County, Co	SE¼, Sec. 9, T. 19 S., R. 19 W.
150′-170′	ly glauconitic clay Silt, with gray, slightly glauco-	77'- 85'	lignitic silt and clay stringers @ 74' lignite stringer Clay, gray, with silt		G. L. Delavan 6/77.
170′-180′	nitic clay Clay, gray, slightly glauconitic	85'- 881/2'	Clay, gray, with sand and trace of lignite	0′- 10′ 10′- 15′	Sand, fine to very fine, with brown to light brown clay
180′-190′	with silt Silt, with interbedded gray clay	88½′-89′ 89′-1 0 6′	Siderite Silt, gray, with very fine mica-	15′- 20′	Clay, light tan to brown, with very fine sand
190′-200′	Clay, gray, with interbedded very fine sand		ceous sand @ 100'-106' trace of lignite	.5 - 20	Clay, light tan to brown, with red clay and iron stained very fine sand
			-		

20'- 30'	Clay, gray, with very fine sand and trace of carbonaceous mat-	40'- 45' 45'- 50'	Lignite	10'- 15' 15'- 50'	Gravel
30'- 35'	erial, silt, mica Clay, brown to gray, with very	50'- 55'	Clay, chocolate brown, with lignite and very fine sand Sand, very fine, with clay,	50'- 75'	Clay, gray, with very fine sand Clay, gray, slightly glauconitic with very fine sand
	fine sand, silt, mica and inter- bedded sand	55'- 70'	brown Clay, gray, slightly glauconitic,	75′- 90′ 90′-110′	Sand, very fine, silt, w/clay, gray Clay, gray, with very fine sand
35'- 40'	Clay, gray to brown, with very fine to fine sand, mica	70'- 80'	with very fine sand Clay, gray, carbonaceous, with	110′-180′	@ 100'-110' trace of lignite Clay, gray with carbonaceous
40'- 55'	Clay, gray, with interbedded sand, very fine, silt, mica		trace of lignite and very fine sand		layers and very fine sand @ 120'-180' trace of lignite
55'- 58'	Clay, gray, with lignite stringer and interbedded sand	80′-100′	Clay, gray to brown layers, with very fine sand	180′-190′	Clay, gray, micaceous, with very fine sand
58'- 60 '	Clay, gray, with very fine sand, silt, mica and trace of lignite	100′-120′	Clay, gray to green, with very fine sand interbedded	190'-200'	Clay, gray to brown, micaceous with very fine sand
60'- 70'	Sand, very fine to fine, hard packed, with clay, gray, silt	120′-165′	@ 115'-120' siderite Clay, gray, slightly glauconitic,		T. D.: 200'
70′- 77′	and mica Clay, gray, with interbedded	405/470/	micaceous, with very fine sand @150'-165' interbedded siderite		No. 151. Elevation 320'
77'- 80'	sand and lignite Lignite	165′-170′ 170′-175′	Sand, very fine , clay, gray Clay, gray, with very fine sand		NE¼, Sec. 8, T. 19 S., R. 20 W.
80'- 83' 83'-100'	Lignite, with sand and clay Sand, very fine, with trace of	175′-180′ 180′-200′	Sand, very fine, with clay, gray Silt, with interbedded clay,	County, Co Logged by	D. W. Lumbert 5/77.
100'-108'	lignite Sand, very fine, with silt	100 -200	gray, slightly glauconitic Core interval 37'-45'	0'- 10'	Clay, gray to tan, with very fine
108'-130'	Clay, brown, with very fine sand, silt and mica		Recovered: Lost: 2'7'' 5'5"	10'- 20'	to fine sand Clay, light gray, interbedded
130' 135'	Clay, brown, with some very fine sand and lignite stringers		30" lignite recovered, possibly from more than one bed separa-	201 201	with clay, chocolate brown, and very fine sand
135′-140′ 140′-150′	Clay, brown, with very fine sand Clay, dark brown, lignitic, with		ted by sand. Core showed no	20′- 30′	Clay, gray, with layers of brown, and very fine sand
	very fine sand and lignite stringers		interbedded sand, but driller thought sand may have washed.	30′- 70′	Clay, gray, with very fine sand
	Core interval 76'-86' Recovered: Lost:		1" sand at base of core barrel T. D.: 200"		@ 50'-60' micaceous @ 60'-70' minor glauconite
	5' 5' 76'-80'2" lignite, fairly hard,	Drill Hole	No. 149. Elevation 270'	70'- 80' 80'- 90'	Clay, gray, with silt Clay, gray, slightly glauconitic
	compact and friable, some con-	County, Co	SE¼, Sec. 19, T. 19 S., R. 20 W.	00′ 100′	with very fine sand
	choidal fracture, usually no		D. W. Lumbert 5/77.	90′-100′ 100′-150′	Clay, greenish gray, with silt Clay, gray, with very fine sand,
	visible sign between hard and softer portions, although top	0′ 10′	Class Pate		slightly glauconitic, and silt
	portion is more compact	0 - 10	Clay, light gray to tan, with very fine sand		interbedded with clay, gray to green
	80'2''-81' sand, very fine to	10'- 25'	Clay, chocolate brown, with		@ 120'-125' minor glauconite
	fine, with slightly micaceous brown clay	25'- 30'	very fine sand	150′-190′	Clay, gray, slightly glauconitic,
	81'-86' washed out drilled-like		Silt, with clay, brown, and trace of lignite		w/very fine sand, micaceous, and silt, interbedded with gray clay
	sand T. D.: 150'	30′- 35′	Clay, brown, with very fine sand	190′-200′	Clay, gray, with interbedded silt and siderite
Drill Hole I	No. Atlanta 2. Elevation 290'	35'- 40' 40'- 50'	Silt, with minor clay, brown		T. D.: 200'
Location:	SE¼, Sec. 9, T. 19 S., R. 19 W.	40 - 50	Sand, fine to very fine, with lignite	Drill Hole	No. 152. Elevation 290'
County, Co	0	50'- 60'	Sand, fine	Location:	NE¼, Sec. 11, T. 19 S., R. 20 W.
0'- 10'		60′- 70′	Sand, fine, with stringers of lignite	County, Co	olumbia D. W. Lumbert 5/77.
	very fine sand	70′- 80′ 80′-100′	Sand, very fine, with silt Clay, gray to brown, with very	0'- 10'	Sand, fine, with clay, light gray
10'- 20'	Clay, tan to white, with very fine sand, silt and mica	100'-115'	fine sand Clay, gray, slightly glauconitic	10'- 20'	to white Clay, brown, with fine sand
20′- 30′	Sand, fine, with clay, light tan to brown	115′-120′	with very fine sand Sand, very fine, with clay, gray,	20'- 30'	Clay, gray to brown, with very fine sand
30'- 40'	Sand, fine, with interbedded clay, light tan, and iron con-	120′-130′	and trace of lignite	30'- 40'	Clay, gray, with very fine sand
40'- 50'	cretions Sand, fine, with clay, chocolate	130′-150′	Clay, gray, with very fine sand Clay, brown to dark brown,	40'- 50'	Clay, slightly glauconitic, with very fine sand
	brown, with iron concretions		with trace of lignite and very fine sand	50'- 70'	@ 48' less than 1' siderite Clay, gray, slightly micaceous
50'- 60'	and trace of lignite Sand, fine, with clay, light gray,	150′-160′	Clay, light brown, with sand, very fine	70'- 90'	with very fine sand Clay, gray, glauconitic, with
60′- 70′	and iron concretions Sand, fine, with clay binder,	160′-170′ 170′-180′	Clay, gray, with very fine sand Clay, layered gray to brown,	90′- 120′	very fine sand
70'- 75'	gray, and trace of lignite Sand, fine, trace of lignite		with traces of lignite and very fine sand	30 120	Clay, gray, slightly glauconitic with very fine sand
	T. D.: 75′	180′-190′ 190′-200′	Clay, brown, w/very fine sand Clay, brown, with interbedded	120′-140′	@ 100'-120' minor glauconite Clay, gray with brown layers
Drill Hole N	lo. 148. Elevation 293'		sand, very fine, and trace of	140'-155'	@ 128' less than 1' siderite Clay, gray, with very fine sand
Location: N	NW¼, Sec. 20, T. 19 S., R. 20 W.		lignite and sand T. D.: 200'	155′-160′	Silt, with very fine sand and gray clay
County, Co Logged by:	lumbia D. W. Lumbert 5/77.	Drill Hole	No. 150. Elevation 280'	160′-165′	Clay, gray, with very fine sand
		Location:	NE¼, Sec. 30, T. 19 S., R. 20 W.	165′-170′ 170′-200′	Silt, with clay, gray, micaceous Clay, gray, with silt and very
	Clay, light gray to tan, with very fine sand	County, Co	olumbia D. W. Lumbert 5/77.		fine sand
20'- 30' 30'- 40'	Clay, gray, with very fine sand Clay, gray to brown, with very				@ 180'-190' micaceous @ 190'-200' slightly glauconitic
	fine sand	0′- 10′	Sand, fine, with clay, white to light gray		and trace of siderite T. D.: 200'

	No. 153. Elevation 323'	Drill Hole	No. 156. Elevation 350'		brown, and trace of lignite
County, C	SE¼, Sec. 16, T. 19 S., R. 20 W. Columbia	Location: County, C	NE¼, Sec. 14, T. 19 S., R. 20 W.	30'- 35'	Lignite with clay, chocolate
	/: D. W. Lumbert 5/77.	Logged by	: D. W. Lumbert 5/77.	35'- 65'	brown, and very fine sand Clay, gray, with very fine sand @ 50'-65' minor carbonaceous
0'- 10' 10'- 15'	Clay, light gray, with fine sand Clay, bluish gray, with very	0'- 10' 10'- 35'	Clay, light gray to gray, with	65'- 7 0 '	material Clay, gray, with stringers of
	fine sand	35'- 40'	very fine sand Lignite bearing section	70′- 80′	lignite, and very fine sand Clay, gray, with trace of lignite
15'- 20' 20'- 30'	Clay, brown, with very fine sand Clay, light blue to gray, with	40'- 45' 45'- 50'	Clay, brown, w/very fine sand	001 001	and very fine sand
	very fine sand		Clay, brown, carbonaceous, with very fine sand	80′- 90′ 90′-1 00 ′	Clay, gray, with very fine sand Clay, gray to olive green, with
30′-100′	Clay, gray, w/fine sand and silt @ 50'-60' minor green clay	50'- 55'	Clay, chocolate brown, with		very fine sand
	@ 70'-90' minor glauconite	55'- 70'	very fine sand Clay, gray, with very fine sand	100′-110′	Clay, gray, with bright green glauconite and very fine sand
100′-200′	@ 80'-100' trace of lignite Clay, gray, glauconitic, with	70′-100′	Clay, brown, micaceous, with		@ 102' siderite
100 200	very fine sand and silt	100'-110'	very fine sand Lignite, with very fine sand,	110′-120′	Clay, gray, slightly glauconitic with increasing very fine sand
	@ 117' less than 1' siderite @ 130'-140' micaceous sand	110/ 100/	and clay, brown	120′-140′	Clay, gray, glauconitic with
	T. D.: 200'	110′-120′	Sand, very fine, with traces of lignite		interbedded siderite and very fine sand
Drill Hole	No. 154. Elevation 320'	120′-150′	Clay, gray to brown, with inter- bedded very fine sand and trace	140′-150′	Clay, gray, with increasing sand, very fine
Location:	NW¼, Sec. 15, T. 19 S., R. 20 W.	150′-160′	of lignite Sand, very fine, with clay,	150′-170′	Clay, gray, slightly glauconitic with very fine sand
County, C	- 111 ·		gray to brown	170'-180'	Sand, very fine, with clay, gray
Logged Dy	v: D. W. Lumbert 5/77.	160 ' -190'	Clay, gray to brown, with interbedded very fine sand	180′-200′	Clay, gray, sightly micaceous, with very fine sand
0'- 10'	Clay, light gray to white, with	190′-200′	Silt, with clay, brown		Core interval 36'4"- 40'3"
	very fine sand		T. D.: 200'		Recovered: Lost:
10′- 25′	Clay, light gray to gray, with very fine sand		No. 157. Not drilled.		36'4"-40'3" hard lignite, with conchoidal fracture
25'- 3 0'	sand, very fine to fine		No. 158. Elevation 320' SE¼, Sec. 1, T. 19 S., R. 20 W.		47" saved for analysis
30′- 67′	@ 40'-50' trace of lignite	County, Co			T. D.: 200'
67'- 69'	@ 50'-67' fine sand increase Lignite	0'- 10'			No. 160. Elevation 310'
69'-100'	Clay, gray, carbonaceous, with	10'- 20'	Sand, fine, with clay, white Clay, white, with silt	Location: County, C	NE¼, Sec. 5, T. 19 S., R. 19 W.
100'-130'	very fine sand Clay, gray, slightly glauconitic,	20'- 33' 33'- 40'	Clay, light gray to gray, w/silt		: D. W. Lumbert 5/77.
	micaceous, with very fine sand	40'- 50'	Lignite bearing section Sand, very fine, w/clay, choco-	0'- 10'	Sand, fine, with clay, red
130′-135′	Sand, very fine to fine, with clay, gray	50'- 60'	late brown, and traces of lignite	10'- 20'	Sand, fine to very fine, with
135'-200'	Clay, gray, with very fine sand		Sand, very fine, with clay, gray to brown, and trace of lignite	20'- 30'	clay, white to light gray Sand, fine to very fine, with
	@ 150'-200' minor glauconite @ 170'-180 siderite layers	60′- 70′	Clay, gray, micaceous, with very fine sand		iron stained, white clay
	T. D.: 200'	70'- 80'	Clay, gray w/brown interbedded	30′- 36′	Sand, very fine, with clay, gray and trace of lignite
		80'- 90'	layers, and very fine sand Clay, brown, slightly glauconitic	36'- 40'	Lignite
Drill Hole	No. 155. Elevation 330'	55 55	w/very fine sand and traces of	40'- 50'	Sand, very fine, clay, gray, trace of lignite
County, Co	NE¼, Sec. 15, T. 19 S., R. 20 W. olumbia	90′-120′	siderite	50′- 70′	Clay, gray to brown, with very
Logged by	: D. W. Lumbert 5/77.		Clay, gray to brown, with very fine sand		fine sand @ 60'-70 slightly micaceous
		120′-130′	Clay, gray to brown, with increasing very fine sand	70′- 80′	Clay, bluish gray, with silt,
0'- 60'	Clay, light gray to gray, with very fine sand	130'-140'	Clay, gray, with very fine sand	80'- 90'	micaceous Clay, gray, with very fine sand,
	@ 30'-60' minor mica in sand	140′-150′	Clay, bluish gray, w/very fine sand	90′-100′	slightly micaceous
60'- 70'	Clay, gray, with interbedded brown clay, and very fine sand	150'-190'	Clay, brown, w/very fine sand	90-100	Clay, gray to brown, slightly glauconitic, with very fine sand
70'- 80'	Lignite bearing section	190'-200'	@ 160'-190' minor mica & sand Clay, bluish gray, with very fine	100′-130′	@ 90' - siderite 1'
80'- 85'	Clay, chocolate brown, with very fine sand		sand	100 -130	Clay, bluish gray, with very fine sand
85′- 9 0 ′	Clay, chocolate brown, with		Core interval 27'-32' Recovered: Lost:		@ 120'-130' increased glaucon- ite and siderite layers
	thin stringers of lignite and very fine sand		5' 0'	130'-140'	Clay, bluish gray, with very fine
90'-100'	Clay, gray to brown, with very fine sand		27'-31'6'' friable lignite 31'6''-31'8'' sand, lignitic	140′-150′	sand, slightly micaceous Clay, gray, with interbedded
100'-120'	Clay, gray, with very fine sand		31'8"-32' lignite, sandy 61" total core		very fine sand and siderite
120′-150′	Clay, gray, micaceous, carbonaceous, with very fine sand		59" saved for analysis	150'-170'	layers Clay, gray, with very fine sand,
150′-160′	Silt, with clay, gray, and trace		T. D.: 200'		slightly micaceous @ 160'-170' increasing very fine
160′-180′	of lignite Clay, gray, with very fine sand,	Drill Hole N	lo. 159. Elevation 320'	4801	sand
180′-190′	slightly micaceous	County, Co		170'-200'	Clay, gray, with very fine sand @ 190'-200' slightly micaceous
	Clay, gray and brown interbed- ded, and very fine sand	Logged by:	D. W. Lumbert 5/77.		Core interval 34'-37'10"
190′-200′	Clay, gray, slightly glauconitic.	0'- 10'	Clay, red with sand		Recovered: Lost: 3'10" 0'
	with very fine sand and traces of siderite	10'- 25'	Sand, very fine to fine, with clay, light gray to white		34'-37'10" hard lignite
	T. D. 200'	25'- 30'	Sand, fine, with clay, chocolate		43" saved for analysis T. D.: 200"

Location:	No. 161. Elevation 290' NW¼, Sec. 4, T. 19 S., R. 19 W.		Recovered: 7'10"	Lost. O'	90′-100′	lignite and very fine sand Sand, very fine, with bluish gray
County, Co Logged by	olumbia : D. W. Lumbert 5/77.		42'-47'5" lignite, with conchoidal frac 47'5"-49'10" sand	cture	100′-110′	clay Clay, gray to brown, slightly glauconitic with very fine sand
0'- 10' 10'- 30'	Sand, medium to coarse Clay, light brown, with very fine		gray, micaceous T. D.: 200'	, 11110, 11g.11	110′-125′	Clay, brown, carbonaceous with very fine sand
30'- 40'	sand Clay, chocolate brown, with	Drill Hole I	No. 163. Elevation 2	75′	125′-130′	Sand, very fine, with brown clay and trace of lignite
40'- 50'	very fine sand Sand, very fine, with brown clay	Location: County, Co	NE¼, Sec. 3. T. 19 Jumbia	S., R. 19 W.	130′-140′ 140′-160′	Clay, bluish gray, with silt Clay, brown, with very fine sand
5 0′- 65 ′	and lignite stringers Clay, brown to light brown,		D. W. Lumbert	5/77.	160′-170′	@ 150'-160' slightly micaceous Clay, gray to green, slightly
	with very fine sand and lignite stringers		Clay, light tan to with very fine sand		170′-180′	glauconitic, with very fine sand Clay, brown, slightly micaceous
65'- 75'	Sand, very fine, with brown clay and trace of lignite	10'- 15' 15'- 23'	Clay, light tan, with concretions and ve Clay, gray, with tra	ry fine sand	180′-190′	with very fine sand Sand, very fine, with brown to gray clay
75′- 85′ 85′-100′	Clay, gray, with very fine sand Clay, gray, w/interbedded very fine sand and trace of lignite	23'- 30'	and very fine sand Lignite bearing secti		190′-200′	Clay, gray to brown, with silt T. D.: 200'
100′-120′		30'- 35'	Lignite with brow	wn to gray	Drill Hole !	No. 165. Elevation 240'
	fine sand @ 110'-120' siderite layers	35'- 50'	Clay, gray and blayered, and very	rown inter-		NE¼, Sec. 2, T. 19 S., R. 19 W.
120′-135′	Clay, gray, slightly micaceous with trace of lignite and very	50′ 70′	Clay, gray to bro micaceous, with ve	ry fine sand		D. W. Lumbert 5/77.
135′-140′	,,, s,	70′- 80′	Clay, bluish gray, micaceous very fine	sand	0'- 30'	Clay, gray and red interlayered, and very fine sand
140′-150′	and stringers of lignite Clay, gray, w/ interbedded very fine sand and trace of lignite	80'- 95' 95'-100'	Clay, gray to brow		30'- 50'	@ 25'-27' sand, very fine Clay, gray, slightly carbona- ceous, with very fine sand
150′-165′ 165′-170′	Clay, gray, with very fine sand Sand, very fine, with gray clay	100′-120′	very fine sand Clay, chocolate bro interlayered, and ve		5 0 ′- 80′	Sand, very fine, with gray clay @ 50'-55' lignite stringers
170′-190′		120′-130′	@110'-120' traces o Clay, gray and bro	f lignite	80'- 90'	@ 55'-80' traces of lignite Sand, very fine, with gray clay
190′-200′	Clay, gray, with slightly mica- ceous very fine sand	130′-140′	ered, and very fine s Clay, gray, with ve	sand	90′-190′	Clay, gray, with very fine sand @ 100'-190' slightly micaceous
	Core interval 30'-50' Recovered: Lost:	140′-150′	and trace of lignite Clay, gray, slightly		400/000/	@ 150'-190' trace of lignite @ 180'-190' sand increase
	20' 0' 30'-40' sand, gray, fine 40'-50' sand, gray, fine, lignitic	150′-180′	with minor siderifine sand Clay, gray and b		190′-200′	Clay, chocolate brown, with very fine sand and silt T. D.: 200'
	with silt T. D.: 200'	100 100	layered, and very @ 160'-180' sand in	/ fine sand	Drill Hole I	No. 166. Elevation 250'
	No. 162. Elevation 280'	180′-190′		with brown	Location: County, Co	NW¼, Sec. 1, T. 19 S., R. 19 W.
County, C		190′-200′	Clay, chocolate I very fine sand ar			D. W. Lumbert 5/77.
	Clay, red with white and gray		lignite Core interval 30'-40 Recovered:)′ Lost:	. 0'- 10' 10'- 25'	Sand, fine with tan clay Clay, tan, with very fine to fine sand
10'- 20'	stringers, and very fine sand		10' 30'-35'9'' lignite, ha	0'	25'- 35' 35'- 45'	Sand, very fine, with tan clay Clay, gray, with very fine sand
20'- 30'	with very fine sand Clay, light tan, w/very fine sand		35'9''-36' lignite, l ceous with sand	brown, mica-	45'- 50'	Sand, fine to very fine, with tan clay
30′- 40′	sand and silt		36' 40' clay, gray, tic with sand		50'- 60'	Clay, light tan, with interbedded very fine sand
40'- 43' 43'- 46'	Clay, gray, micaceous, with very fine sand Lignite		72" lignite saved fo T. D.: 200"	r analysis	60'- 80' 80'- 90'	Silt, with light tan clay Silt, with interbedded light tan
46'- 50'	Clay, gray, slightly micaceous with very fine sand		No. 164. Elevation 2 NE¼, Sec. 3, T. 19		90′-100′ 100′-115′	clay Silt, with minor tan clay Silt
50′- 70′	Clay, brown to gray, carbona- ceous with very fine sand	County, C	olumbia : D. W. Lumbert	5/77.	115′-120′ 120′-130′	Silt, with gray clay Clay, gray, with silt
70′- 80′	Clay, brown to gray, slightly micaceous with very fine sand	0'- 10'			130′-140′	Clay, brown, slightly micaceous with very fine sand and silt
80'- 90' 90'-100'	Clay, brown, with very fine sand Clay, brown, with interbed-	10'- 20'	white iron stained of Clay, light tan, wi		Daill Unio	T. D.: 140'
30 -100	ded very fine sand and stringer of lignite	20'- 25'	sand Clay, light tan an layered, and very			No. 167. Elevation 250' SW¼, Sec. 6, T. 19, S. R. 18 W.
100′-120′	Clay, brown, fissile, with very fine sand and stringers of	25'- 30' 30'- 40'	Sand, fine, with tan Clay, tan, with iron	clay		D. W. Lumbert 5/77.
120′-150′	lignite Clay, brown, with very fine	40'- 60'	and very fine sand Clay, tan to light		0'- 10'	Sand, very fine, with gray to red clay
150′-160′	slightly micaceous sand and trace of lignite	604 76:	very fine sand @ 50'-60' trace of li		10′- 30′	Clay, gray, iron stained with very fine sand
160′-200′	Clay, bluish gray, with very fine sand Clay, gray to brown, with very	60'- 70' 70'- 80'	Clay, light tan, wi		30′- 40′	Clay, light gray, with very fine sand
100 -200	fine sand @ 180'-200 slightly micaceous	70°- 80°	Clay, gray, with ve @ 75'-80' thin str nite		40'- 70' 70'-100'	Clay, light gray, with interbed- ded silt Silt
	Core interval 42 -49'10''	80'- 90'	Clay, bluish gray, v	vith traces of	70-100	T. D.: 100'

Drill Hole	No. 168. Elevation 230'		slightly micaceous, with silt	40'- 55'	Clay brown with year fine and
Location: County, C	SE¼, Sec. 7, T. 19 S., R. 18 W.	140'-160'	Clay, glauconitic, green, with	55'- 65'	Clay, gray to brown, slightly
Logged by	/: D. W. Lumbert 5/77.	160'-175'	very fine sand Clay, gray, glauconitic, with interbedded siderite and very	65′- 9 0 ′	micaceous, slightly glauconitic with very fine sand
0′- 10′	Sand, very fine, with gray to red clay	175' 200'	fine sand		ceous, with very fine sand
10'- 20' 20'- 25'	Silt, with light gray clay	175′-200′	Clay, gray, slightly glauconitic, slightly micaceous, with interbedded silt	90′-100′	ceous very fine sand
25'- 60'	sand		T. D.: 200'		Clay, gray to brown, with slight- ly micaceous very fine sand
60′- 80′	@ 50'-60' lignite stringers	Drill No.	171. Elevation 215'	110′-130′	Clay, gray, slightly micaceous with very fine sand
80′- 90′	Sand, very fine, with traces of lignite	County, C		130′-140′	Clay, gray to light gray, slightly micaceous with very fine sand
	Lignite, with interbedded very fine sand	Logged by	: D.W. Lumbert 5/77.	140′-150′ 150′-160′	Clay, gray, with very fine sand
90′-1 00 ′ 100′-1 10 ′	Clay, gray, with very fine sand Clay, gray to brown, with very	0'- 8'	Sand, fine, with tan to light gray clay	160′-200′	minor siderite Silt, with minor gray, slightly
110′-160′	fine sand Clay, gray, slightly glauconitic	8'- 20'	Clay, light gray to tan, with very fine sand	100 200	glauconitic clay
	with very fine sand @ 111' siderite	20'- 60'	Clay, gray, with very fine sand		@ 170'-200' slightly micaceous T. D.: 200'
160' 200'	@ 130'-140' traces of lignite		@ 30'-40' lignitic clay @ 50'-60' slightly micaceous	Drill Hole	No. 174. Elevation 235'
160′-200′	Clay, gray to brown, with very fine sand T. D.: 200'	60′-100′	Clay, gray, slightly glauconitic, slightly micaceous, with very	Location: County, C	NE¼, Sec. 15, T. 18 S., R. 19 W.
5		100′-140′	fine sand and silt Clay, gray to brown, slightly		: D. W. Lumbert 5/77.
Location:	No. 169. Elevation 170' NE¼, Sec. 19, T. 19 S., R. 18 W.		micaceous, with silt	0'- 25'	Clay, gray, with very fine sand
County, C	olumbia	140′-160′	Clay, gray, slightly micaceous with very fine sand	25'- 30'	@ 0'-10' iron concretions
	: D. W. Lumbert 5/77.	160′-170′	Clay, gray to brown, with traces of lignite and very fine sand		tan clay
0′- 10′ 10′- 15′	Sand, fine, with gray clay Clay, gray to brown, with very	170′-180′	Clay, brown, with lignite stringers and very fine sand	30'- 40'	Clay, gray, slightly micaceous with traces of lignite and silt
15'- 30'	fine sand Clay, gray to tan, with very fine	180′-200′	Clay, brown, with interbedded	40'- 50'	Clay, brown, slightly micaceous with very fine sand
30'- 35'	sand Sand, coarse, with gravel		very fine sand and traces of lignite	5 0 ′- 6 0′	Clay, gray, slightly glauconitic, slightly micaceous, with silt
35'- 40' 40'- 75'	Sand, medium		@190'-200' slightly glauconitic T. D.: 200'	60'- 85'	Clay, slightly micaceous, alter- nating gray and brown layers
	Clay, gray, with very fine sand @ 50'-75' slightly micaceous	Drill Hole	No. 172. Elevation 197'	05/ 05/	and silt
75′-100′	Clay, gray to brown, with very fine sand	Location:	NW¼, Sec. 25, T. 18 S., R. 19 W.	85'- 95'	Clay, brown, with interbedded silt
1.00′-115′	Clay, gray, slightly micaceous, slightly glauconitic, with very	County, Co Logged by	olumbia : D. W. Lumbert 5/77.	95′-1 00 ′	Clay, gray, with micaceous very fine sand
115′-135′	fine sand Clay, gray, with interbedded	0'- 10' 10'- 30'	Sand, fine, with tan clay	100′-120′	Clay, gray to brown, slightly micaceous, with very fine sand
135′-140′	fine sand Clay, gray, slightly glauconitic	10 - 30	Sand, fine to coarse, with gray clay	120 -140′	Clay, gray, slightly glauconitic with interbedded silt
	with interbedded glauconite and	30'- 50'	@ 25'-30' pea gravel Clay, gray, slightly micaceous	140′-150′ 150′-170′	Clay, gray to brown, with silt Clay, brown, with very fine sand
140'-145'	minor siderite Clay, gray to brown, with slight-	50'- 60'	with very fine sand Sand, fine, with interbedded	170′-175′	Clay, gray, slightly micaceous
145′-150′	ly micaceous very fine sand Clay, gray, with interbedded	60'- 80'	gray clay	175′-180′	with very fine sand Silt, with interbedded brown,
	very fine sand and trace of lignite	00 00	Clay, gray, slightly micaceous, slightly glauconitic, with very fine sand		© 180' siderite layer
150′-165′	Clay, gray, slightly micaceous with very fine sand	80′-150′	Sand, very fine to fine, with		T. D.: 180'
165′-2 00 ′	Clay, gray, slightly glauconitic		interbedded gray, slightly mica- ceous, slightly glauconitic	Drill Hole I	No. 175. Elevation 240' NW¼, Sec. 10, T. 18 S., R. 19 W.
	with interbedded thin siderite layers		clay @ 100'-150' traces of lignite	County, Co	olumbia
	T. D.: 200'	150′-180′	and thin siderite lavers		G. L. Delavan 5/77.
Drill Hole I	No. 170. Elevation 223' NE¼, Sec. 30, T. 19 S., R. 18 W.		Sand, very fine, with glauconitic clay and siderite	0'- 5'	Clay, light brown to tan, with iron concretions and very fine
County, Co	lumbia	180′-200′	Silt to very fine sand with glauconitic, micaceous clay	E/	sand
Logged by:	D. W. Lumbert 5/77.		and minor thin siderite layers	5′- 5 0 ′	Clay, gray, with silt @ 10'-50' slightly micaceous
0'- 10' 10'- 45'	Sand, fine, with gray to red clay		T. D.: 200'	50'- 65' 65'- 75'	Clay, gray, slightly micaceous Clay, brown
45'- 50'	Silt, with minor tan clay Sand, medium	Drill Hole N	No. 173. Elevation 255'	75'- 80'	Clay, light gray
5 0 ′- 55′	Clay, tan to gray, with very fine sand	Location: S	SE¼, Sec. 22, T. 18 S., R. 19 W	80′-100′ 100′-105′	Clay, gray, with very fine sand Clay, brown, with very fine
55'- 65' 65'- 8 0 '	Clay, gray, with very fine sand Clay, gray, with slightly mica-	County, Co Logged by:	D. W. Lumbert 5/77.	105′-140′	sand Clay, gray to brown, with mica-
	ceous silt Clay, gray, slightly micaceous,	0'- 20'	Clay, light tan, with very fine	140′-145′	ceous very fine sand Sand, very fine, with gray clay
	With very fine sand	20'- 25'	sand Clay, brown, with very fine sand	145 -155'	Clay, gray, with interbedded
	Clay, gray, slightly glauconitic with very fine sand	25'- 30'	Clay, brown to gray with yery	155′-165′	very fine sand Clay, brown, micaceous, with
	@ 90'-100' slightly micaceous @ 105'-110' interbedded siderite	30'- 40'	fine sand and trace of lignite Clay, brown to gray, with inter-	165′-17 0 ′	very fine sand Clay, gray, glauconitic, with
110′-140′	Clay, gray, slightly glauconitic,		bedded very fine sand and trace of lignite		interbedded siderite and very fine sand

170′-180′	Clay, gray to brown, with very fine sand		brown, micaceous, with silt T. D.: 198'	20'- 40'	very fine sand Clay, gray, with very fine sand
180′-185′ 185′-197′	Clay, brown Clay, gray @ 197' siderite layer		No. 178. Elevation 280' NE¼, Sec. 35, T. 17 S., R. 19 W.	40'- 50'	@ 30'-40' slightly micaceous Clay, brown, slightly micaceous, slightly carbonaceous, with
	T. D.: 197'	County, Co		50'- 70 '	interbedded very fine sand Clay, gray, slightly micaceous
	No. 176. Elevation 215'	0′ 20′	Clay light brown to tan with		with very fine sand
County, Co	NE¼, Sec. 3, T. 18 S., R. 19 W. olumbia	0'- 20'	Clay, light brown to tan, with very fine to fine sand	70'- 80'	@ 50'-65' slightly glauconitic Sand, very fine, with slightly
Logged by	: G. L. Delavan 5/77.	20'- 30'	Sand, fine, with trace of light brown lignite		glauconitic clay and traces of lignite
0'- 5'	Clay, brown, with iron con- cretions and fine sand	30'- 35'	Clay, gray, with very fine, slightly micaceous sand	80′-135′	Clay, gray, slightly micaceous with very fine sand
5'- 15'	Clay, light brown to tan, with very fine sand	35'- 40'	Clay, light brown, with iron concretions and trace of lignite		@ 95'-100' minor siderite @ 100'-110' interbedded silt
15'- 35'	@ 10'-15' iron concretions Clay, dark brown, micaceous,	40′- 65′	Clay, brown, slightly micaceous @ 50'-65' very fine sand	135′-170′	Silt, with green, very glauconitic clay, and minor siderite
	with very fine sand @ 25'-30' interbedded siderite	65'- 75'	Clay, with light brown slightly micaceous sand		@ 150'-170' increase in siderite layers
	@ 30'-35' glauconite	75'- 80'	Clay, dark brown, slightly mica-	170′-175′	Clay, brown, with very fine,
35'- 45'	Clay, gray, slightly glauconitic	80'- 85'	ceous with very fine sand	175′-180′	slightly micaceous sand
45'- 50'	with traces of lignite Clay, gray, micaceous, with very	00 - 65	Clay, dark brown, slightly mica- ceous with trace of lignite	175 -180	Clay, brown, with interbedded silt
50'- 55'	fine sand Clay, light gray	85′-100′	Clay, dark brown, slightly mica-	180'-200'	Clay, gray, with interbedded silt @ 180'-190' glauconite
55'- 60 '	Clay, fight gray Clay, gray to brown, micaceous	100′-105 ^{′,}	ceous with very fine sand Clay, gray to brown, with sand		T. D.: 200'
60′- 75′	Clay, gray	105/ 100/	and trace of lignite	D.:!! U.l.	N- 101 Flancisco 050/
75′- 80′ 80′- 85′	Clay, with interbedded fine sand Clay, gray to brown, slightly	105′-120′	Clay, gray to brown, slightly micaceous with very fine sand		No. 181. Elevation 250' NE¼, Sec. 23, T. 17 S., R. 19 W.
85′-100′	micaceous	120′-130′	Sand, with brown clay and trace	County, Co	olumbia
100'-125'	Clay, gray, with very fine sand Clay, gray, slightly micaceous	130′-150′	of lignite Clay, dark brown to gray, slight-	Logged by	: G. L. Delavan 5/77.
	with very fine sand		ly micaceous with trace of lignite	0'- 10'	Clay, light brown to tan
125'-140'	@ 110'-125' increase in sand Sand, very fine, with gray clay	150'-180'	and very fine sand Clay, gray to brown, slightly	10'- 15' 15'- 20'	Clay, gray, with very fine sand Clay, gray to brown, with very
140′-150′	and minor siderite Clay, gray to brown, with very	180′-198′	micaceous, with very fine sand Clay, gray to brown, slightly	20'- 40'	fine sand
	fine sand	100 - 190	micaceous, with sand	40'- 50'	Clay, brown, with very fine sand Clay, gray, slightly micaceous
150′-165′ 165′-190′	Clay, brown, with very fine sand Sand, very fine, with interbedded	D-10-11-1-1	T. D.: 198'	50′- 65′	Clay, brown to gray, slightly micaceous
190'-200'	gray clay Clay, gray, micaceous, with very		No. 179. Elevation 240' NW¼, Sec. 26, T. 17 S., R. 19 W.	65'- 70 '	Clay, gray, with trace of lignite and very fine sand
	fine sand	County, Co	olumbia	70'- 85'	Clay, gray, slightly micaceous
	T. D.: 200'	Logged by:	G. L. Delavan 5/77.	85′-100′	Clay, gray to brown, with very fine sand
	No. 177. Elevation 210'	0'- 15'	Clay, tan to light brown, with silt	100′-105′	Clay, brown, with very fine sand
County, Co	NW¼, Sec. 2, T. 18 S., R. 19 W. olumbia	15'- 25'	Clay, gray to brown, carbona- ceous, with very fine sand	105′-125′ 125′-135′	Clay, gray, with very fine sand Clay, gray, slightly glauconitic,
Logged by	: G. L. Delavan 5/77.	25'- 35'	Clay, gray, slightly micaceous,		slightly micaceous, with silt
0'- 10'	Clay, light brown		with very fine sand @ 30'-35' increase in sand	135′-155′	Sand, fine, with green very glauconitic clay and interbedded
10'- 20'	Clay, light brown to tan, with	35'- 50'	Sand, very fine with gray clay		siderite
20'- 25'	interbedded very fine sand Clay, tan, with iron concretions	50'- 60'	Clay, gray to brown, with very fine sand	155'- 165 '	Clay, gray, slightly glauconitic with very fine sand
25'- 30'	and very fine sand	60'- 65'	Clay, gray, glauconitic, slightly	165′-175 ′	Sand, very fine, with glauconitic
	Clay, light gray, slightly mica- ceous, with very fine sand	65'- 70'	micaceous with very fine sand Sand, with gray clay and trace	175′-180′	clay Clay, brown, slightly micaceous
30'- 45' 45'- 50'	Clay, brown, slightly micaceous	70/ 00/	of lignite		with very fine sand
45 - 50	Clay, brown, carbonaceous, with trace of lignite	70'- 90'	Clay, gray, slightly micaceous with very fine sand	180′-190′	Clay, brown, with interbedded silt
50'- 65'	Clay, gray to brown, slightly micaceous, with very fine sand	90′-110′	Clay, brown, with interbedded silt	19 0 ′-195′	Clay, gray to brown, slightly micaceous
65′- 70′ 70′- 85′	Clay, brown, with trace of lignite Clay, lignitic, with silt	110′-125′	Clay, gray, with very fine sand	195'-200'	Silt and very fine sand, with
85′-1 30 ′	Clay, brown and gray interbedded, and very fine sand	125′-135′	Clay, glauconitic, slightly mica- ceous with very fine sand		gray slightly glauconitic clay and trace of siderite
130′-135′	Clay, gray to brown, slightly	135′-180′	Sand, very fine and silt, gray with slightly glauconitic clay	5	T. D.: 200'
135′-150′	micaceous Sand, fine, with interbedded	180′-185′	and interbedded siderite Clay, gray, slightly micaceous		No. 182. Elevation 270' NE¼, Sec. 24, T. 17 S., R. 19 W.
150′-160′	brown to gray silt Sand, with minor gray clay		with very fine sand	County, Co	olumbia
160'-170'	Clay, gray, glauconitic	185′-190′	Silt, with fine sand and minor siderite layers	Logged by	: G. L. Delavan 5/77.
170′-180′	Clay, gray to brown, with very fine sand	190′-200′	Silt, with interbedded siderite T. D.: 200'	0'- 15' 15'- 25'	Sand, with light brown clay Sand, very fine, with light gray
180′-195′	Clay, gray to brown @ 180'-190' micaceous	Drill Hala			iron stained clay
195′-198′	Clay, gray to brown, with trace		No. 180. Elevation 300' NW¼, Sec. 23, T. 17 S., R. 19 W.	25'- 30' 30'- 35'	Sand, fine, with light gray clay Sand, medium
	of lignite and very fine sand Core interval 70'-72'10"	County, Co		35'- 40'	Sand, fine, with white to tan clay
	Recovered: Lost:		D. W. Lumbert 5/77.	40'- 45' 45'- 70'	Sand, with brown clay Sand, medium to coarse
	2'10'' 0'	0'- 10'	Clay, gray to red, with very	70′-100′	Sand, fine to medium, with
	70'-72' lignite, soft, black		fine sand		elightly algueonitic clay and times
	70'-72' lignite, soft, black 72'-72'10'' lignite, soft, dark	10'- 20'	fine sand Clay, tan to light gray, with		slightly glauconitic clay and trace of lignite

100'-135'	Sand, medium	15'- 20'	,	100′-115′	Clay, gray to brown, with very
135′-150′	Sand, medium to fine, with interbedded gray, slightly glau-	20'- 40'	gray clay Clay, gray, slightly micaceous	115′-120′	fine sand Clay, gray, slightly glauconitic
150′-165′ 165′-170′	Clay, micaceous	40'- 55'	with very fine sand Clay, gray	120′-125′	with very fine sand Sand, very fine, with gray to
170′-185′	Sand, fine, with gray fissile clay Clay, light brown, with very fine	55'- 60'		125′-130′	green clay and trace of lignite Sand, very fine, with lignite
185'-190'	to fine sand Sand, fine	60'- 80'	gray, slightly carbonaceous clay Sand, fine, with silt and trace of	130′-150′	Clay, brown, with very fine sand @ 140'-150' trace of lignite
190′-195′	Clay, brown, slightly micaceous with very fine sand	80'- 85'	lignite Clay, gray, slightly micaceous	150′-1 60 ′	Clay, brown, with lignite string- ers and very fine slightly glauco-
195′-200′	Sand, fine to very fine T. D.: 200'	85'- 95'	with very fine sand Clay, gray to brown, slightly		nitic sand @ 160' siderite layer
Daill Mala	N - 100 -	95′- 100 ′	micaceous with fine sand Clay, gray to brown, micaceous	160′-170′ 170′-180′	Clay, brown, with very fine sand Sand, very fine, with interbed-
Location:	No. 183. Elevation 265' NE¼, Sec. 19, T. 17 S., R. 18 W.	100′-110′	with very fine sand Clay, gray to brown, with trace	180′-200′	ded gray to brown clay Clay, brown, with interbedded
County, C Logged by	olumbia : G. L. Delavan 5/77.	110′-150′	of lignite Clay, brown, slightly micaceous		very fine sand Core interval 70'-80'
0'- 30'	Clay, light brown to tan	150′-165′	with very fine sand and silt Clay, brown, with very fine sand		Recovered: Lost:
30'- 50' 50'- 55'	Clay, gray, with very fine sand Clay, gray to brown	165′-175′	Clay, brown, with very fine slightly micaceous sand		70'-76'10'' clay, dark gray, slightly lignitic
55'- 60 '	Sand, very fine, with brown clay and lignite stringers	175′- 190 ′	Sand, fine to very fine, with brown, slightly micaceous clay		76'10''-80' lignite, hard, black with concholdal fractures
60'- 70' 70'- 80'	Clay, brown Clay, lignitic, with very fine	190′-200′	and interbedded siderite Clay, brown, with very fine sand		T. D.: 200'
80'- 90'	slightly micaceous sand Sand, very fine, with lignitic		@ 195'-200' slightly micaceous and interbedded siderite	Drill Hole	No. 188. Elevation 350' NE¼, Sec. 36, T. 17 S., R. 18 W.
90′-100′	clay Clay, gray, with very fine sand		T. D.: 200'	County, U	
100'-120'	and trace of lignite Clay, gray, with trace of lignite		No. 186. Elevation 280' NW¼, Sec. 27, T. 17 S., R. 18 W.	0'- 10'	Sand, fine, with red clay
120′-130′	Clay, gray, with very fine sand @ 125'-130' trace of lignite	County, U		10'- 20'	Sand, fine, with light tan
130′-135′	Silt, with very fine sand and gray clay		Clay, tan to red, with very fine	20'- 30' 30'- 40'	Sand, fine Lignite, with chocolate brown
135′-140′ 140′-155′	Clay, brown, with very fine sand Clay, gray to brown, micaceous	10'- 20'	sand Clay, light gray, with interbed-	40'- 50'	clay and very fine sand
155′-180′	Silt, with glauconitic clay and interbedded siderite	20'- 25'	ded very fine sand Clay, chocolate brown, with	50'- 90'	Clay, gray to brown, with very fine sand Clay, gray, with very fine sand
180′-200′	Clay, gray to brown, with very fine sand	25'- 30'	very fine sand Clay, gray, with very fine sand	30 - 30	@ 70'-80' slightly micaceous and trace of lignite
	T. D.: 200'	30'- 40'	Clay, brown, lignitic, with very fine sand	90′-100′	Clay, gray, slightly glauconitic with trace of lignite and very
	No. 184. Elevation 270' NE¼, Sec. 20, T. 17 S., R. 18 W.	40′- 65′	Clay, light gray, with very fine sand	100′-110′	fine sand
County, Co	olumbia : G. L. Delavan 5/77.	65'- 80'	@ 60'-65' slightly carbonaceous Silt, with gray clay	110′-125′	fine sand
0'- 10'		80'- 85' 85'-100'	Silt, with brown clay Silt, with gray clay and traces	125′-130′	Clay, brown, with very fine sand Clay, bluish gray, with very fine
10'- 20'	very fine sand Clay, gray to light brown iron	100′-105′	of lignite Clay, gray to brown, fissile,	130'-150'	sand Clay, gray, with very fine sand
20'- 30'	stained Clay, light brown to brown.	105′-140′	slightly glauconitic Silt, with very fine sand and	150'-155' 155'-160'	Clay, brown, with very fine sand Lignite, with brown clay and
30'- 40'	with very fine sand Clay, gray, slightly glauconitic	100 140	gray, slightly glauconitic clay and interbedded siderite and	160′-180′	very fine sand Clay, brown, with interbedded
40'- 45'	with very fine sand Clay, light tan, with silt	140′-160′	traces of lignite	180′-200′	very fine sand Clay, gray to brown, with inter-
45'- 50'	Clay, light brown, with very fine sand	160′-200′	Silt, with brown clay @ 150'-160' trace of lignite		bedded very fine sand Core interval 28'-32'1''
50'- 60'	Sand, very fine, with light brown clay	100 -200	Silt, with gray to brown clay © 170'-190' traces of lignite		Recovered: Lost:
60'- 65'	Sand, fine to medium, with gray clay		@ 190'-200' lignite stringer less than 1'		28'-32'1" lignite, dark brown to black, soft
65′-110′	Sand, very fine to fine, with traces of lignite	Drill Holo	T. D.: 200'		T. D.: 200'
110′-175′	Clay, gray, slightly carbona- ceous	Location: County, U	No. 187. Elevation 340' SW¼, Sec. 26, T. 17 S., R. 18 W.		No. 189. Elevation 278'
175′-2 00 ′	Silt, with gray, glauconitic clay and interbedded siderite		D. W. Lumbert 5/77.	County, U	
	T. D.: 200'	0'- 10' 10'- 30'	Sand, fine, with red clay		: D. W. Lumbert 6/77.
Drill Hole I	No. 185. Elevation 240'	30'- 35'	Sand, fine, with light tan clay @ 20'-30' carbonaceous	0'- 10' 10'- 30'	Clay, red to tan Clay, light tan, with very fine
Location: County, Ur	SE¼, Sec. 21, T. 17 S., R. 18 W.	35'- 40'	Sand, fine, with tan to red clay Sand, fine to medium, w/lignite	30'- 35'	sand Clay, brown, with very fine sand
	G. L. Delavan 5/77.	40'- 75' 75'- 80'	Clay, light bluish gray, with silt Clay, chocolate brown, with	35′- 70′	Clay, gray, slightly glauconitic, with interbedded very fine sand
0'- 10'	Clay, light brown to tan, with very fine iron stained sand	80'- 90' 90'- 95'	very carbonaceous silt Lignite bearing section	70′-110′	Clay, gray, slightly glauconitic, slightly micaceous, with inter-
10'- 15'	Clay, light gray, with very fine sand		Clay, gray to olive green, with silt	110′-120′	bedded very fine sand Clay, gray, with very fine,
		95′-100′	Clay, blue, with very fine sand		slightly glauconitic sand

120′-140′	Sand, very fine and silt, with interbedded gray, slightly glau-		@ 55'-65' trace of lignite @ 65'-70' slightly micaceous	20'- 35'	Clay, gray, slightly glauconitic, slightly carbonaceous, with very
140′-150′	conitic clay Silt, with minor gray slightly		@ 75'-80' increase in sand @ 150'-160' slightly micaceous	35'- 55'	fine sand Clay, gray to brown, slightly
150′-160′	glauconitic clay Clay, gray, slightly glauconitic,	160′-170′	@ 155'-160' trace of lignite Clay, brown, with fine, slightly	55'- 95'	carbonaceous, w/very fine sand Clay, brown, with very fine
160′-165′ 165′-170′	slightly micaceous, with silt Silt, with gray clay	170′-180′	micaceous sand Clay, brown, with very fine sand	95′-120′	sand and trace of lignite Sand, very fine, with silt and
170′-180′	Clay, gray, slightly glauconitic with very fine sand Clay, gray to brown, with very	180′-200′	@ 175'-180' siderite layers Clay, brown, with fine sand T. D.: 200'	120'-125' 125'-130'	minor lignitic clay Clay, brown, with very fine sand Clay, chocolate brown, lignitic
180′-200′	fine sand Clay, gray, with very fine sand	Drill Hole	No. 193. Elevation 225'	130′-190′	with very fine sand Clay, brown, slightly micaceous
100 200	T. D.: 200'		SE¼, Sec. 26, T. 17 S., R. 17 W.	100 100	with very fine sand @ 175'-190' trace of lignite
	No. 190. Elevation 263'		: G. L. Delavan 5/77.	190′-195′	Silt, brown, with very fine
County, U	SW¼, Sec. 29, T. 17 S., R. 17 W. nion	0'- 15'	Clay, light brown to tan, with	195′-200′	lignitic sand Clay, brown, with very fine
	: G. L. Delavan 5/77.	15'- 20'	very fine sand Clay, tan, slightly micaceous,		sand and trace of lignite T. D.: 200'
0'- 10'	Clay, light brown to tan, slightly micaceous, with very fine sand	20'- 30'	with very fine sand Clay, light brown, with very	Drill Hole	No. 196. Elevation 180'
10'- 25'	and silt Clay, light brown	30'- 40'	fine to fine sand Clay, rust brown, with very	Location: County, U	SE¼, Sec. 27, T. 17 S., R. 16 W.,
25'- 70'	Clay, gray, with very fine sand @ 60'-70' interbedded sand	40'- 60'	fine to fine sand Sand, gray, very fine with		: G. L. Delavan 5/77.
70′-110′	Sand, fine to medium @ 100'-110' minor clay and		silt @ 50'-60' trace of lignite	0'- 20'	Clay, light brown to tan, with very fine sand
110′-15 0'	glauconite	60'- 85'	Sand, gray to brown, very fine	20'- 5 0'	Clay, gray to brown, slightly
	Sand, fine to medium, with interbedded glauconitic clay	05/100/	with brown to gray clay and traces of lignite		micaceous, with very fine, slightly glauconitic sand
150′-170′	Clay, gray, slightly glauconitic with very fine sand	85′-100′	Sand, gray to brown, very fine with trace of lignite and clay	50′-115′	Clay, brown, slightly micaceous with very fine sand
170′-180′ 180′-185′	Clay, brown, slightly micaceous Sand, very fine, with brown clay	100′-105′ 105′-130′	Clay, brown, with very fine sand Sand, gray to brown, very fine	115′-160′	Clay, brown, with very fine sand @ 115'-120' minor glauconite
185′-200′	Clay, brown to gray, with very fine sand and silt	130′-150′	w/brown clay & trace of lignite		and siderite
	T. D.: 200'	150′-175′	Clay, gray, slightly lignitic Clay, gray, slightly micaceous		@ 125'-135' slightly micaceous with trace of siderite
Drill Hole	No. 191. Elevation 280'	175′-180′	with very fine sand Clay, gray, with silt and minor	160′-180′ 18 0′ -2 00 ′	Clay, with lignitic silt Clay, brown, with very fine sand
Location: County, U	NW¼, Sec. 28, T. 17 S., R. 17 W. nion	180′-185′	siderite Clay, gray to brown, with very		T. D.: 200'
	: G. L. Delavan 6/77.	185′-200′	fine sand	D.:!!! 11.1.	N 407 5
0'- 15'	Clay, light brown to tan, w/silt	165 -200	Sand, very fine, with silt and gray clay	Location:	No. 197. Elevation 170' NW¼, Sec. 26, T. 17 S., R. 16 W.
15'- 20' 20'- 25'	Clay, tan Clay, light brown, with very		T. D.: 200'	County, U Logged by	nion : G. L. Delavan 5/77.
25'- 30 '	fine sand Clay, brown, with very fine		No. 194. Elevation 240' SE¼, Sec. 25, T. 17 S., R. 17 W.	0'- 20'	
30'- 35'	sand, slightly micaceous Clay, chocolate brown, lignitic	County, U		20'- 25'	silt Clay, gray to brown, slightly
35'- 40' 40'- 60'	Clay, brown Clay, gray to brown, with very	0'- 10'		25'- 30'	micaceous, with very fine sand Lignite, with chocolate brown
	fine sand and silt @ 40'-45' slightly micaceous	10'- 40'	very fine sand Clay, tan to light brown, with	30'- 40'	clay Clay, brown, with very fine,
60'- 65'	Clay, brown, with very fine sand and trace of lignite	40'- 50'	very fine sand Clay, gray, with very fine,	40'- 45'	slightly carbonaceous sand
65'- 75'	Clay, gray to brown, with very fine, slightly micaceous sand	50'- 80'	slightly micaceous sand Clay, gray, w/very fine sand and	40 - 45	Clay, chocolate brown, with very fine, slightly micaceous
75'- 85' 85'- 100'	Clay, brown, with fine sand Clay, brown, with very fine sand	80'- 90'	glauconite, and trace of siderite	45'- 50'	sand Clay, brown to chocolate
100′-185′	Clay, brown, with very fine sand		Clay, gray, with fine to very fine sand and friable lignite	5 0' - 85'	
105/405/	and silt @ 100'-105' slightly micaceous	90′-100′ 100′-110′	Sand, with lignitic clay Clay, gray, with fine to medium	85'- 9 0 '	slightly micaceous sand Clay, gray to brown, slightly
185′-195′	Silt, brown, with brown fissile clay and trace of lignite	110′-120′	lignitic sand Sand, fine to very fine, with	90′-125′	glauconitic with silt Clay, brown, with very fine,
195′-200′	Clay, brown, with very fine to fine, slightly micaceous sand	120'-150'	lignitic stringers Sand, medium to fine, with	125′-150′	slightly micaceous sand Clay, with very fine to fine
Drill Hala	T. D.: 200'	15 0' -165'	trace of lignite Clay, gray to brown, with very	150'-165'	sand, and trace of lignite Clay, brown, with interbedded
Location:	No. 192 . Elevation 270' SW¼, Sec. 27, T. 17 S., R. 17 W.	165′-190′	fine sand Clay, brown, with very fine,	165′-19 0 ′	very fine to fine sand Sand, fine, with thin lignite
County, U Logged by	nion : G. L. Delavan	190′-200′	slightly micaceous sand Clay, gray to brown, with very	190′-200′	stringers Clay, brown to light brown,
0'- 25'	Clay, light brown to tan, slightly		fine, slightly micaceous sand T. D.: 200'		with very fine sand Core interval 35'-40'
25'- 5 0'	micaceous, with very fine sand Clay, gray to brown, with very	Drill Hole	No. 195. Elevation 215'		Recovered: Lost:
50'- 55'	fine, slightly micaceous sand Clay, gray to brown, with lignite	Location: County, U	SE¼, Sec. 30, T. 17 S., R. 16 W.		35'-38'10" lignite, brown, soft,
55′-160′	stringers Clay, brown, with fine to very		: G. L. Delavan 5/77.		slightly micaceous, with silt 38'10"-39'10" sand, fine, gray
55-100	fine sand	0'- 20'	Clay, light gray,w/very fine sand		with silt T. D.: 200'

Drill Hole No. 198. Elevation 140'	60'- 65'	Sand, with lignite stringers	45'- 50'	Lignite, with very fine to fine
Location: SW4, Sec. 23, T. 17 S., R. 16 N County, Union	W. 65′- 90′	Sand, fine to very fine @ 65'-70' trace of lignite	50'- 65'	sand and minor clay Clay, brown, with very fine
Logged by: G. L. Delavan 5/77.	90′-115′	@ 70'-90' minor clay stringers Clay, brown, with sand and very	65′- 70′	sand and lignite stringers
0'- 60' Clay, light brown to tan, wi	th	fine sand stringers		Lignite, with very fine sand and silt
very fine sand and silt 60' 80' Clay, gray to brown, slight	115′-150′ dy	Sand, fine to very fine, with thin lignite stringers	70'- 95'	Clay, gray to brown, with very fine sand and lignitic stringers
micaceous, slightly glauconit with very fine sand	tic 150'-155'	Sand, fine to very fine, with brown, slightly carbonaceous	95′-100′	Clay, brown to gray, with very fine sand and trace of lignite
80'-90' Clay, brown to light brow slightly carbonaceous with ve		clay Sand, fine to very fine, slightly	100′-115′	Clay, brown, with silt and traces of lignite
fine sand 90'-120' Clay, gray to brown, wi	th 160'-170'	carbonaceous Sand, fine to very fine, with	115′-125′	Clay, brown, with very fine sand and trace of lignite
very fine sand @ 90'-100' slightly glauconit	tic 170'-180'	brown clay Clay, brown, with very fine sand	125′-130′	Silt, brown, with very fine sand and lignite stringers
@ 100'-120' carbonaceous 120'-145' Clay, gray to brown, iro	180'-195'	Sand, very fine to fine, with brown clay and trace of lignite	130'-140'	Clay, brown, with trace of lignite
stained with carbonaceo material	us 195′-200′	Sand, fine to very fine, with lignitic stringers	140′-150′ 150′-160′	Sand, very fine with lignite Clay, brown, with very fine
145'-160' Clay, brown, with sand 160'-175' Clay, brown, with silt ar	nd	T. D.: 200'	160′-165′	sand
very fine sand 175'-190' Sand, very fine, slightly lignit		No. 201. Elevation 210'		Clay, brown, with very fine sand and trace of lignite
with trace of siderite 190'-200' Clay, with very fine sand ar	Location:	NW¼, Sec. 6, T. 17 S., R. 15 W.	165′-170′	Sand, very fine, brown, with lignitic stringers
minor interbedded siderite		rion : G. L. Delavan 6/77.	170′-175′	Clay, brown, with fine to very fine sand
T. D.: 200'	0'- 10'	Clay, brown, with very fine sand	175′-200′	Silt, with very fine sand and trace of lignite and interbedded
Drill Hole No. 199. Elevation 220'	10'- 25'	Clay, light brown to tan, slightly micaceous, with very fine sand		siderite Core interval 27'-37'
Location: SW1/4, Sec. 14, T. 17 S., R. 16 V County, Union	V. 25'- 40'	Clay, light brown to tan, with interbedded very fine sand		Recovered: Lost:
Logged by: G. L. Delavan 5/77.	40'- 45'	Clay, gray to brown, with		10' 0' 27'-28' lignite
0'- 10' Sand, very fine, with light brown to tan clay	ht 45'- 55'	trace of lignite Lignite, with gray clay and very fine sand		28'-28'6''clay, chocolate brown, lignitic, with very fine sand
10'- 20' Clay, light brown to tan, with very fine sand	th 55'- 65'	Clay, gray to brown, with		28'6"-32'8" sand, very fine, carbonaceous, with lignitic clay
20'- 35' Clay, brown, with very fin slightly micaceous sand	e, 65'- 70'	lignitic stringers and very fine sand		stringers and lignite stringers less than 1" thick
35'- 50' Clay, light brown to tan, with very fine, slightly carbonaceout	th	Sand, very fine, with lignite stringers		32'8"-37' sand, very fine, with increased carbonaceous mater-
sand @ 45'-50' increase in sand	75'- 80'	Lignite, with interbedded gray clay and very fine sand		ial and minor lignitic clay stringers; also few lignite string-
50'- 70' Sand, medium to fine, with ligh	nt 80'- 95'	Lignite, with very fine sand Clay, gray to brown, with very		ers less than 1" thick T. D.: 200"
@ 65'-70' decrease in clay 70'-90' Sand, gray, fine to very fine	95′-100′	fine sand and lignite stringers Clay, gray to brown, w/very fine		
with slightly lignitic stringe 90'-100' Sand, light brown, very fin	rs 100'-110'	sand and interbedded lignite Sand, very fine, gray, with	Drill Hole Location:	No. 203. Elevation 130' NE¼, Sec. 32, T. 16 S., R. 15 W.
with trace of lignite	110'-125'	lignite Clay, gray to brown, with very	County, U	nion : G. L. Delavan 6/77.
brown to brown silt with inte	te r- 125'-150'	fine sand and lignite stringers Sand, fine to very fine, with	0'- 10'	
bedded lignite 150'-165' Clay, brown, with very fine san	d	interbedded lignite and minor clay	10'- 15'	gray clay Clay, light gray, with very
165' 190' Sand, very fine, gray, with gra		Sand, very fine, with silt and traces of lignite	15'- 30'	fine sand
@ 175'-190' increase of clay an decrease of lignite		Clay, gray to brown, with very fine sand	30'- 40' 40'- 50'	Sand, fine, with light gray clay Sand, fine
190'-200' Clay, light brown, with ver fine sand and lignite trace	y 170'-180'	Silt, gray, with very fine sand and trace of lignite	50'- 65'	
T. D.: 200'	180′-185′	Silt, gray, with brown clay and trace of lignite	054 744	very fine sand and trace of lignite
Drill Hole No. 200. Elevation 185'	185′-190′	Silt, with very fine sand and	65'- 70' 70'-100'	Sand, very fine, with gray clay Clay, gray, with interbedded
Location: SE¼, Sec. 11, T. 17 S., R. 16 W County, Union	/. 190′-200′	lignite stringers Clay, gray to brown, with very	100′-110′	very fine sand Clay, gray to light gray, with
Logged by: G. L. Delavan 6/77.		fine sand and trace of lignite T. D.: 200'	110′-115′	very fine sand Sand, fine to very fine, with
0'- 10' Sand, reddish brown, fine t			115′-140′	gray clay Clay, gray, with very fine sand
very fine, slightly carbonaceou 10'- 20' Clay, light tan to brown, wit	h Location:	No. 202. Elevation 175' SW¼, Sec. 32, T. 16 S., R. 15 W.	140′-145′	Sand, very fine, with inter- bedded siderite and trace of
interbedded very fine iron stain ed sand	1- County, Ui	nion G. L. Delavan 6/77.	145′-155′	lignite
20'- 40' Clay, light tan to brown, with very fine sand	h 0'- 10'	Clay, light brown, iron stained		sand
40'- 45' No sample 45'- 55' Sand, very fine to fine, ligh	10'- 25'	Clay, gray to brown, with very fine sand	155′-165′	Clay, gray, with interbedded very fine sand
brown @ 50'-55' trace of lignite	25'- 30' 30'- 35'	Lignite, with gray to brown clay	165′-185′	Sand, very fine, with silt and minor gray clay
55'- 60' Lignite, with sand and lignitically	c 35′- 45′	Clay, gray to brown, with lignite stringers	185′-200′	@ 175'-185' thin siderite layers Sand, very fine, with gray silt
	35 - 45	Clay, brown, with very fine sand		T. D.: 200'

	lo. 204. Elevation 120' NW¼, Sec. 34, T. 16 S., R. 15 W.	170′-190′	Sand, very fine, with clay and interbedded siderite	150′-170′	@ 100'-130' trace of siderite Sand, very fine, with silt and
County, Un	ion	190′-200′	Clay, brown, with very fine sand T. D.: 200'		gray to brown, slightly mica- ceous clay
Logged by:	1. Suell O/17.		1. 5 200	170′-180′	Sand, very fine, with brown,
0'- 5'	Gravel, pea, with light gray clay	Location:	No. 206. Elevation 108' NW¼, Sec. 26, T. 16 S., R. 15 W.	180′-200′	slightly micaceous clay Silt, brown, with brown clay T. D.: 200'
5'- 10 '	Clay, gray, iron stained, with minor gravel	County, Ur	D. W. Lumbert 6/77.		
10'- 20'	Sand, gray, very fine @ 15'-20' traces of lignite	0'- 10'	Sand, fine, with red clay	Location:	No. 209. Elevation 195' NW¼ , Sec. 30, T. 16 S., R. 14 W.
20'- 25'	and gray clay Sand, gray, with silt and clay	10'- 35'	Sand, very fine, with inter- bedded gray clay	County, U	nion : G. L. Delavan 6/77.
25'- 30'	and trace of lignite Clay, dark gray to light green,	35'- 50' 50'- 65'	Clay, gray, with very fine sand Clay, gray to light gray, with	0'- 20'	Clay, light gray, with very fine
30'- 35'	slightly glauconitic Clay, light brown and dark gray	65'- 75'	very fine sand Clay, gray to brown, with very	20'- 30'	sand and silt Clay, light tan to gray, with
35'- 40' 40'- 45'	Clay, light green, with minor iron concretions	75'- 80'	fine sand Clay, gray, with interbedded very fine sand	30'- 55'	very fine sand Clay, light gray, with very fine sand
45'- 50'	Clay, dark green to gray, with very fine sand Clay, light brown to gray, with	80′-115′	Clay, gray, with very fine sand @ 100'-115' slightly glauconitic	55'- 60'	@ 40'-50' iron concretions Sand, very fine, with gray
50'- 55'	very fine sand Clay, gray to green, with very	115′-140′	Silt, with gray, glauconitic clay and interbedded siderite	60'- 70'	iron stained clay Clay, gray and brown inter-
55'- 7 0 '	fine sand Clay, dark gray, with very fine	140′-155′	Clay, gray, with very fine sand @ 150'-155' slight glauconite	70′-120′	layered Clay, gray, with interbedded
33 · 7 0	sand @ 60'-70' trace of lignite	155′-160′	and slightly micaceous Silt, with gray, slightly glau-	70 720	fine to very fine sand and trace of lignite
70'- 75'	Clay, light gray, with very fine sand and lignite stringers	160′-165′	conitic clay and trace of siderite Clay, gray, slightly glauconitic	120'-135' 135'-150'	Sand, very fine, with gray clay Clay, gray, with interbedded
75'- 85 '	Clay, light gray to gray, with very fine sand and traces of	165′-170′	with very fine sand Silt, with very fine sand and	100 100	very fine sand @ 140'-150' minor glauconite
85'- 9 0 '	lignite Clay, greenish gray, with silt and	170′-175′	gray, slightly glauconitic clay Clay, gray to brown, with	150′-170′	and trace of siderite Clay, gray, carbonaceous with
90′-100′	traces of lignite Clay, gray, with very fine sand	175′-200′	very fine sand Silt, with very fine sand and	170′-180′	very fine sand Clay, brown, with silt
30 100	and silt @ 95'-100' soft brown lignite	173 -200	interbedded gray, slightly glau- conitic, slightly micaceous clay	180'-200'	Clay, gray, slightly micaceous with silt
100′-105′	stringers Clay, greenish gray, with very		T. D.: 200'		T. D.: 200'
100 -105	fine sand and traces of lignite	Drill Hole	No. 207. Elevation 150'		
105′-110′	Clay, gray, with silt and trace of brown lignitic clay	Location: County, U	SW¼, Sec. 25, T. 16 S., R. 15 W. nion		No. 210. Elevation 300' SW¼, Sec. 14, T. 16 S., R. 28 W.
110′-120′	Clay, dark gray, with silt and traces of lignite	Logged by	: D. W. Lumbert 6/77.	County, M Logged by	liller : G. L. Delavan 6/77.
120′-125′	Clay, light brown, with silt and traces of lignite	0'- 10' 10'- 15'		0'- 10'	Clay, red to brown, with very
125′-130′	Clay, light brown to dark gray, with silt and traces of lignite	15'- 50'	Sand, very fine to fine, with minor red to tan clay	10'- 15'	fine sand Sand, red to brown, coarse to
130′-145′	Clay, dark gray, with very fine sand and silt and traces of	50'- 55'	Clay, gray to brown, with lignite stringers and very fine	15′- 30′	fine, with minor clay Sand, coarse to medium, with
	lignite @ 135'-140' slightly glauconitic	55'- 80 '	sand Clay, gray to brown, with very	30'- 40'	pea gravel Gravel, coarse to pea
145'-150'	Clay, light gray, with silt and trace of lignite	33 - 80	fine sand @ 70'-80' slightly micaceous	40'- 46'	Clay, gray, with interbedded siderite
	T. D.: 150'	80′-100′	Clay, gray, with very fine sand @ 90'-100' slightly glauconitic	46'- 5 0'	Clay, gray, with lignite stringers and very fine sand
		100'-120'	Clay, gray to brown, carbona-	5 0 ′- 56′	Lignite, black, hard
	No. 205. Elevation 130' SE¼, Sec. 27, T. 16 S., R. 15 W.	120′-130′	ceous with very fine sand	56'- 58'	Clay, gray, with stringers of
County, U	nion	130'-140'	Clay, brown, with very fine sand Clay, gray, with very fine, slight-		black, hard, lignite and trace of siderite
Logged by	G. L. Delavan 6/77.	140′-150′	ly micaceous sand No sample	58'- 60'	Clay, gray, with silt, and trace of siderite
0'- 10'	Sand, very fine, with silt, light	140 -130	T. D.: 150'	60'- 72'	Silt, with gray clay
10'- 25'	brown and brown to tan clay Clay, light brown to tan, with		No. 208. Elevation 195'	72'- 76'	Lignite, black, hard, with minor gray clay
25'- 40 '	very fine sand Clay, gray, with interbedded	County, U		76′- 80′	Silt, with gray to chocolate brown clay, and trace of lignite
40'- 75'	very fine sand Clay, gray, with very fine sand		: G. L. Delavan 6/77.	80'- 90'	Sand, coarse, with pea gravel and minor gray to dark brown
75'- 9 0 '	© 55'-60' trace of siderite Sand, very fine, with gray clay	0′- 10′ 10′- 20′	Clay, red, with fine sand Clay, light tan, with very fine	9 0 ′- 95 ′	clay Sand, with pea gravel
90'- 95'	and trace of lignite Clay, gray to brown, with very	20'- 35'	sand Sand, very fine, with light	95′-100′	Silt, with gray clay and minor siderite
95′-110′	fine sand Silt, brown, with trace of lignite	35'- 40'	brown to tan clay Clay, chocolate brown to tan,	100′-105′ 105′-110′	No sample Clay, gray
110′-130′	Clay, brown, slightly micaceous with very fine sand	40'- 50'	with very fine sand Sand, very fine, with gray clay	110′-118′ 118′-120′	Clay, gray to chocolate brown Lignite, black, soft, with dark
130′-135′ 135′-140′ 140′ 160′	Silt, brown, with very fine sand Clay, brown, with very fine sand	50'- 60'	and lignite stringers Sand, very fine, with yellow	120′-140′	brown clay Clay, dark brown to dark gray,
140′-160′	Silt, brown, with clay and very fine sand	60′-150′	clay and minor lignitic clay Clay, brown, with fine to very	140 -150′	with silt and lignite stringers Clay, dark brown, with silt and
160′-170′	Silt, brown, with interbedded siderite and very fine sand		fine sand @ 70'-100' slightly micaceous		trace of lignite T. D.: 150'

	e No. 211. Elevation 305' n: SW¼, Sec. 14, T. 16 S., R. 28 W. Miller		No. 215. Elevation 260' NW¼, Sec. 27, T. 17 S., R. 27 W.		218. Elevation 212' SW¼, Sec. 34, T. 18 S., R. 27 W.
	by: G. L. Delavan 6/77.		: G. L. Delavan 6/77.		c: G. L. Delavan 6/77.
0'- 10	very fine sand and minor gravel	0'- 25'	Clay, brown to light tan, with fine to very fine sand	0'- 20' 20'- 40'	Clay, brown Clay, brown, with very fine
10′- 20	O' Sand, red to brown, coarse to medium, poorly sorted and	25'- 30'	Gravel, with coarse sand and light tan clay	40'- 60'	sand and silt Clay, gray, with fine sand
20'- 25	minor gravel 'Sand, red to brown, coarse to medium, with minor pebbles	30'- 35' 35'- 40' 40'- 50'	Sand, coarse, with pea gravel Sand, coarse to very coarse Clay, dark to chocolate brown,	60'- 70'	Clay, gray to brown, slightly micaceous, with coarse sand and trace of lightle
25′- 30)' Sand, fine to very fine, with pea gravel	50'- 60'	micaceous, with very fine sand Clay, chocolate brown, slightly	70'- 75'	Clay, gray to brown, with coarse to fine sand
30'- 35 35'- 40	minor pea gravel	60'- 73'	micaceous, with very fine sand and trace of black lignite Sand, very fine, with chocolate	75'- 80' 80'- 85'	
40′- 45	Sand, coarse to fine, with pea gravel	73'- 80'	brown clay and trace of lignite Sand, very fine, w/chocolate to	85'- 9 0 '	micaceous, with fine to very fine sand Clay, dark gray, with very
45′- 50	' Gravel, pea T. D.: 50'	80′- 90′	light brown clay @ 73' sandstone layer Sand, very fine, with clay	90'- 95'	fine sand and minor pea gravel Silt, with very fine sand and
			and trace of lignite	95′- 100 ′	gray clay, and trace of lignite Clay, gray to brown, with very
Drill Hol Location	e No. 212. Elevation 263' :: NE¼, Sec. 23, T. 16 S., R. 28 W.	90'- 95' 95'-100'	Clay, light tan and dark brown interlayered, and very fine sand Clay, dark brown, with very fine	100′-110′	fine sand and trace of lignite Clay, gray to brown, and fine
County,	Miller by: G. L. Delavan 6/77.	100′-110′	sand	110′-130′	sand with white clay Clay, dark brown, with very
	o' Sand and gravel		Sand, very fine, with dark brown and light tan slightly micaceous clay		fine sand @ 110'-120' slightly micaceous @ 120'-130' silt and trace of lig-
	T. D: 30'	110′-140′	Sand, very fine, with dark brown clay and silt	130′-147′	nite Silt, with dark brown clay
Drill Hol	a No. 212 Elementary 2207	440/450/	@ 110'-120' slightly micaceous and trace of lignite	147′-150′	Sand, very fine T. D.: 150'
Location	e No. 213. Elevation 332' :: NW¼, Sec. 31, T. 16 S., R. 27 W.	140′-150′	Sand, very fine, with silt and minor dark brown, slightly	Drill Hole	No. 219. Elevation 250'
County, Logged b	Miller by: G. L. Delavan 6/77.		micaceous clay T. D.: 150'	Location: County, N	SW¼, Sec. 15, T. 19 S., R. 27 W.
0'- 10	Clay, red to brown, with very			Logged by	: G. L. Delavan 6/77.
10'- 15	fine sand 'Sand, very fine, with white to light tan clay		No. 216. Elevation 255' NW¼, Sec. 3, T. 18 S., R. 27 W.	0′- 20′	brown with very fine sand
15′- 30	' Sand, very fine, with minor light brown clay		: G. L. Delavan 6/77.	20'- 25' 25'- 30'	Clay, reddish brown, with very fine sand Gravel, pea, with coarse sand
30′- 35 35′- 40	Gravel, with coarse sand	0'- 10' 10'- 55'		30'- 35'	and iron concretions
40′- 48	minor light tan clay		@ 10'-15' minor carbonaceous material	35'- 40'	Clay, gray Clay, gray, slightly micaceous with very fine sand
48′- 50	' Clay, dark chocolate brown, slightly micaceous with very fine sand	55′- 68′	@ 20'-30' slightly micaceous Sand, very fine, with silt and minor clay	40'- 50'	Clay, gray, with very fine carbonaceous sand and minor
	T. D.: 50'	68'- 70'	Gravel, pea, with minor coarse sand and trace of lignite	50′- 60′	iron cemented sand layers Clay, gray to brown, with very fine sand and minor iron cemen-
		70'- 77' 77'- 80'	Gravel, pea Clay, brown, with gravel	60'- 7 0'	ted sand layers
Location	e No. 214. Elevation 290' : SW¼, Sec. 9, T. 17 S., R. 27 W.		T. D.: 80'	70'- 75'	brown clay and trace of lignite Clay, gray, with very fine sand
County, Logged b	willer y: G. L. Delavan 6/77.			75′- 80′	and trace of lignite
0′- 58	' Clay, brown to reddish brown,	Drill Hole	No. 217. Elevation 253'		with very fine sand
	with very fine sand alternating with fine to very fine sand layers	County, M	SE¼, Sec. 15, T. 18 S., R. 27 W. iller : G. L. Delavan 6/77.	80'- 90' 90'-114'	
58′- 63	' Gravel, pea, with minor, very coarse sand	0'- 40'	Clay, light brown to reddish brown, with silt, interbedded	114′-130′	@ 105'-114' trace of lignite Sand, very fine, with gray to
63'- 70'		40'- 50'	with very fine sand Clay, gray to brown, with silt	100/ 155:	brown, slightly micaceous clay and trace of lignite
70'- 80'	' Sand, fine to very fine @ 75'-80' minor brown clay	50'- 60' 60'- 74'	Clay, gray, with silt Clay, gray to bluish gray, with	130′-150′	Clay, gray, slightly micaceous with very fine sand and trace of lignite
80′-100′	Taria, very fine, with dark	74'- 100'	very fine sand Sand, very fine, with gray clay		T. D.: 150'
100′-110′	brown, micaceous clay Sand, very fine, with choco- late brown, micaceous clay	100/ 440/	and silt @ 80'-100' trace of lignite	Location:	No. 220. Elevation 332' NW¼, Sec. 10, T. 19 S., R. 27 W.
110′-135′	Sand, very fine, with chocolate brown clay and silt	100′-110′ 110′-120′	Sand, very fine, with gray clay Sand, very fine, with minor clay and trace of lignite	County, M	iller : G. L. Delavan 6/77.
135′-140′	Sand, very fine, with clay and trace of lignite	120′-130′	Silt, with blue, carbonaceous clay	0'- 23'	Clay, light tan to reddish brown,
140′-143′		130′-135′	Clay, bluish gray, with silt and very fine sand		slightly micaceous, with very fine sand @ 10'-23' minor iron cemented
			T. D.: 135'		sand

23'- 50'	Clay, gray to brown, slightly		No. 222a. Elevation 232'	70'- 95'	Sand, very fine, with brown
	micaceous with very fine sand	Location: I	NE¼, Sec. 28, T. 19 S., R. 27 W.		clay and trace of lignite @ 75'-85' slightly micaceous
50'- 55'	Clay, gray to brown, with very fine sand		G. L. Delavan 7/77.	05/405/	@ 90'-95' slightly micaceous
55'- 65'	Clay, dark gray, slightly mica- ceous with very fine sand	0'- 10'	Sand, reddish brown, very fine	95′-1 0 5′	Clay, brown to grayish brown, with very fine sand and silt
65′- 7 0 ′	Clay, gray to brown, with very	10'- 25'	with silt and clay Sand, coarse to very fine, red-	105′-110′	Clay, brown to dark brown, with very fine sand and silt
70'- 80'	fine sand Clay, gray, with very fine sand	10 - 25	dish brown, with dark brown	110′-125′	Clay, brown, with very fine
80'-110'	and silt Sand, very fine	25'- 30'	clay and small gravel Gravel, pea, with coarse sand		sand @ 110'-120' slightly micaceous
	@ 90'-100' minor dark gray clay @100'-110' trace of lignite	30'- 44'	and white to brown clay Sand, fine to very fine, with	125′-14 0′	Sand, very fine, with silt and trace of lignite
110'-123'	Sand, very fine, with silt and		white to gray clay	140′-150′	@ 125'-130' trace lignitic clay Clay, brown, with very fine
123'-130'	gray clay and trace of lignite Clay, dark gray to chocolate	44'- 50'	@ 30'-40' small gravel Clay, slightly micaceous, gray to	140 -150	sand and trace of lignite
130'-140'	brown, lignitic, w/very fine sand Clay, dark gray, with trace of	50'- 60'	brown, with very fine sand Clay, gray to brown, with trace		T. D.: 150'
140'-150'	lignite and very fine sand Clay, dark gray, slightly mica-		of lignite @ 55'-60' thin lignite stringers		No. 225. Elevation 345' NW¼, Sec. 23, T. 19 S., R. 27 W.
140 -150	ceous with very fine sand	60'- 70'	Clay, gray, slightly glauconitic	County, M	iller
	@ 140'-150' trace of lignite T. D.: 150'	70'- 80'	with silt Clay, gray, slightly micaceous		
Drill Hole I	No. 221. Elevation 220'	80'- 90'	Clay, gray, slightly micaceous with light gray, very fine sand	0'- 5'	Clay, reddish brown, with fine sand and limonite
Location:	NE¼, Sec. 21, T. 19 S., R. 27 W.	90'-100'	Silt, gray, with gray clay	5'- 10 '	Clay, light tan, slightly mica- ceous, with very fine sand
County, M Logged by	: G. L. Delavan 6/77.	100′-130′	Clay, gray, slightly micaceous with very fine sand and silt	10'- 15'	Clay, light tan to reddish brown,
0'- 5'	Clay, brown, with very fine sand	130′-150′	Silt, gray, with trace of lignite @ 130'-140' lignitic clay		slightly micaceous, with very fine sand
5'- 1 0 '	Clay, gray to reddish brown,	150'-200'	Silt, gray, with trace of lignite @ 160'-200' lignite stringers,	15'- 35'	Clay, dark gray, slightly mica- ceous, w/very fine sand and silt
10'- 30'	with very fine sand Sand, fine to very fine, with		black, firm	35'- 52'	Clay, dark gray,w/very fine sand
30'- 96'	"pea gravel Sand, gray, fine to very fine		T. D.: 200'	5 2' - 60 '	Clay, dark gray, slightly mica- ceous, w/very fine sand and silt
	@ 40'-70' trace of lignite and iron cemented sand		No. 223. Elevation 230' NW¼, Sec. 34, T. 19 S., R. 27 W.	60'- 65'	Clay, gray, with very fine sand and thin stringers of cemented
201 201	@ 70'-96' thin lignite stringers	County, M	iller	651 701	sand and silt
96′- 98′ 98′-1 00 ′	Lignite, black, firm, with sand Clay, gray to brown, with very	Logged by	: G. L. Delavan 6/77.	65'- 70'	Sand, very fine, w/gray, slightly micaceous clay & trace of lignite
100′-105′	fine sand and silt Silt, gray to brown	0'- 10'	Clay, light tan to reddish brown, with very fine sand	70′- 80′	Sand, very fine, with silt and gray, slightly micaceous clay
105′-110′	Clay, gray to brown, slightly micaceous	10′- 20′	Clay, light reddish brown, with very fine sand	80′- 85′	Sand, very fine, with silt and trace of lignite
110′-130′	Sand, very fine	20'- 30'	Clay, dark gray to light brown,	85'- 90'	Sand, very fine, w/silt and clay
130′-150′	Sand, fine to very fine, with black, firm lignite	30'- 40'	with very fine sand Sand, very fine, with gray clay	90′-100′	Sand, very fine, with silt and gray clay; also lignitic clay and
	@ 140'-150' thin lignite string- ers	40'- 80'	Clay, gray, with very fine sand and silt	100′-110′	trace of lignite Sand, very fine, with silt and
	T. D.: 150'	80'- 90'	Sand, very fine, with silt and gray clay		gray, slightly micaceous clay and trace of lignite
	No. 221a. Elevation 219'	90'-120'	Clay, gray to brown, with very	110′-130′	Sand, very fine, with gray clay
Location: County, M	SE¼, Sec. 21, T. 19 S., R. 27 W. iller		fine sand and silt @ 100'-115' slightly micaceous	130′-140′	Clay, gray, micaceous, with trace of lignitic material
Logged by	: G. L. Delavan 7/77.		@ 115'-120' interbedded very fine sand		T. D.: 140'
0'- 10'	Sand, very fine, light gray, with	120'-125'	Sand, very fine		No. 225a. Elevation 328'
10'- 20'	gray clay Sand, very fine, light brown	125′-150′	Clay, gray, slightly micaceous with very fine sand	County, M	
20′-150′	Sand, very fine, light gray @ 20'-40' pea gravel		@ 130'-140' interbedded very fine sand	Logged by	: G. L. Delavan 7/77.
	@ 20'-50' limonite @ 60'-150' thin lignite stringers		@ 140'-150' trace of lignite T. D.: 150'	0'- 10'	Clay, light tan, with silt and fine sand
	@ 70'-150' minor thin gray and	Dwill Holo	No. 224. Elevation 235'	10'- 15'	Clay, light tan, iron stained
150'-162'	brown clay layers Sand, light gray, very fine to	Location:	NW¼, Sec. 10, T. 20 S., R. 27 W.	15'- 19'	with fine sand Clay, mottled
162'-170'	fine, with black lignite Clay, dark brown, with trace of	County, N Logged by	iller : G. L. Delavan 6/77.	19′- 30′	Clay, dark gray, slightly mica- ceous, glauconitic, with very
170′-180′	lignite Clay, dark brown and light	0'- 10'	Sand, fine to very fine, with		fine sand @ 20'-30' silt
	brown interlayered, slightly glauconitic	10'- 15'	light gray clay Clay, reddish brown to light	30′- 50′	Clay, dark gray, slightly mica- ceous, slightly glauconitic, and
180′-200′	Clay, dark brown, slightly ligni-		tan, with very fine sand		light tan clay interlayered, and
	tic, slightly micaceous @ 194′-200′ silt	15'- 20'	Clay, brown, slightly micaceous with very fine sand and silt	50'- 60'	very fine sand and silt Clay, dark gray, slightly mica-
	T. D.: 200'	20'- 25' 25'- 35'	Clay, brown, with very fine sand No sample		ceous, w/very fine sand and silt & thin stringers of black lignite
	No. 222. Elevation 237'	35'- 60'	Sand, very fine, with silt and	60'- 68'	Clay, dark gray, slightly mica-
County, M			brown clay @ 35'-45' slightly micaceous		ceous, slightly glauconitic, with very fine sand and silt and
Logged by	: G. L. Delavan 6/77.	60'- 70'	@ 45'-60' trace of lignite Sand, very fine, with slightly	68'- 78'	lignitic clay and trace of lignite Silt, brown, slightly micaceous
0'- 10'	Wash out T. D.: 10'		lignitic, brown to dark brown clay and trace of lignite	78'- 80'	@ 78' siderite layer
			ciay and trace or riginite	70 - 60	Silt, brown, with trace of lignite

80'- 90'	Silt, brown, with lignitic clay		Core interval No. 1: 96'-106'	Drill Hole	No. 228, Elevation 321'
	and siderite layer @ 80'		Recovered: Lost:		SW¼, Sec. 17, T. 19 S., R. 27 W.
90′-107′	Silt, brown, with trace of lignite		4'10'' 5'2''	County, M	iller
107'-111'	Lignite, black, soft		96'-101'2" washed out	Logged by	: G. L. Delavan 6/77.
111′-120′	Silt, brown, with lignite stringer and very fine sand		101'2"-105'2" compacted, lig- nitic sand, with lignite stringers	0'- 20'	Clay, light tan to red, silty,
120'-160'	Silt, brown, with very fine sand		105'2"-106' lignite, black, hard	0 - 20	with some limonite
	and trace of lignite		with conchoidal fracture	20'- 45'	Clay, dark gray, silty, glauco-
160′-170′	Silt, brown, with very fine sand				nitic, micaceous
170′-183′	and trace of pyrite Silt, brown, with brown clay		Core interval No. 2: 106'-116'	45'- 50'	Clay, dark gray, silty
183′-200′	Silt, brown, with clay and trace		Recovered: Lost: 10' 0'	50′- 60′	Clay, dark gray, micaceous, glauconitic, with very fine sand
	of lignite		106'-107'2" lignite, black, firm,	60'- 70'	Clay, brown, silty, micaceous
	T. D.: 200'		silty		with very fine sand
			107'2"-107'4" sand, with small	70′-110′	Clay, brown, fissile, silty and
			stringers of lignite 107'4''-107'9'' lignite, black,	110′-120′	micaceous Clay, dark brown, with very fine
	No. 226. Elevation 227'		firm, with uneven fracture	110 120	sand and trace of lignite
Location:	NW¼, Sec. 22, T. 19 S., R. 27 W.		107'9"-116' sand and clay	120'-130'	Sand, very fine, with brown clay
County, M			T. D.: 150'	130'-140'	Silt, with brown clay layers and
Logged by	: G. L. Delavan 6/77.			140/ 150/	trace of lignite
0'- 10'	Sand, fine to very fine, reddish			140′-150′	Silt, with trace of lignite and lignitic clay
	brown	Drill Hole	No. 226b. Elevation 318'		T. D.: 150'
10'- 20'	Clay, gray- brown to light tan,	Location:	NW¼, Sec. 22, T. 19 S., R. 27 W.		
	with very fine sand and trace of lignite	County, M			No. 229. Elevation 363'
20'- 40'	No sample	Logged by	: G. L. Delavan 7/77.		NW¼, Sec. 18, T. 19 S., R. 27 W.
40'- 55'	Clay, gray, with very fine sand	0'- 10'	Sand, light tan to brown, very	County, M	: G. L. Delavan 7/77.
551 001	and silt, micaceous		fine with tan clay	Logged by	. G. E. Delavari
55'- 60 '	Clay, gray, fissile, with very	10'- 25'	Sand, very fine, light tan to	0'- 15'	Clay, reddish brown to light tan,
60'- 70'	fine sand Sand, very fine, with gray clay		reddish brown, with tan clay	45' 00'	with very fine sand
70'- 80'	Sand, very fine, with gray to		and red iron cemented sand layers	15'- 20'	Sand, very fine, with reddish
	brown clay, and trace of lignite	25'- 62'	Clay, gray-brown, slightly mica-	20'- 30'	brown clay and some limonite Clay, dark gray, silty, micaceous
80′- 90′	Sand, very fine, with gray to		ceous, with very fine sand	30'- 35'	Clay, dark gray, with very fine
90'- 96'	brown, fissile clay Sand, very fine, silty, with gray	62'- 83'	Sand, very fine, brown		sand and trace of lignite
5,5	clay	83'- 94' 94'-100'	Silt, gray, with trace of lignite	35'- 4 0'	Sand, very fine, with dark gray
96'-108'	Lignite, black, firm	100'-113'	Sand, very fine, with gray clay Silt, gray, with trace of lignite	40'- 45'	clay Sand, very fine, with silt
108′-120′	Clay, gray to brown, with very	113'-135'	Clay, brown, silty	45'- 50'	Silt, with some gray clay
120'-130'	fine sand, slightly micaceous	135′-140′	Clay, brown, with very fine	50'- 55'	Clay, dark gray to brown, silty,
130′-135′	Clay, gray to brown Clay, gray, silty	140/160/	sand and trace of lignite		micaceous
135'-143'	Clay, gray	140′-160′	Silt, brown, with brown clay and traces of lignite	55'- 65 '	Clay, dark gray, silty, micaceous
143′-150′	Sand, very fine, with gray-	160'-188'	Silt and very fine sand, with	65'- 70 '	with trace of siderite Clay, dark gray to brown, silty,
	brown clay		numerous thin beds and string-	00 ,0	with iron cemented red sand-
	T. D.: 150'		ers of lignite. Lignite beds up to		stone concretions
		1881-2001	3" thick. Drilled fast. Silt, brown, with very fine	70'- 75'	Clay, brown, micaceous, with
		100 -200	sand and trace of lignite	75'- 80'	very fine sand Clay, brown, with very fine sand
Drill Hole	No. 226a. Elevation 228'		T. D. 200'	75 - 00	and some lignitic clay
County, M	NW¼, Sec. 22, T. 19 S., R. 27 W.	D		80'- 95'	Sand, very fine, with some dark
	: G. L. Dèlavan 7/77.	Drill Hole	No. 227. Elevation 320'	0.51 4.55	gray clay
,	7777.	County, M	SW¼, Sec. 24, T. 19 S., R. 27 W.	95′-1 20 ′	Sand, fine to very fine, light
01 401			: G. L. Delavan 6/77.	120'-130'	Sand, fine to very fine, with
0'- 10'					lignite stringers
10'- 15'	brown clay and small gravel Sand, very fine, with light tan	0'- 12'	Clay, gray-brown to reddish	130′-150′	Sand, fine to very fine
	clay	12'- 20'	brown, with some limonite Clay, dark gray, silty, micaceous		T. D.: 150'
15'- 20'	Gravel, pea size, with light tan		and slightly glauconitic	Drill Hole i	No. 230. Elevation 311'
20'- 25'	clay Clay, gray, with silt	20'- 38'	, in a first and		NE¼, Sec. 4, T. 19 S., R. 27 W.
25'- 48'	Clay, gray, with sift Clay, gray, brown, silty, slightly	38'- 40'	gray clay	County, M	iller
	micaceous	36 - 40	Lignite, black, soft, with some lignitic clay	Logged by:	G. L. Delavan 7/77.
48'- 50'	Silt, gray, with gray clay and	40'- 50'	Sand, fine to very fine, gray-	0'- 18'	Sand, medium to fine, with light
50'- 59'	trace of lignite		brown	• .0	tan clay
50 - 59	Silt, gray, with gray clay and very fine sand	50′- 60′	Sand, fine to very fine, with	18'- 20'	Clay, gray to brown, with fine
59'- 75'	Silt, gray, interbedded with	60'- 70'	gray clay and lignitic clay Sand, very fine with gray clay	201 201	sand
	fine sand and trace of lignite	00 70	and silt	20'- 30'	Clay, dark gray, slightly mica-
75′- 96′	Sand, fine to very fine, light	70'- 80'	Sand, very fine, with gray-		ceous, with fine to very fine sand
	gray, with silt and traces of lignite		brown clay, slightly lignitic	30'- 40'	Clay, dark gray, slightly lignitic
96'-107'	Lignite, black, hard, conchoidal	80'- 92'	Silt, with gray-brown clay	401	with very fine sand
	fracture	92′-100′ 100′-120′	Sand, very fine, with gray clay Clay, gray-brown, slightly mica-	40'- 50'	Clay, dark gray, slightly mica-
107′-126′	Sand, light gray		ceous and glauconitic	50'- 60'	ceous, silty and glauconitic Clay, dark gray, with very fine
126′-130′	Sand, light brown to gray, with	120′-130′	Clay, gray-brown, with very fine	55 - 66	sand, micaceous
130'-150'	silt, clay and trace of lignite Silt, light brown, with very fine	120/ 450	sand	60'- 70 '	Clay, light gray to brown, mica-
	sand and clay, with trace of	130′-150	Clay, gray-brown, silty, slightly micaceous	70' 00'	ceous, with very fine sand
	lignite		T. D.: 150'	70'- 80'	Clay, brown, slightly micaceous with very fine sand
					with very fille sailu

80'- 90'	Sand, fine to very fine, with light brown clay	58'- 64'	Sand, very fine, with clay and silt binder	130′-140′	Silt, dark brown, micaceous, with very fine sand
90′-100′	Sand, fine to very fine, lignitic with brown clay	64'- 70'	Clay, brown, slightly micaceous, with very fine sand and silt	140′-150′	Clay, gray-brown, micaceous T. D.: 150'
100′-120′	Sand, fine to very fine, with light brown, silty, micaceous	70'- 80'	Sand, very fine, with silt and gray-brown clay binder	Drill Hole	No. 235. Elevation 318'
120′-130′	clay and trace of lignite Sand, very fine, light brown	80'- 85'	Clay, light gray to brown, mica- ceous, with very fine sand		NW¼, Sec. 6, T. 19 S., R. 28 W.
130′-150′	Silt, with lignitic clay and trace of lignite	85'- 90'	Clay, brown, with very fine sand and silt		: G. L. Delavan 7/77.
	T. D.: 150'	90′-100′	Clay, brown, silty, with very fine sand and trace of lignite	0'- 10'	Sand, tan, very fine, with some clay
		100'-110'	Clay, brown to dark brown,	10'- 30'	Sand, light tan, very fine
	No. 231. Elevation 335' SW¼, Sec. 11, T. 19 S., R. 28 W.		silty, with very fine sand and trace of lignite	30'- 50'	Clay, dark gray, micaceous, with very fine sand and silt
County, M		110′-150′	Clay, dark brown, silty, with	50'- 70'	Clay, dark gray to brown, silty,
	: G. L. Delavan 7/77.		very fine sand and traces of		slightly micaceous, with very
0'- 13'	Sand, fine, with light tan and		lignite T. D.: 150'		fine sand and glauconite @ 60' siderite layer
0 10	red iron stained clay			70'-102'	Clay, dark gray to brown, silty,
13′- 20′	Clay, dark gray, silty, mica-		No. 233. Elevation 233'	100/ 115/	micaceous
20'- 30'	ceous, with very fine sand Clay, dark gray to brown, mica-	County, N	SE¼, Sec. 10, T. 19 S., R. 28 W. liller	102′-115′	Sand, very fine, silty, with dark brown clay
	ceous, with iron stained clay and limonite	Logged by	: J. M. Howard 7/77.	115′-120′ 120′-126′	Clay, dark brown Clay, dark brown, with silt
30'- 50'	Clay, dark gray-brown, slightly	0'- 15'	Clay, gray, mottled, with fine	126′-140′	Silt, dark brown
50'- 53'	micaceous, with very fine sand Sand, very fine to fine, with	15'- 27'	sand Clay, gray, with silt		T. D.: 140'
	gray-brown clay	27'- 33'	Silt, gray, with gray clay, and		No. 236. Elevation 230'
53'- 60 '	Sand, very fine, with gray- brown clay and lignite stringers		fine micaceous sand Siderite layer @ 27'	Location: County, M	SW¼, Sec. 21, T. 18 S., R. 28 W.
60'- 65'	Sand, gray-brown, very fine, silty, with gray clay	33'- 50' 50'- 60'	Clay, gray, with silt Clay, gray, with fine sand		: G. L. Delavan 7/77.
65'- 70 '	Clay, gray-brown, with very fine sand		and iron concretions @ 50'	0'- 20'	Sand, very fine, micaceous, with
70'- 75'	Clay, brown, micaceous, with	60'- 70'	Clay, gray, with trace of carbon- aceous material	20'- 30'	brown clay binder Silt, brown, micaceous, with
	very fine sand and trace of lignite	70'- 75' 75'- 8 0 '	Clay, gray, with trace of lignite Silt, gray, with clay	30'- 36'	some clay Silt, brown, sandy
75′- 90′	Clay, brown, slightly micaceous with very fine sand	80'- 90' 90'- 95'	Silt, light gray, with gray clay	36'- 38'	Lignite, silty and sandy, black
90'- 93'	Clay, brown, slightly micaceous		Clay, gray, with very fine sand and silt	38'- 40'	Clay, brown, micaceous, with very fine sand and silt
	with cemented silt and sand lay- ers and trace of limonite	95′-100′ 100′-110′	Sand, very fine, with gray clay Sand, very fine, with silt and	40'- 55'	Silt, brown, with very fine sand and brown clay
93′-120′	Clay, brown, slightly micaceous, with very fine sand and silt	110′-120′	dark brown clay	55'- 70'	Silt, brown, micaceous, with
120'-148'	Clay, brown, slightly micaceous,		ceous clay	70'- 80'	
148'-150	fissile, with very fine sand Clay, gray-brown, slightly mica-	120′-150′	Clay, dark brown, with silt T. D.: 150'		very fine sand and trace of carbonaceous material
	ceous, with very fine sand and silt	Drill Hole	No. 234. Elevation 305'	80'- 86'	Sand, silty, brown, very fine,
	T. D.: 150'		NE¼, Sec. 33, T. 18 S., R. 28 W.	86'- 90'	micaceous Sand, very fine, silty, with
		County, N	liller : G. L. Delavan 7/77.	90′-100′	stringers of lignite
	No. 232. Elevation 385'	Logged by	. G. L. Delavari	90 -100	Silt, brown, micaceous, with very fine sand
	NE¼, Sec. 4, T. 19 S., R. 28 W.	0'- 10'	Clay, mottled, with fine to	100'-115'	Sand, very fine, silty, brown,
County, M	iller : G. L. Delavan	10'- 20'	medium sand	115/ 100/	micaceous
Logged by	. G. E. Delavari		tan, silty clay	115′-12 0 ′	Sand, very fine, brown, mica- ceous, with clay
0'- 10'	Sand, medium to fine, iron	20'- 30'	Sand, fine, with interbedded,	120′-134′	Clay, brown, silty, micaceous
	stained and cemented in places	30'- 35'	light tan clay Silt, gray, with gray clay	134′-135′	Siderite, light tan T. D.: 135'
	with light tan to reddish brown	35'- 45'	Silt, dark gray, slightly mica-		
10'- 15'	clay Clay, light tan to reddish brown,		ceous, with clay binder and trace of lignite @ 40'		No. 237. Elevation 245' SE¼, Sec. 17, T. 18 S., R. 28 W.
15'- 20'	with very fine sand Clay, light tan and gray-brown,	45'- 55'	Silt, gray-brown, with trace of lignite	County, M	iller
	some iron stain, with very fine	55'- 7 0 '	Silt, gray-brown, with clay and	Logged by	: G. L. Delavan 7/77.
20'- 30'	sand and silt Clay, gray-brown, slightly mica-	70'- 80'	some lignitic clay Clay, gray-brown, silty, slightly	0'- 10'	Clay, light tan, with very fine sand
	ceous, with very fine sand and silt	80'- 85'	micaceous Silt, dark brown, slightly lig-	10′- 15′	Clay, light tan to brown, with very fine to coarse sand
30'- 35'	Clay, gray-brown, slightly mica- ceous, with very fine sand and	85'- 90'	nitic and micaceous	15'- 20'	Sand, very fine, with light tan
25' 40'	traces of lignite and limonite	90'-100'	Clay, dark brown, micaceous Clay, brown, silty, micaceous	20'- 30'	clay binder Clay, dark brown, micaceous
35′- 40′	Clay, brown, slightly micaceous and lignitic, with very fine sand	100′-110′ 110′-116′	Silt, dark brown, micaceous Sand, very fine, silty	30'- 40'	with lignite stringers Sand, light brown, with dark
40′- 50′	Clay, brown, slightly micaceous, fissile, with very fine sand and	116′-116½	'Siderite, brown, conchoidal fracture	40'- 50'	brown clay binder
50'- 55'	silt Clay, brown, with very fine	116½′-120	Clay, dark brown, silty, with		Sand, brown, fine to very fine, micaceous and silty
	sand and silt	120′-130′	trace of siderite Clay, dark brown, slightly glau-	50′- 60′	Clay, brown, micaceous, with very fine sand and silt
55′- 58′	Clay, brown, slightly micaceous, with very fine sand and silt		conitic and micaceous, with very fine sand and silt	60′- 70′	Sand, very fine, micaceous, with dark brown clay and silt
			, into sund and sitt		dark brown clay and silt

70′- 75′ 75′- 80 ′	Silt, brown, with very fine sand Silt, brown, with cemented sand stringers	110'-120'	Clay, dark brown, slightly mica- ceous, lignitic, with very fine	115'-125'	Silt and sand, dark brown, very fine, micaceous, with dark
80′- 85′ 85′-1 00 ′	Silt, dark brown, with siderite Silt, dark brown, micaceous, with very fine sand and trace of	120′-133′	sand Clay, dark brown, slightly mica- ceous, with very fine sand and	125′-130′	Silt, dark brown, micaceous, with clay and very fine sand
100'-102' 102'-110'	lignite Silt, dark brown, micaceous Silt, dark brown, micaceous	133′-150′	silt Silt, brown, with brown clay T. D.: 150'	130′-150′	Silt, brown, micaceous, with brown clay and siderite layer @ 139'
110′-125′	with clay		No. 240. Elevation 312'		T. D.: 150'
	Clay, brown, with very fine sand and silt	County, M		Drill Hole	No. 242. Elevation 245'
125'-128'	Silt, dark brown, slightly mica- ceous		: G. L. Delavan 7/77.	Location: County, M	SW¼, Sec. 10, T. 17 S., R. 28 W. iller
128'-150'	Silt, brown, slightly micaceous with some very fine sand T. D.: 150'	0'- 15' 15'- 20'	Sand, reddish brown, very fine Sand, reddish brown, very fine silty		: G. L. Delavan 7/77.
		20'- 30'	Sand, light brown, very fine, silty	15'- 20'	Sand, fine to very fine, brown Clay, light reddish brown, mica-
Drill Hole Location:	No. 238. Elevation 265' NE¼, Sec. 17, T. 18 S., R. 28 W.	30'- 40'	Sand, very fine, silty, with brown clay	20'- 30'	Sand, fine to very fine, reddish
County, M	liller : G. L. Delavan 7/77.	40'- 45'	Sand, fine to very fine, reddish brown		brown, micaceous and glauco- nitic, with some gravel near
0'- 10'		45'- 50'	Sand and gravel	30'- 50'	Sand, brown, very fine, mica-
10'- 20'	ceous	50′- 56′	Sand, fine, with some pea- sized gravel and light tan clay		ceous, silty, with thin iron cemented beds
20'- 40'	Sand, tan, fine to very fine with clay	56'- 66'	Sand, brown to dark brown, with lignitic clay binder and	50'- 55'	Silt, dark brown, micaceous with clay
	Sand, tan, fine to very fine with a trace of clay	66'- 67'	traces of lignite Lignite, black, hard	55'- 100 '	Clay, dark brown, micaceous, silty, with siderite @ 68'
40′- 50′	Sand, gray-brown, very fine, silty, micaceous	67'- 80'	Sand, dark brown to brown, fine to very fine, with traces of		T. D.: 100'
50′- 60′	Sand and silt, micaceous, with a trace of lignite	80'- 90'	lignite and siderite @ 73' Sand, very fine, brown, silty,		No. 243. Elevation 373' SW¼, Sec. 9, T. 13 S., R. 24 W.
60′- 70′	Sand, very fine, silty, mica- ceous	90'- 95'	micaceous Silt, brown to dark brown,	County, H	empstead G. L. Delavan 8/77.
70'- 80'	Silt, brown, micaceous, with trace of lignite	95′-100′	with very fine sand Clay, brown, micaceous, with	0'- 20'	2,
80'- 90'	Silt, brown, lignitic, with very fine sand	100′-130′	very fine sand Silt, dark chocolate brown, with	20'- 25'	Sand, fine to very fine, light brown, micaceous
90′-105′	Silt, brown, with very fine sand and trace of lignite		very fine sand and traces of lignite	20 - 25	Sand, fine to very fine, with light tan to reddish brown
105′-115′	Silt, dark brown, micaceous with very fine sand, trace of	130′-150′	Silt, chocolate brown, with traces of lignite and very fine	25'- 28'	clay Sand and clay, light tan to reddish brown
115′-120′	lignite and clay Silt, dark brown, micaceous		sand T. D.: 150'	28'-110'	Clay, dark gray, slightly mica- ceous and silty
120'-145'	with very fine sand Silt, brown to dark brown, micaceous, with very fine sand	Drill Hole I	No. 241. Elevation 213' NW¼, Sec. 22, T. 17 S., R. 28 W.	110′-120′	Clay, dark gray, slightly mica- ceous, fissile
145′-150′	and trace of lignite Silt, brown to dark brown,	County, M	iller 7/77.	120′-150′	Clay, dark gray, slightly mica- ceous and silty T. D.: 150'
	micaceous with very fine sand T. D.: 150'	0'- 16'			1. 5 100
		16' - 17'	with very fine sand, iron stained Gravel, pea-size	Drill Hole I	No. 244. Elevation 365'
Drill Hole I	No. 239. Elevation 278'	17'- 20'	Sand, reddish brown, fine to very fine, micaceous, some	County, He	à
Location: County, Mi	SW¼, Sec. 5, T. 18 S., R. 28 W.	20'- 30'	iron cemented Sand, reddish brown, fine to		G. L. Delavan 8/77.
	G. L. Delavan 7/77.		very fine, with some iron	0'- 50'	very fine, slightly micaceous
0'- 10'	Clay, light tan to reddish brown, with very fine sand	30'- 37'	cemented and traces of limonite Sand, light tan to red brown,	50′-100′	Clay, dark gray, slightly mica- ceous
10'- 20'	Sand, fine to very fine, reddish brown, iron cemented in places	37'- 40'	fine to very fine, with tan clay binder		T. D.: 100'
20'- 34'	Sand, very fine, iron cemented in places, with some clay and	37 - 40	Sand, dark brown, fine to very fine, micaceous, lignitic, with dark brown clay	Drill Hole N	No. 245. Elevation 396'
34'- 46'	silt Sand, very fine, micaceous and	40'- 50'	Sand, dark brown, very fine. micaceous with dark brown clay	County, He	o
46'- 50'	lignitic Clay, brown, micaceous, with	50'- 60'	Silt, dark brown, micaceous, with dark brown clay		G. L. Delavan 8/77.
50'- 60'	lignite stringers Clay, brown, with very fine sand	60'- 75'	Clay, dark brown, silty, mica- ceous	0'- 14'	Sand, tan to reddish brown, fine to very fine, with light tan
60'- 65' 65'- 70'	Silt, brown, slightly micaceous Clay, brown, silty, micaceous	75′- 82′	Sand, very fine, dark brown.	14'- 20'	clay Clay, dark gray, micaceous
70'- 75'	Silt, with very fine sand and	82'- 85'	micaceous, w/dark brown clay Silt, dark brown	20'- 22' 22'- 24'	Clay, dark gray to brown Lignite, black, firm
75'- 95'	dark brown clay Clay, dark brown, slightly ligni-	85'- 87'	Sand and silt, very fine, dark brown, micaceous		Clay, gray to brown, silty, micaceous, with very fine sand
95'- 104'	tic and micaceous Silt, dark brown, lignitic, with	87'- 90'	Clay, dark brown, silty and micaceous	30'- 37' 37'- 40'	Clay, brown, slightly micaceous
104/4:5:	trace of lignite and very fine sand	90′-115′	Silt, dark brown, micaceous with very fine sand and dark		Lignite, black, soft, with some lignitic clay
104′-110′	Clay, brown, slightly micaceous and lignitic		brown clay and siderite layer @ 115'		Silt, light brown, with some interbedded lignitic clay and trace of lignite

55'- 60'	Clay, brown, slightly micaceous,	77'- 87'	Sand, fine, gray, with gray clay		19'2''-19'10" clay, black, very
60'- 72'	silty, with trace of lignite Clay, brown, slightly micaceous	87′-100′	interbedded		lignitic 19'10''-21'6'' clay, brown,
72'- 75'	Lignite, black, very soft	87-100	Clay, dark gray, silty, micaceous T. D.: 100'		slightly lignitic
75'- 7 9' 79 ' - 81 '	Clay, brown, slightly micaceous Lignite, black, very soft	Drill Hole	No. 247. Elevation 375'		21'6"-22' clay, black, lignitic
81'- 90'	Clay, brown, micaceous		NE¼, Sec. 29, T. 13 S., R. 24 W.		22'-22'8'' lignite, black, soft 22'8''-24'2'' washed out
90'- 93' 93'- 97'	Silt, brown, with trace of lignite	County, H			24'2"-26' lignite, black, hard,
97'-110'	Clay, brown, with trace of lig- nite		: G. L. Delavan 8/77.		conchoidal fracture T. D.: 110 '
97-110	Lignitic clay, dark brown to black, with stringers of lignite	0 10.	Clay, mottled, gray-brown and red, with very fine sand	Drill Hole	No. 250. Elevation 348'
110'-117'	Silt, brown, with very fine sand and trace of lignite	10'- 27'	Clay, light tan, with very fine	Location:	NE¼, Sec. 35, T. 13 S., R. 25 W.
117'-120'	Clay, gray-brown, silty, with siderite at 117'	27'- 30'	sand Clay, dark brown, slightly mica-	County, H Logged by	empstead : G. L. Delavan 8/77.
120'-127'	Silt, gray-brown, with trace of lignite	30'- 39'	ceous, lignitic Clay, lignitic, micaceous, with	0'- 10'	
127'-130'	Silt, lignitic, dark brown, with	39'- 48'	lignite stringers Clay, gray-brown, slightly mica-		slightly micaceous, with inter- bedded clay and 1' of gravel
130'-140'	stringers of lignite Silt, light brown, with trace	48'- 50'	ceous Lignite	10'- 17'	@ 8' Sand, very fine, red-brown,
	of lignite	50'- 57'	Clay, dark brown, lignitic,		slightly micaceous
	Core interval No. 1: 20'-25'	57'- 72'	slightly micaceous Clay, gray-brown, slightly mica-	17'- 40'	Sand, very fine, red-brown T. D.: 40 '
	Recovered: Lost: 2' 3'	72′-110′	ceous, with very fine sand Silt, gray to light brown, slight-	Drill Hole	No. 251. Elevation 398'
	10" lignite recovered with brown lignitic clay on top and	110′-146′	ly micaceous	Location:	SW¼, Sec. 35, T. 13 S., R. 25 W.
	bottom of lignite		Sand, very fine, gray-brown, slightly micaceous	County, H Logged by	empstead: G. L. Delavan 8/77.
	Core interval No. 2: 36'-41'	146′-150′	Lignite, soft, black, sandy T. D.: 15 0 '	0'- 5'	Sand, very fine, red-brown, with
	Recovered: Lost: 4'4" 8"	Drill Hole	No. 248. Elevation 358'	5'- 26'	interbedded brown clay Clay, white to light tan, slightly
	36'-37'10" clay, gray brown, silty and micaceous	Location: County, H	SE¼, Sec. 30, T. 13 S., R. 24 W.	261 201	micaceous
	37'10"-40'4" lignite, black,		: G. L. Delavan 8/77.	26'- 30'	Clay, gray-brown, slightly mica- ceous
	with uneven fracture 40'4"-41' clay, gray brown,	0'- 10'	Clay, red-brown, slightly mica-	30'- 46'	Clay, gray-brown, slightly mica-
	silty		ceous, with very fine sand		ceous, with very fine sand and interbedded red-brown clay
	Core interval No. 3: 40'-50'	10'- 20'	Sand, fine, red-brown to dark brown, slightly micaceous,	46′-111′	Sand, fine, brown, trace of carbonaceous material, with
	Recovered: Lost: 9'	20'- 39'	with trace of lignite Clay, brown to gray-brown,	111′-114′	brown clay
	No lignite recovered. Problems		slightly micaceous		Lignite, black, hard, with con- choldal fracture
	with core barrel; only clay recovered.	39′- 60′	Sand, very fine, dark gray, micaceous, with dark gray clay	114′-115′ 115′-117′	Clay, lignitic black Clay, brown, with interbedded
	Core interval No. 4: 70'-79'4"	60'- 77'	Clay, dark gray-brown, slightly		black, lignitic clay
	Recovered: Lost:	77'-136'	micaceous, with very fine sand Sand, very fine, dark gray,	117′-122′	Clay, brown, slightly micaceous, with very fine sand
	9'4" 0'		slightly micaceous, with thin	122'-124'	Clay, brown, with very fine
	70'-71'3" clay, gray, silty, mica- ceous	136′-150′	beds of dark gray clay Silt, brown, with very fine sand	124'-125'	sand and lignite stringers Lignite, black and hard
	71'3''-73'1" lignite 73'1"-79'4" clay, gray to		T. D.: 150'	125'-128'	Clay, brown, with very fine
	73'1''-79'4'' clay, gray to brown, very fine sand and silt			128′-130′	sand and lignite stringers Clay, brown, slightly micaceous
	Core interval No. 5.: 79'4"-89'	Drill Hole	No. 249. Elevation 338'	130′-139′	Clay, brown, slightly micaceous,
	Recovered: Lost:	County, H	SW¼, Sec. 25, T. 13 S., R. 25 W. empstead	139'-140'	with trace of lignite Lignite, black, hard
	9'8'' 0' 79'-4''-81'8'' lignite		: G. L. Delavan 8/77.	140′-160′	Clay, brown, slightly micaceous,
	81'5"-81'10" lignitic clay, with	0'- 6'	Sand, very fine, red brown		with very fine sand and trace of lignite
	stringers of lignite 81'10"-87'11" clay, gray, silty,	6′- 19′ 19′- 21′	Clay, light tan to red brown		T. D.: 160'
	MICaceous, with very fine sand	19 - 21	Clay, black, lignitic, slightly micaceous	Drill Hole	No. 252. Elevation 365'
	87'11''-88'10'' sandstone, fine, light gray, with hackley fracture	21'- 26'	Lignite, black, with uneven	Location:	SE¼, Sec. 3, T. 14 S., R. 25 W.
	88'10''-89' sand, fine, light gray,	26'- 31'	fracture Clay, gray-brown	County, Ho Logged by	empstead : G. L. Delavan 8/77.
	slightly micaceous T. D.: 140'	31'- 37' 37'- 50'	Sand, very fine, gray-brown Clay, brown, slightly mica-	0'- 9'	
Drill Hole N	No. 246. Elevation 355'	0, 00	ceous, with very fine sand		Sand, very fine, light red-brown, micaceous
Location:	SW¼, Sec. 20, T. 13 S., R. 24 W.	50'- 68'	and trace of lignite @ 48' Clay, brown, slightly micaceous,	9'- 23'	Clay, light tan, slightly mica-
County, He	mpstead G. L. Delavan 8/77.		with very fine sand	23'- 30'	ceous, with very fine sand Clay, light tan to light brown,
		68'- 70'	Clay, dark gray, with lignitic clay and lignite stringers		with very fine sand and dark brown, iron cemented sand-
	Sand, fine to very fine, red brown	70'- 72'	Clay, dark gray, and very fine sand	30'- 30'6	stone layers "Lignite, black, hard
6'- 9'	Clay, light gray, with very fine sand	72′-110′	Clay, blue-gray, with very fine sand	30'6''-39'	Clay, gray, with very fine sand and trace of lignite
9'- 35' 35'- 40'	Sand, fine, light brown Clay, light brown, slightly mica-		Core interval 18'-26'	39'- 52'	Clay, dark gray to brown, lignitic, micaceous, with very
40'- 77'	ceous Sand, fine, gray, with trace of		Recovered: Lost:	FO	fine sand and lignite stringers
	carbonaceous material		5'4" 2'8" 18'-19'2" washed out	52'- 66'	Silt, dark gray, slightly mica- ceous, with siderite @ 56'
					., 51001110 @ 00

66'- 77'	Clay, gray-brown, slightly mica-	Drill Hol	No. 255. Elevation 339'	100/450/	
	ceous, with very fine sand	Location	: NW¼, Sec. 20, T. 14 S., R. 24 W.	130′-150′	Sand, very fine, brown, slightly micaceous, w/dark brown clay
77'- 84'	Lignite, with some black lignitic clay		Hempstead y: G. L. Delavan 8/77.	150′-1 60 ′	Silt, dark brown, with very fine sand and clay
84′ 90′	Clay, dark brown, silty and lignitic	0′- 8			T. D. 160'
90′-110′		8′- 25	very fine cemented sandstone	Drill Hole	No. 258. Elevation 298'
110′-130′		25'- 40	ceous, with very fine sand	County, L	
130′-150′	Silt, brown, with very fine sand	40'- 47	ly micaceous		/: G. L. Delavan 8/77.
	Core interval 76'-86'		fine sand	0'- 14'	fine sand
	Recovered: Lost: 8'8'' 1'4"	47′- 62	ly micaceous, with brown clay	14'- 22'	Sand, very fine, reddish brown, with clay binder
	76'-77'5'' clay, dark brown, very lignitic, waxy and slightly	62'- 90 90'- 98	micaceous	22'- 29'	ceous, with trace of iron cemen-
	micaceous 77'5"-79'7" lignite, black, hard	98′-120	micaceous, with very fine sand	29'- 34'	
	79'7"-81'2" lignite, black, soft and friable	96 -120	with very fine sand and trace		glauconitic, with brown clay binder
	81'2"-82'1" lignite and clay interbedded, dark brown to	120′-150′		34'- 44'	Clay, dark brown, silty, mica- ceous, with siderite layer
	black, with very fine sand 82'1''-83'9" clay, dark brown,		with very fine sand and stringers of lignite up to 1'	44'- 53'	ceous, with very fine sand
	very lignitic 83'9"-84'8" lignite and clay	Call Hale	T. D.: 150'	53'- 70'	silty, micaceous
	interbedded, hard, dark brown to black	Location	No. 256. Elevation 345' NW¼, Sec. 29, T. 14 S., R. 24 W.	70'- 8 0'	Sand, very fine, dark brown, silty, micaceous, with interbeds
	84'8"-86' no recovery; bottom of core barrel spread		Hempstead y: G. L. Delavan 8/77.		of dark brown iron cemented sandstone
	45" inches lignite for analysis from 77'5" - 81'2"	0'- 8	The production brown, with very	80′-100′	siderite layers
	T. D.: 150'	8'- 18'	, and a second	100′-130′	Sand, very fine, brown, with traces of lignite
Drill Hole	No. 253. Elevation 381'	18'- 30'	- Try dark brown, ngintic,	130′-150′	Sand, very fine, brown, with dark brown, micaceous clay
Location:	SW¼, Sec. 5, T. 14 S., R. 24 W		slightly micaceous, with very fine sand		T. D.: 150'
County, H Logged by	lempstead v: G. L. Delavan 8/77.	30'- 62'	Clay, dark brown, slightly mica-	Drill Hole	No. 259. Elevation 275'
0'- 59'	-,,,,	62'- 70'	voi y iiile, Diovii, vyi[[]	Location: County, L	SW1/4, Sec. 8, T. 15 S., R. 24 W.
59'- 60'	with some clay	70'- 79'	Clay, dark brown, slightly mica-		: G. L. Delavan 8/77.
60'- 79'	Lignite, black, soft, with some clay		ceous, with very fine sand and 8" siderite @ 73"	0'- 6' 6'- 10'	
79'- 81'	Silt, gray- brown, slightly mica- ceous, with thin lignite stringers	79′-116′	14" siderite @ 85"	10'- 18'	
81'- 84'	Lignite, black, hard Clay, dark brown, silty, mica- ceous	116′-140′	with very fine sand	18'- 30'	Sand, very fine, dark brown, silty
84'- 88'	Clay and silt, gray-brown, slight-	140′-146′	Clay, brown, slightly micaceous with very fine sand and trace of	30'- 85'	Clay, dark brown, slightly mica-
88′-102′	ly micaceous Sand, very fine, gray-brown,	146′-150′	lignite Clay, gray, silty, slightly mica-	85′-15 0 ′	ceous, with very fine sand Silt, brown, with very fine sand
102′-150′	slightly micaceous Clay, gray-brown, slightly mica-		ceous T. D.: 150'		and a few layers of dark brown clay and siderite T. D.: 150'
	ceous, with very fine sand and traces of lignite	Drill Hole	No. 257. Elevation 330'		
	T. D.: 150	Location:	SW¼, Sec. 31, T. 14 S., R. 24 W	Drill Hole Location:	No. 260. Elevation 287' SW¼, Sec. 21, T. 14 S., R. 24 W.
Drill Hole	No. 254. Elevation 335'	County, H Logged by	empstead : G. L. Delavan 8/77.	County, H	empstead
Location:	SW¼, Sec. 8, T. 14 S., R 24 W	0'- 4'	Sand, very fine, reddish brown		
County, Me	empstead : G. L. Delavan 8/77.	4'- 12'	Clay, brown, slightly micaceous with sand and 18" pea gravel	0'- 10'	Sand, very fine, reddish brown, with brown clay
0'- 17'	Sand, fine, gray-brown, glau-	12'- 23'	Sand, brown, very fine, with clay binder	10'- 72'	Sand, very fine, brown, slightly micaceous
17'- 31'	Clay, gray-brown, silty, slight-	23'- 50'	Clay, very dark brown, slightly micaceous, silty, with very fine	72'- 8 0 '	Sand, very fine, brown, slightly micaceous, w/dark brown clay
31'- 40'	Clay, light tan, slightly mice-	50'- 66'	sand Clay, dark brown, silty, mica-	80′- 85′	brown, slightly micaceous
40/ 40/	lignitic clay		ceous, with very fine sand and siderite layers	85′- 89′	Clay, dark brown to black, with lignite stringers up to 7"
40'- 46'	Sand, very fine, light reddish brown	66'- 90'	Sand and silt, very fine, dark	89'- 94'	thick Clay, dark brown, slightly ligni-
46'-102' 102'-117'	Sand, fine, gray-brown, glau- conitic		brown, slightly micaceous, with dark brown cemented sandstone layers and trace of	94′-105′	Clay, light gray to brown mice-
	Silt, gray-brown, micaceous, with very fine sand and trace	90'- 98'	lignite Sand and silt, very fine, dark	4004	ceous, slightly glauconitic, with very fine sand
117'-150'	Clay, gray-brown silty mice	98′-117′	brown, slightly micaceous Clay, dark brown, slightly mica-	105′-128′	Sand, very fine, silty, gray, slightly micaceous and glauco-
	trace of lignite	117′-130′	ceous, with very fine sand Sand, very fine, brown, mica-	128′-150′	nitic Clay, gray-brown, silty, with
	T. D.: 150 ′		ceous, with siderite layer		traces of lignite T. D. :150'

Location: County, He	No. 261. Elevation 328' SW¼, Sec. 22, T. 14 S., R. 24 W. empstead : G. L. Delavan 8/77.	Drill Hole N Location: S County, Lat Logged by:	SE¼, Sec. 2 ayette
0 18'	Sand, very fine, silty, reddish brown		Sand, very Sand, very
18'- 38'	Sand, very fine, dark brown, slightly micaceous with trace of	11'- 15'	with clay Clay, light
38'- 50'	lignite Clay, gray to brown, silty, sandy and slightly micaceous	15'- 25'	mottled, w Clay, gray- ly micaceou
50'- 92'	Clay, brown, slightly micaceous with very fine sand	25'- 43'	Clay, brow with very
92′-15 0 ′	Silt, brown, with very fine sand and brown clay and trace of lignite		Silt, brow micaceous trace of ligi
	T. D.: 150'		Sand, very micaceous,
Location: County, H	No. 262. Elevation 335' SE¼, Sec. 23, T. 14 S., R. 24 W. empstead : G. L. Delavan 8/77.	130′-150′	Sand and s with brow lignite T. D.: 150'
0'- 17' 17'- 25'	Sand, reddish brown, very fine Clay, brown, silty, slightly micaceous	Drill Hole N Location: County, La Logged by:	NW¼, Sec. : fayette
25'- 30' 30'- 40'	Clay, brown, sandy, glauconitic Clay, brown, sandy	0'- 4'	Sand, very
40′- 72′	Clay, brown to dark brown, silty, sandy, slightly micaceous, with siderite at 66' and 71'	4'- 6'	brown Sand and with large
72'- 81'	Sand, dark brown, very fine, with dark brown clay, slightly micaceous	6'- 20'	Sand, coa with pea gr T. D.: 20'
			1. 0 20

Drill Hole No. 263. Elevation 321' Location: SE¼, Sec. 17, T. 15 S., R. 24 W. County, Lafayette Logged by: G. L. Delavan

lignite

T. D.: 150'

Sand, gray-brown, very fine, slightly micaceous, with gray-brown clay binder

Clay, gray to dark brown, sandy, silty, slightly micaceous

Clay, dark brown, sandy, silty, slightly micaceous, with trace of

81'-114'

114'-140'

140'-150'

120'-130'

130'-150'

9/77. 0'- 4' 4'- 25' Sand, very fine, orange Sand, very fine, orange, with orange to reddish brown clay Sand, very fine, tan to reddish brown with clay binder 25'- 41' 41'- 52' Clay, dark brown, silty, slightly micaceous Clay, dark brown, sandy, with trace of lignite 52'- 58' 58'- 67' Sand, very fine, dark brown, slightly micaceous, with trace of 67'- 80' Sand, very fine, dark brown, with dark brown clay and trace of lignite 80'- 91' Clay, dark brown, silty, mica-ceous with dark brown sand Sand, very fine, dark brown, 91'-100' lignitic, with dark brown clay binder 100'-109' Clay, dark brown, silty, slightly micaceous 109'-120'

Sand, dark brown, very fine, silty, slightly micaceous Clay, dark brown, with dark brown, very fine sand interbed-ded with fissile, sandy clay Sand, dark brown, very fine, silty, with stringers of dark brown, slightly micaceous clay T. D.: 150

evation 310' 1, T. 15 S., R. 24 W. 9/77. lavan

fine, brown, silty fine, brown, silty tan to dark brown

ith iron stained sand brown, sandy, slight-

n, slightly micaceous, fine, brown sand on, sandy, slightly with brown clay and

fine, brown, slightly with brown clay silt, brown, micaceous n clay and trace of

evation 375' 27, T. 15 S., R. 24 W. 9/77.

fine, dark reddish

gravel, coarse sand, pea sized gravel rse, reddish brown,

T. D.: 20

Drill Hole No. 266. Elevation 290' Location: NE¼, Sec. 1, T. 10 S., R. 20 W. County, Clark Logged by: G. L. Delavan 9/77.

Clay, tan, slightly micaceous, with trace of black lightic clay Clay, dark brown to black, 0'- 13' slightly lignitic

Clay, dark brown to black, very lignitic, with stringers of lignite Lignite, soft, black, interbedded 19'- 28' 28'- 30'

with black clay 30'- 31' 31'- 36' Clay, black, lignitic

Lignite, black, firm Clay, dark gray slightly micaceous 36'- 44' to brown 44'- 57

Clay, gray, silty, slightly mica-ceous with thin lignite stringers 57'- 80' Silt, gray, with trace of lignite and siderite

> Core Interval 30'-361/2' Recovered:

Lost:

30' to 31'5'' clay, gray, slightly micaceous 31'5" to 32'6" lignite, black, firm 32'6''-32'8'' clay, dark brown, lignitic 32'8"-34'5" lignite, black, soft, friable 34'5"-34'10" clay, dark brown, lignitic, micaceous 34'10"-36'6" clay, gray, micaceous T. D.: 80'

Drill Hole No. 267. Elevation 250' Location: NE¼, Sec. 6, T. 10 S., R. 19 W. County, Clark Logged by: G. L. Delavan 9/77.

0'- 9' Clay, reddish brown, silty,

slightly micaceous 9'- 27' Sand, very fine, reddish brown, slightly micaceous Clay, light brown, slightly mica-27'- 37' ceous, sandy 37'- 45' gray, silty, micaceous Clav. 45'- 46' 46'- 62' Lignite, black, firm Clay, gray, silty, micaceous, with trace of siderite 62'- 63' 63'- 65' Lignite, black, firm Clay, light tan to gray 65'-100' Clay, dark blue-gray T. D.: 100'

Drill Hole No. 268. Elevation 235' Location: NE¼, Sec. 2, T. 10 S., R. 20 W. County, Clark Logged by: G. L. Delavan 9/77.

0'- 2' Sand, very fine, light tan to brown Clay, light brown, silty, slightly 2'- 28'

micaceous Clay, dark blue-gray, with silty 28'- 35' brown clay

35'- 70' Clay, dark blue-gray T. D.: 70'

Drill Hole No. 269. Elevation 271' Location: NW1/4, Sec. 6, T. 10 S., R. 19 W.

County, Clark Logged by: G. L. Delavan

0'- 2' Sand, light reddish brown, very 2'- 18' Clay, light tan

18'- 18½' 18½'- 20' 20'- 27' 27'- 30' Clay, black, very lignitic Clay, tan to dark brown

Clay, tan Clay, light brown, with trace of very fine sand

30'- 35' 35'- 36' 36'- 39' Sand, very fine, brown Clay, dark gray to brown Lignite, black, soft,

friable 39'- 54' Clay, gray-brown, silty, slightly micaceous 54'- 56'

Clay, gray-brown, silty, with thin stringers of lignite 56'- 72'

Clay, gray-brown, with very fine sand, slightly micaceous

72'- 75' Clay, gray, slightly micaceous, with trace of white clay

75'-100' Clay, dark blue-gray

Core Interval: 24'6"-29'9"

Recovered: 4'9"

Lost:

24'6"-25' washed out 25'-27' lignite, black, hard 27'-27'11" clay, very dark brown, with thin stringers of soft brown lignite 27'11"-29'2" clay, dark brown, sandy 29'2''-29'9'' clay, brown, sandy, slightly micaceous T. D.: 100'

Drill Hole No. 270. Elevation 225' Location: SW1/4, Sec. 32, T. 9 S., R. 19 W. County, Clark Logged by: G. L. Delavan

0'- 8' Sand, very fine, light brown, slightly carbonaceous siderite bed @ 6'

8'- 14' Clay, light brown, sandy, micaceous and carbonaceous

14'- 15' Sand, very fine, brown Lignite, black, firm 28'- 35' Clay, light brown

35′- 38′ 38′- 44′	Lignite, black, firm Clay, gray and white interbed- ded
44'- 49'	Clay, gray, silty, slightly mica- ceous, with very fine sand
49′- 51′ 51′- 66′	Lignite Clay and silt, gray, slightly
66'- 80'	micaceous Clay, dark blue-gray
	Note: Lignite came up drill hole in 2" - 3" chunks with sand and clay. After drilling hole No. 270-A, it was determined that the bit encountered several lignite logs in the sands and clays in Drill Hole No. 270. T. D.: 80"
Location:	No. 270-A. Elevation 225' SW¼, Sec. 32, T. 9 S., R. 19 W.
County, CI	ark : G. L. Delevan 9/77.
County, CI	ark : G. L. Delevan 9/77. Sand, very fine, light brown Clay, light brown, with very fine
County, CI Logged by	ark : G. L. Delevan 9/77. Sand, very fine, light brown Clay, light brown, with very fine sand Clay, light tan, with very fine
County, CI Logged by 0'- 2' 2'- 6'	ark: G. L. Delevan 9/77. Sand, very fine, light brown Clay, light brown, with very fine sand Clay, light tan, with very fine sand, with iron concretions Sand, very fine, light brown,
County, CI Logged by 0'- 2' 2'- 6' 6'- 10'	ark : G. L. Delevan 9/77. Sand, very fine, light brown Clay, light brown, with very fine sand Clay, light tan, with very fine sand, with iron concretions Sand, very fine, light brown, with light tan clay Clay, light tan and light brown,
Ocunty, CI Logged by 0'- 2' 2'- 6' 6'- 10' 10'- 16'	ark : G. L. Delevan 9/77. Sand, very fine, light brown Clay, light brown, with very fine sand Clay, light tan, with very fine sand, with iron concretions Sand, very fine, light brown, with light tan clay Clay, light tan and light brown, slightly micaceous Clay, dark brown, with very
Ocunty, Cl Logged by 0'- 2' 2'- 6' 6'- 10' 10'- 16' 16'- 19'	ark: G. L. Delevan 9/77. Sand, very fine, light brown Clay, light brown, with very fine sand Clay, light tan, with very fine sand, with iron concretions Sand, very fine, light brown, with light tan clay Clay, light tan and light brown, slightly micaceous Clay, dark brown, with very fine sand and trace of lignite Clay, gray-brown, with very fine
County, Cl Logged by 0'- 2' 2'- 6' 6'- 10' 10'- 16' 16'- 19' 19'- 20'	ark : G. L. Delevan 9/77. Sand, very fine, light brown Clay, light brown, with very fine sand Clay, light tan, with very fine sand, with iron concretions Sand, very fine, light brown, with light tan clay Clay, light tan and light brown, slightly micaceous Clay, dark brown, with very fine sand and trace of lignite Clay, gray-brown, with very fine sand and trace of lignitic clay Clay, gray-brown, with inter-
County, Cl Logged by 0'- 2' 2'- 6' 6'- 10' 10'- 16' 16'- 19' 19'- 20' 20'- 30'	ark: G. L. Delevan 9/77. Sand, very fine, light brown Clay, light brown, with very fine sand Clay, light tan, with very fine sand, with iron concretions Sand, very fine, light brown, with light tan and light brown, slightly micaceous Clay, dark brown, with very fine sand and trace of lignite Clay, gray-brown, with interbedded dark-brown clay Clay, gray-brown, with very fine Sand and trace of lignitic clay Clay, gray-brown, with interbedded dark-brown clay Clay, gray-brown, with very fine Sand and trace of lignitic clay Clay, gray-brown, with interbedded dark-brown clay Clay, gray-brown, with very fine
County, Cl Logged by 0'- 2' 2'- 6' 6'- 10' 10'- 16' 16'- 19' 19'- 20' 20'- 30' 30'- 40'	ark: G. L. Delevan 9/77. Sand, very fine, light brown Clay, light brown, with very fine sand Clay, light tan, with very fine sand, with iron concretions Sand, very fine, light brown, with light tan clay Clay, light tan and light brown, slightly micaceous Clay, dark brown, with very fine sand and trace of lignite Clay, gray-brown, with very fine sand and trace of lignitic clay Clay, gray-brown, with inter- bedded dark-brown clay

Location: SW%, Sec. 33, T. 9 S., R. 19 W. County, Clark Logged by: G. L. Delevan 9/77

0'- 2'		ish brown,	slightly
2'- 10'	micaceous Clay, tan		brown,
10'- 33'	with very fi Clay, brow	n to reddis	h b ro wn,
33'- 40'	with very fi Clay, gray-b	rown, sligh	tly mica-
40'- 52'	ceous, wit Clay, dark		
52'- 61'	sand Clay, dark fine sand	gray, with	gray very
61'- 93'	Sand, very	fine, dark g	ray, with
93′-100′	dark gray sil Clay, dark b T. D : 100'		

Drill Hole No. 272. Elevation 150' Location: NE¼, Sec. 33, T. 9 S., R. 19 W. County, Clark Logged by: G. L. Delevan

0'- 10' Clay, light brown, slightly micaceous 10'- 63' Sand, fine to very fine, with gray and white clay Clay, dark blue-gray T. D.: 70' 63'- 70'

Drill Hole No. 273. Elevation 200' Location: NE¼, Sec. 27, T. 9 S., R. 19 W. County, Clark Logged by: G. L. Delevan

0'- 2' Sand and clay, red to brown, with some gravel 2'- 10' Clay, cream color, slightly micaceous, with trace of gravel at the top

Clay, light brown, slightly mica-10'- 19' ceous, with very fine sand and siderite layer

19'- 20' Clay, gray-brown, slightly micaceous

20'- 21' Clay, dark brown, slightly mica-

ceous Clay, very dark brown to black, lignitic 21'- 23' 23'- 30' Clay, light brown, slightly mica-

ceous, with very fine sand Clay, grey to brown, slightly micaceous, with slit and very fine sand and trace of lignite Clay, very dark brown, trace of 30'- 50'

50'- 53' lignite Clay, gray-brown, slightly mica-ceous, trace of lignite 53'- 60'

60'- 61.5' Lignite 61.5'- 63' Clay, gr 63'- 80' Clay, da Clay, gray-brown Clay, dark blue-gray T. D.: 80'

Drill Hole No. 274. Elevation 180' Location: SE¼, Sec. 26, T. 9 S., R. 19 W. County, Clark
Logged by: G. L. Delevan

0'- 2' Sand, very fine, light brown, trace of gravel

9/77.

2'- 12' Clay, light brown to gray, with very fine iron-stained sand

12'- 25' Clay, light tan, slightly micaceous

25'- 27' Lignite, black and hard

27'- 34' Clay, gray-brown, slightly micaceous 34'- 39'

Clay, gray, slightly micaceous with very fine sand 39'- 44' Clay, gray-brown, slightly mica-

CROUS 44'- 45' Lignite, black, soft

45'- 49' 49'- 53' Clay, gray-brown

Clay, gray, slightly micaceous, with very fine sand 53'- 63'

Clay, gray, with interbedded very fine sand and siderite layer Clay, dark brown, lignitic, with 63'- 67' lignite stringer

67'- 87' Clay, gray-brown, slightly micaceous, with very fine sand

Clay, gray-brown, slightly mica-ceous, with very fine sand and lignitic clay 87'- 94'

Clay, gray, with interbedded, very fine sand Clay, light blue-gray, with white 94'-107' 107'-117'

sandy clay 117'-123' Clay, white, sandy, slightly

micaceous Clay, dark blue-gray T. D.: 130' 123'-130'

Drill Hole No. 275. Elevation 276' Location: SE¼, Sec. 25, T. 9 S., R. 19 W. County, Clark Logged by: G. L. Delevan

0'- 20' Sand, very fine, reddish brown, silty, with traces of iron cemented sand, and white clay

silty, with thin beds of white clay 33'- 36' Clay, orange, slightly micaceous Clay, gray, slightly micaceous with very fine sand and silt Clay, dark brown and black, 36'- 56' 56'- 59' lignitic 59'- 62' 62'- 64' Lignite, black and soft Clay, dark brown Clay, gray-brown, slightly mica-ceous, with very fine sand and thin layers of siderite 64'-100' 100'-130' Clay, gray-brown, slightly micaclay, gray-brown, slightly mica-ceous, with very fine sand, traces of lignite and siderite Clay, gray-brown, slightly mica-ceous, with very fine sand and 130'-150'

Sand, very fine, light brown,

20' 33'

Core Interval 58'-66'

siderite

Recovered: Lost:

58'-59'11" lignite, black, hard, waxy 59'11" - 62'2" lignite, black, soft, friable 62'2'' - 62'4'' clay, dark brown, lignitic, with very fine sand 62'4''.65'1'' clay, gray-brown, slightly micaceous, with very fine sand 65'1"-66' sand, gray, fine-grained, slightly micaceous T. D.: 150'

Drill Hole No. 276. Elevation 247' Location: SW¼, Sec. 29, T. 9 S., R. 18 W. County, Clark Logged by: G. L. Delevan 10/77.

Sand, light reddish brown, fine to very fine

28'- 36' Sand, fine to very fine, tan, with trace of lignite and brown clay

36'- 44' Clay, brown, slightly micaceous

with very fine sand Clay, gray, slightly micaceous, with very fine sand and trace of 44'- 51'

light blue clay
Sand, gray, fine to very fine,
slightly micaceous and lightlic
Clay, gray-brown, silty, slightly 51'- 57'

57'- 64' micaceous

64'- 65' Clay, dark brown, lignitic

65'- 69' 69'- 86' Lignite, black, firm

Clay, gray-brown, silty, slightly micaceous, with very fine sand and trace of lignite

86'- 95' Clay, gray, slightly micaceous, silty

95'-106' Clay, gray-brown, silty, slightly micaceous

106′-109′

Lignite, black, soft Clay, brown, slightly micaceous, 109'-112' with very fine sand

Silt, brown, slightly micaceous Sand, gray, very fine, silty, 112'-124' 124'-131'

with gray clay binder Clay, gray-brown, silty, slightly micaceous, with trace of lignite 131'-150'

Core Interval 63' - 70'

Recovered: 5'7" Lost: 1'5"

45" lignite recovered T. D.: 150

	ARKANSAS LIGNITE INVESTIGATIONS	
Drill Hole No. 277. Elevation 235' Location: NW%, Sec. 32, T. 9 S., R. 18 W. County, Clark Logged by: G. L. Delevan 10/77. 0'- 8' Sand, very fine, silty, reddish brown 8'- 27' Clay, dark brown, with very fine sand and trace of lignite 27'- 70' Sand, fine to very fine, light brown 70'-100' Sand, fine to very fine, light gray, with trace of lignite T. D.: 100'	45'- 49' Clay, gray-brown and dark brown, silty and micaceous Clay, light gray 55'- 76' Clay, light gray 55'- 76' Siltstone, blue-gray, with calcareous cement 79'- 90' Clay, gray, slightly micaceous, with trace of very fine sand 90'- 94' Clay, blue-gray, slightly micaceous, with very fine sand Clay, gray-brown, slightly micaceous, with silt and trace of lignite 105'-107' Clay, blue-gray, silty, micaceus, with very fine sand 107'-109' Clay, dark brown, with trace	9'- 12' Sand, tan, very fine 12'- 14' Gravel 14'- 18' Clay, brown, with very fine sand 18'- 22' Clay, light blue to light brown, micaceous 33'- 46' Clay, gray-brown, silty, micaceous 46'- 47' Clay, dark brown 47'- 48' Lignite, black, soft 48'- 50' Clay, gray-brown, with trace of lignite 50'-117' Clay, gray, silty, micaceous, with very fine sand 117'-119' Siltstone, dark gray 119'-150' Silt, gray-brown, with gray clay,
Drill Hole No. 278. Elevation 230' Location: NW¼, Sec. 4, T. 10 S., R. 18 W. County, Clark Logged by: G. L. Delevan 10/77.	of lignite 109'-115' Clay, brown, silty 115'-115.5' Lignite, black, soft 115.5'-150' Clay, brown, silty, micaceous T. D.: 150'	very fine sand, and trace of lignite T. D.: 150'
0'- 11' Sand and clay, light brown, slightly micaceous 11'- 30' Clay, very dark brown, slightly micaceous and lignitic, with very fine sand 30'- 60' Clay, dark brown, slightly micaceous, silty 60'- 80' Silt, brown, with clay and very fine sand 80'-101' Silt, brown, sandy, with trace of lignite 101'-135' Sand, fine to very fine, light	Drill Hole No. 281. Elevation 222' Location: NE¼, Sec. 10, T. 10 S., R. 18 W. County, Clark Logged by: G. L. Delevan 10/77. 0'- 27' Sand, very fine, light brown, micaceous, w/trace of tan clay 27'-40' Clay, dark brown, micaceous, with trace of lighte 40'- 55' Clay, dark brown, with interbedded, very fine brown sand	Drill Hole No. 284. Elevation 172' Location: NE¼, Sec. 2, T. 10 S., R. 19 W. County, Clark Logged by: G. L. Delevan 10/77. O'- 3' Sand, very fine, light brown 3'- 32' Clay, light tan, micaceous, with very fine sand and ironstone concretions 32'- 45' Clay, blue gray, silty, micaceous 45'- 51' Clay, brown to dark brown 51'- 52' Lignite, black, soft
gray, micaceous, with gray clay binder 135'-150' Clay, gray, slightly micaceous, with very fine sand and trace of lignite T. D.: 150'	55'-105' Clay, brown and dark brown, silty, micaceous, with very fine sand 105'-124' Clay and sand, brown, micaceous, with traces of lignite and lignitic clay 124'-140' Clay, gray, silty, micaceous 140'-150' Clay and sand, light gray, micaceous	52'- 54' Clay, brown 54'- 62' Clay, light blue-gray, micaceous 62'- 78.5' Clay, gray-brown, silty, micaceous 78.5'-79.5' Lignite, black, soft 79.5'- 95' Sand, fine to very fine, gray-brown, with gray-brown, micaceous clay
Drill Hole No. 279. Elevation 196' Location: SW%, Sec. 33, T. 10 S., R. 18 W. County, Clark Logged by: G. L. Delevan 10/77. 0'- 14' Sand, very fine, light brown, slightly micaceous 14'- 18' Gravel, small cobble to large pea size	ceous, with trace of lignite T. D.: 150' Drill Hole No. 282. Elevation 150' Location: SW¼, Sec. 11, T. 10 S., R. 18 W. County, Clark Logged by: G. L. Delevan 10/77. 0'- 7' Sand, very fine, reddish brown	95'- 97' Clay, dark brown, with very fine sand and traces of lignite 97'-112' Clay, light brown, silty, micaceous, with interbedded very fine sand 112'-138' Clay, gray-brown, sandy, micaceous, with stringer of siderite 138'-150' Clay, dark blue-gray T. D.: 150'
18'- 27' Sand, light orange brown, very fine, with trace of pea gravel and coarse sand 27'- 36' Clay, dark brown, micaceous and lignitic 36'- 69.5'Clay, gray, silty, slightly micaceous (19.5'-74' Lignite, black, firm 74'-109.5' Clay, gray-brown, slightly micaceous (19.5'-113' Lignite, black, soft (13'-150' Clay, gray-brown, slightly micaceous (19.5'-150' Clay, gray-brown, slightly micaceous (19.5'-150')	fissile, with silt partings 9'- 31' Clay, dark brown, micaceous, silty, with trace of lignite 31'- 37' Sand, fine, dark brown, with thin, sandy lignite stringers 37'- 53' Clay and sand, brown, micaceous, with trace of sandy lignite 53'- 64' Clay, brown, silty, micaceous 64'- 92' Clay, gray, micaceous 92'- 96' Clay, dark brown to black, lignitic 96'-102' Clay, gray-brown, micaceous 102'-110' Clay, gray, with dark brown	Drill Hole No. 285. Elevation 190' Location: NW¼, Sec. 36, T. 9 S., R. 19 W. County, Clark Logged by: G. L. Delevan 10/77. 0'- 32' Clay, gray to brown, micaceous 32'- 35' Lignite, black, firm 35'- 38' Sand, fine, with gray clay binder 38'- 56' Clay, gray-brown, with very fine sand and traces of lignite 56'- 62' Clay, gray-green, silty, micaceous
Drill Hole No. 280. Elevation 177' Location: SW¼, Sec. 3, T. 10 S., R. 18 W. County, Clark Logged by: G. L. Delevan 10/77. 0'- 6' Sand, very fine, light orange with orange clay 6'- 16' Sand, very fine, light brown, slightly micaceous, with brown clay 16'- 36' Clay, dark brown, slightly lignitic and micaceous, with very fine sand and traces of lignite and pyrite 36'- 38' Lignite, black, firm 38'- 45' Clay, gray-brown, silty, micaceous	to black clay, and trace of lignite 110'-122' Clay, gray, silty, with trace of siderite 122'-128' Clay, brown, with very fine sand and trace of lignite 128'-140' Clay, gray, micaceous, with very fine sand 140'-150' Clay, gray, with thin stringers of lignite T. D.: 150' Drill Hole No. 283. Elevation 134' Location: SW½, Sec. 16, T. 10 S., R. 18 W. County, Clark Logged by: G. L. Delevan 10/77. 0'- 9' Clay, tan, micaceous with very fine sand	62'- 63' Clay, brown, micaceous Clay, gray-green, micaceous, with very fine sand and trace of lignite 79'- 92' Clay, brown, micaceous 92'-101' Clay, gray, micaceous, with very fine sand 101'-108' Sand, gray, fine to very fine, micaceous, with gray clay binder 108'-120' Clay, gray, micaceous, with very fine sand and trace of lignite 120'-138' Clay, gray-brown, silty 138'-144' Sand, fine to very fine, gray, micaceous, with gray clay binder 144'-150' Clay, gray, micaceous, with very fine sand and trace of siderite

	Core Interval 31'-37'	114'-119'	Clay, gray, silty, with trace of dark brown clay		Core Interval 31' - 38'
	Recovered: Lost:	119'-120'	Siltstone, dark gray, hard		Recovered: Lost:
	6' 0'	120′-134′ 134′-137′			3′5″ 3′7″
	31 33'7'' sand, very fine, gray, with gray clay binder		with trace of lignite and very		• ,
	33'7" - 33'11" clay, gray-	137′-150′	fine sand Clay, gray-brown, silty, with		31' - 31'11" clay, black, very lignitic
	brown, with very fine sand		traces of dark brown clay		31'11"- 32'5" clay and lignite,
	33'11" - 34'1" clay, black,		T. D.:150'		black 32'5'' - 34'5'' lignite, black,
	lignitic 34'1'' - 34'4'' lignite and clay,	Drill Hole	No. 288. Elevation 265'		hard
	black and friable	Location:	NW¼, Sec. 29, T. 9 S., R. 18 W.		T. D.: 120'
	34'4" - 37' lignite, black, firm T. D.: 150'	County, C	lark	Pariti I I a I a	N. 004 m.
					No. 291. Elevation 156' SW14, Sec. 28, T. 10 S. R. 18 W.
Drill Hole	No. 286. Elevation 220'	0'- 22'	Clay, light tan, with interbed- ded very fine sand	County, C	lark
Location: County, C	NW¼, Sec. 25, T. 9 S., R. 19 W.	22'- 32'	Clay, brown, silty and mica-		y: G. L. Delevan 11/77.
	y: G. L. Delevan 10/77.	32'- 47'	ceous Sand, very fine, brown, with	0'- 26'	Clay, tan to light brown, mica- ceous, with some iron stain
0'- 18'	Sand, fine to very fine, red		brown clay binder and trace of	26'- 26'3	3" Gravel
	and brown, with clay and iron	47'- 64'	lignite Clay, brown, with interbedded		T. D.: 26'3"
18'- 27'	cemented sand Clay, gray, silty and micaceous		very fine sand and trace of		
27'- 29' 29'- 31'	Lignite, black, soft to firm	64'- 77'	lignite Sand, fine to very fine, light	Drill Hole	No. 292. Elevation 135' NE¼, Sec. 16, T. 10 S., R.18 W.
31'- 33'	Clay, gray, with very fine sand Lignite, black, hard		gray, micaceous, with gray	County, C	lark
33'- 75' 75'- 82'	Clay, gray, silty, micaceous	77'- 86'	clay binder Clay, brown, with fine to very	Logged by	: G. L. Delevan 11/77.
	Clay, gray-brown, silty, mica- ceous	86'- 88'	sand	0'- 10'	Clay and sand, light brown
82'- 90'	Silt and clay, with stringers of	88′-106′	Lignite, black, soft to firm Sand, fine to very fine, gray,	10'- 18'	Sand, medium, gray, with trace of gravel
	very fine sand, lignite, lignitic clay and siderite	106′-111′	micaceous Clay, gray-brown, micaceous	18'- 38'	Gravel, with traces of lignite
90′-110′	Silt and very fine sand, with trace of brown clay	111′-116′	Lignite, black, soft, friable	38′- 50′ 50′- 62′	Sand, coarse, and gravel Sand and silt, brown, with
110′-150′	Clay, gray, micaceous, with	116′-130′	Clay, brown, silty T. D.: 130'		trace of brown clay
	very fine sand			62'- 65'	Lignite, soft, black, with some very fine brown sand
	Core Interval 26'6" - 34'8"	Drill Hole	No. 289. Elevation 155'	65′- 87′	Sand, fine to very fine, brown
	Recovered: Lost: 8'2" 0'	Location:	SE¼, Sec. 17, T. 10 S., R. 18 W.	87'-106'	with thin stringers of lignite Sand, very fine, and silt,
	26'6" - 28'2" clay, gray-	County, C Logged by	: G. L. Delevan 11/77.	106'-150'	brown Sand, fine to coarse, and
	brown, micaceous, silty 28'2'' - 28'3'' clay, dark	0'- 9'		.00 .00	gravel
	brown, lignitic 28'3" - 32'9" lignite, black,	9'- 15'	Clay, gray, with very fine sand Gravel		T. D.: 150'
	Tirm to triable	15'- 20'	Sand and gravel, with very fine sand	Duill Hala	N- 202 -
	32'9" - 33'7" clay, gray- brown, silty	20'- 21'	Lignite, black, soft	Location: N	No. 293. Elevation 136' NW14, Sec. 13,T. 10 S., R. 18 W.
	33'7" - 34'4" lignite, black,	21'- 26'	Clay, gray-brown, with very fine sand and trace of lignite	County, Cl	ark
	soft and friable 34'4" - 34'8" lignite, black,	26'- 28'	Lignite, black, hard	rogged by	: G. L. Delavan 11/77.
	nard	28'- 29' 29'- 35'	Siderite Clay, gray, silty	0'- 14'	
	T. D.: 150'	35'- 41'	Lignite, soft, friable	14'- 20'	dish brown very fine sand Sand, medium, light red-brown
		41'- 48' 48'- 60'	Clay, gray, silty Silt, brown	20'- 30'	Gravel
Location:	No. 287 . Elevation 210' SW¼, Sec. 20, T. 9 S., R. 18 W.	60'- 70'	Sand and silt, very fine, brown	30'- 42' 42'- 60'	Clay, brown, micaceous, sandy Sand, fine to very fine, brown,
County, CI	ark	70'- 95'	Clay, gray, silty, with very fine sand, trace of lignite and	60'- 70'	with dark brown clay binder
Logged by	: G. L. Delevan 10/77.	05/ 100/	brown clay	70′-102′	Clay, brown, with fine sand Clay and silt, brown, with
0'- 2' 2'- 12'	Sand, very fine, light brown	95′-100′ 100′-120′	Clay, gray, silty Clay, gray-brown, with very	102'103'	traces of lignite
	Clay, light brown, micaceous, with very fine sand		fine sand	103'-120'	Lignite, black, soft to firm Clay, light gray, sandy
12'- 32' 32'- 34'	Clay, gray, micaceous, silty		T. D.: 120'	120′-132′	Sand, very fine and light
34'- 38'	Lignite, black, hard, Clay, gray, with lignite	Drill Hole	No. 290. Elevation 165'	132'-135'	gray clay Lignite, black, soft, friable
38'- 40'	stringers up to 6" thick	Location:	NW¼, Sec. 20, T.10 S. R. 18 W	135′-147′	Clay, gray, with trace of siderite
40'- 53'	Lignite, black, soft Clay, light brown, silty	County, Cl	ark	147′-15 0 ′	Clay, gray
53'- 66' 66'- 82'	Clay, gray, silty, micaceous				T. D.: 150'
	Clay, gray-brown, micaceous, silty, with trace of lignite	0'- 14'	Clay, light tan to light orange, micaceous	D.::::	
82'- 91'	Clay, gray, silty and mica- ceous	14'- 36'	Gravel	Location: 9	lo. 294. Elevation 150' SE¼, Sec. 20, T. 10 S.,R.18 W.
91'- 97'	Clay, gray, silty, with dark	36'- 41' 41'- 65'	Lignite, black, firm Sand, very fine, brown, silty,	County, Cla	ark
	brown clay Clay, gray, with interbedded		with traces of siderite		G. L. Delevan 11/77.
-	lignite stringers	65′-100′ 100′-110′	Sand and silt, very fine Silt, brown, with trace of	0′- 18′	Sand, very fine to fine, light
102′-114′	Clay, brown, with trace of lignite	110′-120′	light brown clay		brown Gravel
		110-120	Sand and silt, brown		T. D.: 27'

Drill Hole No. 295. Elevation 137'	95'-101' Clay, brown, silty	20'- 26' Lignite, soft, friable, with inter-
Location NW¼, Sec. 27, T. 10 S., R. 18 W.	101'-102' Siltstone, gray	bedded lignitic clay
County, Clark Logged by: G. L. Delevan 11/77.	102'-120' Clay, gray-brown, micaceous, silty	26'- 32' Clay, gray to brown 32'- 35' Clay, orange
	120'-125' Clay, gray-brown, micaceous	35'- 40' Clay, gray to brown, mica- ceous
0'- 15' Clay, light gray, with very fine sand	Core Interval 50' - 60'	40'- 60' Clay, gray, silty, micaceous, with traces of lignite and
15'- 24' Gravel 24'- 25' Clay, orange, iron stained	Recovered: Lost: 10' 0'	siderite 60'- 70' Clay, light gray, silty, with
25'- 31' Sand, medium to fine, brown, with trace of gravel	50' - 50'10" clay, gray to	stringers of lignite 70'- 80' Clay, gray to brown, with
31'- 40' Clay, brown, silty 40'- 57' Silt, brown, with trace of sand	brown, micaceous and lignitic 50'10'' - 55'4'' lignite, black,	stringers of lignite 80'-100' Clay, brown, silty, with trace
57'- 80' Sand, fine to very fine, with trace of brown clay	firm, with a 3" black lignitic clay stringer	of lignite and siderite 100'-110' Clay, brown
T. D.: 80'	55'4" - 55'6" dark brown clay and very fine sand	T. D.: 110'
	55'6'' - 58'1'' sand, light brown, very fine	
Drill Hole No. 296. Elevation 135'	58'1" - 60' sand, brown, inter-	Drill Hole No. 300. Elevation 240'
Location: SE¼, Sec. 13, T. 10 S., R. 18 W.	bedded with gray clay T. D.: 125'	Location: NW¼, Sec. 22, T. 10 S., R. 19 W. County, Clark
County, Clark Logged by: G. L. Delevan 12/77.		Logged by: G. L. Delevan 12/77.
	Drill Hole No. 298. Elevation 229'	0'- 13' Sand and clay, reddish brown
0'- 17' Clay, brown, with very fine sand	Location: NW¼, Sec. 13, T. 10 S., R. 19 W. County, Clark	13'- 24' Clay, gray to tan, mottled, with very fine sand
17'- 18' Sand, medium to fine, brown with trace of gravel	Logged by: G. L. Delevan 12/77.	24'- 29' Gravel 29'- 30' Clay, brown to dark brown
18'- 34' Gravel 34'- 37' Clay, dark brown, micaceous	0'- 6' Sand, very fine, and dark	30'- 33' Lignite, black, soft
37'- 45' Clay, dark brown, fissile, mica- ceous, lignitic	reddish brown clay	fine sand
45'- 49' Sand, medium to fine, dark brown	13'- 18' Clay, dark gray-brown, mica-	T. D.: 45'
49'- 60' Clay, dark brown, micaceous	ceous, with very fine sand 18'- 22' Lignite, black, hard	
60'-108' Clay, dark brown, micaceous, with very fine sand and stringers	22'- 24' Clay and very fine gray sand 24'- 30' Sand and gray clay	Drill Hole No. 301. Elevation 255' Location: NE%, Sec. 18, T. 10 S., R. 19 W.
of siderite 108' 120' Clay, dark brown, micaceous,	30'- 39' Clay, gray, micaceous 39'- 48' Clay, greenish gray, trace of	County, Clark Logged by: G. L. Delevan 12/77.
sandy 120'-133' Clay, dark brown, with very	lignite 48'- 54' Clay, gray-brown, micaceous,	Logged by. G. E. Belevan
very fine sand and trace of lignite	with very fine sand	0'- 16' Sand, fine to very fine,
133'-142' Clay, light gray, with trace of very fine sand and siderite	with very fine sand and trace	reddish brown, with brown clay binder
142'-150' Silt, light gray, with very fine	of lignite 69'- 70' Clay, brown, and lignite	16'- 23' Sand and clay, light tan to orange brown mottled, with
sand T. D.: 150'	70'- 83' Clay, gray-brown 83'-85'6'' Lignite, black, hard	iron cemented sand 23'- 26' Clay, orange and gray, mica-
	85'6"-102" Clay, gray, micaceous, with	ceous, with very fine sand
	very fine sand and stringers of siderite and lignite	26'- 39' Clay, gray, micaceous, with very fine sand
Drill Hole No. 297. Elevation 190'	102'-107' Clay, greenish gray 107'-114' Clay, brown, micaceous, with	39'- 52' Clay, gray, silty, micaceous, with trace of lignite
Location: SW¼, Sec. 13, T. 10 S., R. 19 W. County, Clark	very fine sand 114'-130' Clay, greenish gray	52'- 66' Clay, gray, silty 66'-67'6'' Lignite, black, firm
Logged by: G. L. Delevan 12/77.	130'-150' Clay, gray to brown	67'6''-80' Clay, gray, with very fine
0/ 14/ 0 - 1	Core Interval 18'6" - 23'	sand and trace of lignite 80'-115' Clay, gray to brown, mica-
0'- 14' Sand, fine, mottled red and brown, with iron cemented	Recovered: Lost:	ceous, silty with very fine sand
silty sand 14'- 20' Clay, white, sandy	4'6" 0'	T. D.: 115'
20'- 27' Clay and very fine sand, white	18'6'' - 22'4'' lignite, soft to hard, with silt partings	
27'- 39' Clay, light gray, with fine sand	22'4" - 23' clay, dark brown, with very fine sand	Drill Hole No. 302. Elevation 255' Location: NE%, Sec. 20, T. 10 S., R. 19 W.
39'- 47' Clay, light gray, with very fine sand	T. D.: 150'	County, Clark
47'- 48' Clay, brown, with very fine sand		Logged by: G. L. Delevan 12/77.
48'- 51' Clay, dark brown 51'- 55' Lignite, black, firm, with some	Drill Hole No. 299. Elevation 246'	0'- 25' Clay, light brown to gray, trace of gravel
lignitic clay	Location: SE¼, Sec. 15, T. 10 S., R. 19 W. County, Clark	25'- 50' Clay, dark gray to gray, silty, with very fine sand
56'- 60' Clay, dark gray	Logged by: G. L. Delevan 12/77.	50'- 70' Clay, dark gray, silty 70'- 80' Sand, fine to very fine, gray,
60'- 68' Clay, light gray, with very fine sand and trace of lignite	0'- 11' Clay, tan, with iron stained	with gray clay binder 80'-100' Sand, fine to very fine, and
68'- 75' Clay, gray, with lignite stringers	sandstone 11'- 19' Gravel	gray clay
75'- 95' Clay, gray-brown, micaceous, with trace of lignite	19'- 20' Clay, dark brown, very lignitic	100'-120' Sand, fine to very fine, with gray clay and trace of lignite T. D.: 120'

		ARKANSAS LIGNITE INVESTIGATIONS	
Location: County: H	No. 303. Elevation 360' SW¼, Sec. 7, T. 13 S., R. 23 W. lempstead :: G. L. Delavan 2/78.	17'- 19½' Clay, dark brown to black, lignitic 19½'-20' Lignite, black	34%'-36' Clay, gray-brown, with lignite stringers 36' 47' Clay, gray-brown, with very fine
0'- 17'		20' 21''. Clay, dark brown 21''24' Lignite, black, firm 24' 28' Clay, dark brown to brown	sand 47'- 55' Sand, very fine, gray, slightly micaceous, with trace of siderite
17'- 32'	silty Clay, gray-brown, carbonaceous,	28'- 35' Clay, gray-brown 35'- 43' Clay, gray-brown, with inter-	55'- 73' Clay, gray-brown, silty 73'- 74½' Lignite, black, firm
	slightly micaceous, with very fine sand	bedded fine gray, micaceous sand	74½'-82' Clay, dark gray-brown 82'- 95' Clay, light gray and greenish-
32'- 38'	Clay, gray-brown, carbonaceous, fissile, with very fine sand	43'- 69' Clay, gray, with trace of brown clay	gray 95'-110' Clay, dark blue-gray
38'- 43'	Clay, gray-brown, and very fine sand	69'- 72' Clay, dark brown to black 72'- 72½' Lignite	T. D.: 110'
43′- 70′	Clay, gray-brown, slightly mica- ceous, fissile, with very fine sand	72½'-77' Sand, gray, with gray clay 77'- 93' Clay, gray-brown, with traces	Drill Hole No. 308, Elevation 388'
70′- 75′	Clay, slightly micaceous, gray- brown, with very fine sand	of gray sand 93'-113½' Sand and gray clay 113½'-115' Lignite, black, soft	Location: NW¼, Sec. 35, T. 13 S., R. 23 W. County: Nevada Logged by: G. L. Delavan 3/78.
75′-100′	Clay, dark gray T. D.: 100'	115'-130' Clay, gray-brown 130'-130½' Lignite, black, soft	0'- 9' Sand and clay, reddish brown,
		130½'-135' Clay, gray-brown 135'-147' Clay, white to blue-gray	fine, Iron stained 9'- 15' Clay, light tan, slightly mica-
Drill Hole	No. 304. Elevation 288'	147'-150' Clay, blue-gray	ceous, with very fine sand 15'- 27' Clay, dark brown, micaceous,
County: H		Core Interval: 20' - 27'3''	with very fine sand 27'- 40' Clay, brown, with trace of sider-
0'- 8'	Clay, gray, with very fine sand	Recovered: Lost: 7'3'' 0	ite 40'- 43' Clay and sand, very fine, dark
8'- 23'	Clay, gray, with very fine sand Clay, gray, slightly micaceous with very fine sand and trace of lignite	20' - 20'5'' lignite, black, firm 20'5'' - 20'7'' clay, dark brown 20'7'' - 21'4'' clay, gray-brown	brown, slightly micaceous 43'- 60' Clay, brown, silty, micaceous 60'- 73' Sand, very fine, brown, with
23'- 25' 25'- 27½		20 / - 214 clay, gray-brown 21'4" - 21'7" clay, dark brown to black	interbedded dark brown clay 73'- 81' Clay, brown, micaceous, with
27½'-29' 29'- 3 2 '	Lignite, black, firm Clay, gray-brown	21'7" - 23'9" lignite 23'9" - 23'11" clay, dark	very fine sand 81'- 89' Sand, fine, brown, micaceous, with trace of brown clay
32′- 34½ 34½′-37′	Lignite, black, soft to firm Clay, gray brown, slightly mica-	brown to black 23'11" - 24'3" clay, gray-brown	89'-114' Clay, brown, silty, micaceous 114'-146' Sand, fine, brown, micaceous
37'- 50' 50'- 67'	ceous with very fine sand Clay, gray-brown Clay, gray-brown, with inter- bedded very fine sand	24'3'' - 26'4'' clay, brown to dark brown with very fine sand 26'4'' - 27'3'' sand and clay, gray-brown, very fine	with trace of lignite 146'-150' Clay, tan, with fine sand T. D.: 150'
67′- 7 0′ 70′- 9 0′	Clay, gray, with very fine sand Clay, gray-brown, slightly mica-	T. D.: 150'	Drill Hole No. 309, Elevation 300'
90'- 97' 97'-1 01 '	ceous with very fine sand Clay, gray-brown	Drill Hole No. 306. Elevation 375'	Location: NE%, Sec. 1, T. 14 S., R. 23 W. County: Nevada
101′-105′	Clay, brown to dark brown, with trace of lignite and siderite Clay, gray, with interbedded	Location: SE¼, Sec. 18, T. 13 S., R. 23 W. County: Hempstead	Logged by: G. L. Delavan 3/78.
105′-120′	very fine sand Clay, gray, with trace of lignite	Logged by: G. L. Delavan 3/78. 0'- 6' Clay, reddish brown, with very	0'- 9' Clay, reddish brown, with fine sand 9'- 19' Clay, light brown, micaceous
120′-130′ 130′-15 0 ′	Clay, gray, with very fine sand Clay, gray-brown, slightly sandy	fine sand 6'- 15' Clay, white to tan	9'- 19' Clay, light brown, micaceous with fine sand 19'- 20' Clay, dark brown to black,
	with trace of lignite	15'- 27' Clay, gray-brown, slightly mica- ceous, silty	with dark brown iron stained sand
	Core Interval 27'6" - 37'6" Recovered: Lost:	27'- 28' Clay, dark brown, lignitic 28'- 29' Lignite, black, firm	20'- 85' Sand, fine to very fine, brown, micaceous, with traces of clay
	5'3'' 4'9''	29'- 29½' Clay, dark brown 29½'-34' Clay, gray 34'- 41' Clay, gray-brown	and stringers of siderite 85'- 97' Clay, dark brown, with very
	27'6" - 32'3" no recovery 32'3" - 33'9" clay, gray, slight-	41'- 60' Clay, gray, with very fine sand	fine sand 97'-130' Clay, brown, silty, micaceous 130'-150' Clay and sand, brown very
	ly micaceous 33'9" - 33'11" gray clay and	60'- 64' Sand, gray, very fine 64'- 90' Clay, gray-brown, with very	130'-150' Clay and sand, brown, very fine interbedded T. D.: 150'
	fine sand 33'11'' - 34'2'' clay, dark	fine sand and traces of siderite 90'-101' Clay, gray, with fine sand	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
	brown, and lignite stringers 34'2" - 36'9" lignite, black, firm to soft, slightly slity 36'9" - 37'6" sand, fine, gray,	101'-110' Clay, dark blue-gray T. D.: 110'	Drill Hole No. 310. Elevation 310' Location: SE¼, Sec. 35, T. 13 S., R. 23 W. County: Nevada
	slightly micaceous	Drill Hole No. 307. Elevation 325' Location: SE¼, Sec. 19, T. 13 S., R. 23 W.	Logged by: G. L. Delevan 3/78. 0'- 5' Clay and sand, reddish brown
	T. D.: 150'	County: Hempstead Logged by: G. L. Delavan 3/78.	5'- 12' Clay, white, micaceous, with fine sand
Drill Hole N Location:	No. 305. Elevation 320' SE¼, Sec. 29, T. 13 S., R. 23 W.	0'- 17' Clay, reddish brown 17'- 21' Clay, dark brown	12'- 18' Clay, dark brown, slightly mica- ceous, with very fine sand 18'- 22' Clay, brown
County: He	empstead : G. L. Delavan 3/78.	21'- 21½' Lignite 21½-28' Clay, dark brown, with trace	18'- 22' Clay, brown 22'- 36' Clay, dark brown, silty, mica- ceous
0'- 11'	Sand and clay, light orange to	of lignite 28'- 33½' Sand, fine to very fine, with	36'- 88' Sand, fine to very fine, light brown, slightly micaceous, with
11'- 17'	red brown, fine to very fine Clay, tan, with iron stain	gray-brown clay stringers 33½'-34½' Lignite, black, firm	thin stringers of carbonaceous clay and lignite

88'-90' Clay and sand, brown 90'- 921' Lignite, black, firm	Drill Hole No. 314. Elevation 400' Location: SW14. Sec. 27, T. 13 S., R. 22 W.	79'-100' Clay, brown, micaceous, with very fine sand and trace of sider
92½'-94' Clay, dark brown to black with very fine sand	County: Nevada Logged by: G. L. Delevan 3/78,	ite 100'-100½' Lignite, soft
94'-117' Clay, brown, slightly micaceous with fine sand	0'- 10' Sand, medium to fine, reddish	100½'-127' Clay, dark brown, and gray fine sand
117'-150' Sand, fine, greenish-gray, slight- ly micaceous, glauconitic T. D.: 150'	brown 10'- 21' Sand, very fine, reddish brown, with tan clay	127'-130' Clay, dark brown 130'-150' Clay, gray-brown, slightly mica- ceous
	21'- 40' Clay, brown to dark brown, micaceous with very fine sand	Core Interval 58' - 66'
Drill Hole No. 311. Elevation 345'	40'- 64' Clay, brown, micaceous, with very fine sand	Recovered: Lost:
Location: SE¼, Sec. 6, T. 14 S., R. 22 W. County: Nevada	64'- 67' Clay, gray and brown, mica- ceous	4'11" 3'1"
Logged by: G. L. Delavan 3/78.	67'-110' Clay, brown, slightly micaceous with very fine sand	58' - 58'4'' lignite, black, hard 58'4'' - 61'5'' lignite, black, soft
0'- 4' Clay, reddish brown	110'-120' Clay and sand, very fine, brown, micaceous	61'5'' - 62'1'' clay, brown, with very fine sand
4'- 12' Clay, tan, with very fine sand	120'-130' Clay, brown, micaceous, with very fine sand	62'1'' - 62'11'' lignite, black, soft
12'- 65' Clay, brown to dark brown, silty, micaceous, with very fine sand	130'-150' Sand, very fine, brown, mica- ceous, with brown clay T. D.: 150'	62'11'' - 66' no recovery Core barrel spread, drill seemed to be in lignite at bottom
65'- 73' Clay, brown, silty, micaceous 73'- 83' Clay, dark brown, with very	Drill Hole No. 315. Elevation 326'	Core Interval 66' - 74'
fine sand 83'- 92' Sand, fine, dark brown, mica-	Location: SW¼, Sec. 22, T. 13 S., R. 22 W. County: Nevada	Recovered: Lost
ceous and carbonaceous 92'-139' Clay, dark brown, with very	Logged by: G. L. Delevan 3/78.	5′ 3′
fine sand, slightly micaceous and trace of siderite	0'- 30' Sand, fine to very fine, mica- ceous, brown	66' - 66'4'' clay, brown to dark brown, slightly micaceous
139'-150' Sand, dark brown, fine, mica- ceous	30'- 35' Sand and clay, gray-brown, very fine, micaceous	66'4'' - 67'4'' lignite, black, hard
T. D.: 150'	35'- 45' Clay, dark brown, with very fine sand	67'4'' - 70'7'' lignite, black, soft 70'-7'' - 71' - clay, dark brown
	45'- 60' Clay, dark brown, micaceous 60'-100' Clay, brown to dark brown,	71' - 74' no recovery, probably sand. Core barrel did not jam
Drill Hole No. 312. Elevation 330' Location: SE¼. Sec. 32, T. 13 S., R. 22 W.	micaceous, with very fine sand 100'-150' Sand, fine to very fine, brown,	T. D.: 150'
County: Nevada Logged by G. L. Delevan 3/78.	slightly micaceous, with traces of brown clay	Drill Hole No. 318. Elevation 360'
	T. D.: 150'	Location: SW¼, Sec. 8, T. 13 S., R. 22 W County: Nevada
0'- 23' Clay, tan to reddish brown, with very fine sand	Drill Hole No. 316. Elevation 340' Location: SE¼, Sec. 16, T. 13 S., R. 22 W.	Logged by: G. L. Delevan 3/78
23'- 45' Clay, brown to dark brown, lignitic, micaceous, with very	County: Nevada Logged by: G. L. Delevan 3/78.	0'- 17' Clay, tan, slightly micaceous with interbedded very fine sand
fine sand 45'- 78' Sand, fine to very fine, brown,		17'- 41' Clay, gray-brown, slightly mica
78'-130' Clay and sand, fine to very fine, dark brown, micaceous	micaceous, with stringers of	ceous, with trace of fine sand 41'- 42'' Lignite, black firm
130'-150' Sand, very fine, brown, slightly	brown clay 25'- 37' Sand, light brown, very fine	42½'-65' Clay, light gray-brown, mica ceous, with trace of fine sand
micaceous T. D.: 150 '	micaceous 37'- 48' Clay, gray-brown, micaceous	65'- 66' Lignite, black, firm 66'- 72' Clay, light gray-brown, mica
	48'-125' Clay, brown, slightly micaceous with very fine sand and silt	ceous, with siderite stringer 72'-110' Clay, light brown, slightly mica
Drill Hole No. 313. Elevation 360'	125'-135' Clay, brown, slightly micaceous, silty	ceous, with very fine sand and stringers of lignite and siderite
Location: NW¼, Sec. 33, T. 13 S., R. 22 W. County: Nevada	135'-150' Sand, fine to very fine, slightly micaceous with trace of brown	110'-125' Clay, gray-brown, silty, mica
Logged by: G. L. Delevan 3/78.	clay T. D.: 150'	ceous 125'-130' Clay, light blue-gray, micaceous 130'-150' Clay, gray-brown, silty, mica
0'- 8' Clay, light gray, with very fine	Drill Hole No. 317. Elevation 326'	ceous, with siderite stringer T. D.: 150'
sand 8'- 15' Sand, very fine, light brown,	Location: NE¼, Sec. 17, T. 13 S., R. 22 W. County: Nevada	
slightly micaceous 15'- 60' Clay, dark brown, slightly	Logged by: G. L. Delevan 3/78.	Drill Hole No. 319. Elevation 380' Location: SW¼, Sec. 12, T. 13 S., R. 23 W
micaceous with very fine sand and traces of lignite 60'- 72' Clay, dark brown, with very fine	0'- 22' Sand, fine to very fine, orange- brown, with stringers of tan clay 22'- 25' Clay, gray-brown	County: Nevada Logged by: G. L. Delevan 3/78
sand and stringer of siderite	25'- 58' Sand, fine, light gray, with gray	0'- 8' Clay, reddish orange, with very
carbonaceous, micaceous, with	clay binder and trace of lignite 58'- 60½' Lignite, black and hard	fine sand 8'- 13' Clay, buff, with iron stain and
stringer of siderite 93'-110' Clay, dark brown, silty, mica-	60½-64′ Clay, gray-brown, with very fine sand	very fine sand 13'- 21' Clay, buff, micaceous, with very
ceous 110'-132' Sand and clay, very fine, brown,	64'- 67' Lignite, black, soft 67'- 68' Clay, gray-brown	fine sand 21'- 46' Sand, light reddish brown, very
slightly micaceous 132'-150' Clay, brown, with very fine	68'- 71' Lignite, black, firm 71'- 73' Clay, dark brown	fine, micaceous, with gray-
sand T. D.: 150'	73'- 79' Sand, fine, light brown, with	brown clay 46'- 69' Clay, gray, micaceous, with very
	trace of brown micaceous clay	fine sand

69′ 73′ 73′ 83′	Clay, brown to dark brown	70′- 82′		Drill Hole	No. 326. Elevation 370'
83' 89'	Clay, gray, with trace of lignite Sand, very fine, gray, micaceous	82'- 82½ 82½'- 89	' Lignite ' Clay, brown, silty and mica-	Location: County:	SE¼, Sec. 19, T. 13 S., R. 21 W.
	carbonaceous, with gray clay		ceous		y: O. A. Wise 3/78.
89'- 95'	binder Clay, dark brown to brown,	89'- 93' 93'-102'	Sand, very fine, gray		
	with trace of lignite	102'-107'	Clay, brown, micaceous, silty Clay, black, lignitic	0'- 5' 5'- 25'	
95′-102′	Sand, very fine, gray, mica- ceous	107′-127′	Clay, bown, with trace of sider-	25'- 45'	Clay, green, sandy
102′-116′	Clay and sand, very fine, gray,	127'-150'	ite Clay, dark blue-gray, with	45′- 85 ′ 85′-110′	Clay, dark brown Clay, green, with lignite partings
116/1101/	slightly micaceous		stringers of siderite	110'-150'	
118½′-130	' Lignite, black, firm ' Clay, gray-brown, with very		T. D. 150'		T. D.: 150'
	fine sand			Drill Hole	No. 327. Elevation 390'
130′-134′	Clay and sand, very fine, mica- ceous, gray		No. 323. Elevation 405' NW¼, Sec. 23, T. 13 S., R. 22 W.	Location:	SE¼, Sec. 20, T. 13 S., R. 21 W.
134′-138′	Clay, gray	County: N		County: N Logged by	vevada y: O. A. Wise 3/78.
138′-140′ 140′-142′	Clay, dark brown to black Lignite, black, soft	Logged b	y: O. A. Wise 3/78.		
142'-150'	Clay, dark gray-brown, mica-	0'- 5'		0'- 10' 10'- 50'	Surface clay and sand Clay, brown, stiff
	ceous T. D.: 150'	5'- 20'	Sand, fine, brown, with red	50'- 75'	Clay, brown, w/lignite partings
	1. 5 100	20'- 70'	clay Sand, brown, fine, with dark	75′-100′ 100′-135′	Ciay, gray-brown, plastic Clay, brown, plastic
Drill Hole	No. 320. Elevation 362'	70/ 404/	gray clay	135′-150′	
Location:	NW¼, Sec. 11, T. 13 S., R. 23 W.	70′-104′	Clay, brown to dark gray, plastic		T. D.: 150'
County: N	evada	104′-120′	Sand, very fine, dark gray,	Drill Hole	No. 328. Elevation 350'
Logged by	: G. L. Delavan 3/78.	120'-140'	with lignite streaks Clay, gray, brown, stiff	Location:	NE¼, Sec. 28, T. 13 S., R. 21 W.
0'- 38' 38'- 42'	Sand, reddish brown	140'-150'	Clay, brown, sandy, with lignite	County: N	y: O. A. Wise 3/78.
38 - 42	Lignite, black, soft, with black clay		fragments in clay T. D.: 150'		
42'- 52' 52'- 53'	Clay, brown to dark brown		1. D.: 100	0'- 5' 5'- 15'	Surface clay, white Clay, black, stiff
53'- 5 8 '	Lignite, black, firm Clay, white	Drill Hole	No. 224 El	15'- 25'	Clay, black, plastic
58'- 60'	Clay, dark blue-gray	Location:	No. 324. Elevation 390' SW¼, Sec. 24, T. 13 S., R. 22 W.	25'- 50' 50'- 6 5'	Clay, black, sandy, plastic Clay, greenish black, sandy,
60'- 8 0 '	Clay, dark blue-gray, with sider- ite stringers	County: N	levada		plastic
		Logged by	: O. A. Wise 3/78.	65'- 90' 90'-125'	Clay, brown, plastic
	Core Interval 35' - 43'	0 ′- 5′		125'-150'	Clay, black, plastic Sand, fine, glauconitic, with
	Recovered: Lost:	5'- 25' 25'- 35'	Clay, dark gray, waxy Clay, white, silty, with fine		black plastic clay
	7'5" 7"		sand		T. D.: 150'
	35' - 381/2' lignite	35′- 40′ 40′-100′	Lignite and clay		No. 329. Elevation 330'
	38½'-42'5" clay, gray, waxy.	100'-150'	Clay, dark gray, waxy Clay and sand, gray, very fine,	County: N	SW¼, Sec. 26, T. 13 S., R. 21 W.
	with scattered chunks of lignite 42'5" - 43' no recovery		glauconitic		/: O. A. Wise 3/78.
	T. D.: 80'			0'- 10'	Surface clay, white
			Core Interval 35' - 45'	10'- 20'	Clay, light gray, stiff
D			Recovered: Lost:	20'- 30' 30'- 40'	Sand, fine, with gray clay
Location:	No. 321. Elevation 341' SW¼, Sec. 3, T. 13 S., R. 23 W.		3' 7'	40'- 75'	Clay, black, stiff Sand, fine, with green clay
County: No	evada		35' - 45' recovered 11/2' gray clay	751 051	and trace of lignite
Logged by:	G. L. Delavan 3/78.		and 1½' gray sand with clay	75'- 95'	Clay, green, stiff, glauconitic, silty
0'- 13'	Clay, gray-brown, with Iron		partings	95′-110′	Sand, very fine, green, with
13'- 17'	stain		T. D.: 150'	110′-135′	green plastic clay Clay, green, plastic, glauconitic
17'- 23'	Clay, buff to light brown Clay, dark gray			135'-136'	Siderite
23'- 5 0'	Clay, dark blue-gray	Drill Hole	No. 325. Elevation 395'		T. D.: 136'
	T. D.: 50'	Location: County: N	SE¼, Sec. 24, T. 13 S., R. 22, W.	Drill Hole	No. 330. Elevation 300'
			: O. A. Wise 3/78.	Location: County: N	SW¼, Sec 25, T. 13 S., R. 21 W.
Drill Hole N	No. 322. Elevation 319'		5,75.		G. L. Delavan 4/78.
Location: S	SW¼, Sec. 7, T. 13 S. R. 22 W	0'- 10'	Sand and clay, white, plastic	0'- 5'	
County: Ne	G. L. Delavan 3/78.	10'- 20'	Clay, white, plastic	5'- 45'	Clay, reddish brown,w/fine sand Sand, very fine, white to light
	-,,-,	20'- 30' 30'- 40'	Clay, brown, stiff Clay, brown, stiff, with sand		tan, with traces of brown and
0'- 11'	Sand, fine, light brown, with traces of brown clay and lignite	40'- 70'	rine sand and brown clay inter-	45'- 53'	white clay Sand, fine, gray, with traces of
11'- 24'	Clay, light brown to buff	7 0 ′- 85′	bedded Sand, fine, brown	53'- 60'	brown clay
24'- 33'	Clay, gray, slightly micaceous with very fine sand and siderite	85'-110'	Clay, brown, with lignite part-	55 - 60	Clay, gray-brown, micaceous with very fine sand
22/ 04/	stringers	110′-115′	ings Sand, brown, fine	60'- 90'	Sand, very fine, light gray, with
33'- 34' 34'- 37'	Lignite, black, firm Clay, dark brown	115′-130′	Clay, brown, with fine sand	90′-105′	trace of brown clay Sand and clay, light brown,
37'- 70'	Clay, gray, micaceous with	130′-150′	and lignite partings Sand, brown, fine, with clay		micaceous
	very fine sand and siderite stringers		partings	105′-150′	Clay, brown, silty, micaceous, with very fine sand
	* *		T. D.: 150'		T. D.: 150'

Logardy Newsda Congress of the		ARKANSAS LIGNITE INVESTIGATIONS	
sand, slightly reactions and inforceous and microsovery fine, slightly microsovery slightly microsovery fine, slightly microsovery slightly microsovery slightly microsovery fine, slightly microsovery slightly microsovery slightly slightly microsovery slightly slightly microsovery slightly slightly microsovery slightly slightl	Location: SE¼, Sec. 30, T. 13 S., R. 20 W.	slightly micaceous	
stiphtly micaceous gray brown, sightly micaceous gray from g		sand, slightly carbonaceous and	fine, slightly micaceous
slightly sitty, micaecous systems, fine, slightly micaecous, every fine, slightly micaecous, e	brown, fine to very fine, slightly micaceous	slightly micaceous	Drill Hole No. 338. Elevation 297'
very fine, slightly micaecous, saity, slightly micaecous, saity, slightly micaecous, saity, slightly micaecous, saity, slightly micaecous, servery fine, sand, slightly micaecous, servery fine, sand, slightly micaecous, servery fine, sand, slightly micaecous, servery fine, slightly micaecous, servery fine, sand, slightly micaecous, servery fine, slightly micaecous, servery fine, sand, slightly micaecous, servery fine, slightly micaec	slightly silty, micaceous	70'- 77' Clay, gray, slightly micaceous	
silty, slightly micaceous fine to very fine, slightly micaceous fine to very fine, slightly micaceous fine to very fine sand clay, gray to brown, silty, slightly micaceous fine to very fine sand clay, gray to gray-brown, slightly micaceous fine to very fine sand clay, gray to gray-brown, slightly micaceous fine to very fine sand clay, gray to gray-brown, slightly micaceous fine sand, slightly micaceous fine, slightly micaceous fine sand, slightly micaceous fine, slightly micaceous slightly micaceous fine, slightly micaceous fine,	very fine, slightly micaceous	silty, slightly micaceous, very	
Drill Hole No. 332. Elevation 320' Location: SE4, Sec. 29, T. 13 S., R. 20 W. County: Nevada Logged by: G. L. Delevan 4/8. 0' 24' Sand, light reddish brown, fine, stringers of tan clay Clay, fight and, with trace of lightic raceous, slightly micaceous with trace of lightic raceous, slightly micaceous, with trace of lightly micaceous, with trace of lightly micaceous, slightly micaceous, slightly micaceous, slightly micaceous, slightly micaceous, with trace of lightly micaceous, with trace of lightly micaceous, slightly micaceous, with trace of lightly micaceous, with trace of lightly micaceous, slightly micaceous, with traceous,	116'-150' Sand and clay, gray to brown, fine to very fine, slightly mica-	silty, slightly micaceous	12'- 41' Clay, brown, very fine sand, silty, slightly micaceous 41'- 45' Clay, gray
Drill Hole No. 332. Elevation 320' coaction: SEK, Sec. 35, T. 13 S., R. 20 W. Country: Newada Loged by: G. L. Delevan 4/78. Country: Newada Loged by: G. L. Dele		Drill Hole No. 335. Elevation 310'	46'- 67' Clay, gray, with sand, fine
County: Nexada Clay, gray-brown, very fine sand and silt slightly micaceous shightly shipper	Location: SE¼, Sec. 29, T. 13 S., R. 20 W.	Location: SE¼, Sec. 35, T. 13 S., R. 20 W. County: Nevada	67'- 75' Sand and clay, gray, very fine 75'-150' Clay, gray, very fine sand, silty, slightly micaceous
slightly micaceous with thin stringers of fan clay 24'- 28' Clay, light tan, with trace of figure 24'- 28' Clay, light tan, with trace of figure 24'- 28' Clay, light tan, with trace of figure 24'- 28' Clay, gray-brown, very fine 32'- 45' Clay, prown, slightly micaceous 32'- 45' Clay, gray-brown, with very fine sand, slightly micaceous 32'- 45' Clay, prown, with very fine sand, slightly micaceous 36'- 88' Clay, gray-brown, with very fine sand, slightly micaceous 36'- 88' Clay, gray-brown, with very fine sand and slit, slightly micaceous 39'-110' Clay, brown, very fine sand and slit, slightly micaceous 39'-110' Clay, gray-brown, very fine sand and slit, slightly micaceous 39'-110' Clay, gray-brown, very fine sand and slit, slightly micaceous 39'-110' Clay, gray-brown, very fine sand and slit, slightly micaceous 39'-110' Clay, gray-brown, very fine sand and slit, slightly micaceous 39'-110' Clay, gray-brown, very fine sand and slit, slightly micaceous 39'-110' Clay, gray-brown, very fine sand and slit, slightly micaceous 39'-110' Clay, gray-brown, very fine sand and slit, slightly micaceous 32'-50' Clay, gray-brown, very fine sand slity, slightly micaceous 32'-50' Clay, gray-brown, very fine sand and slity, slightly micaceous 31'-35'-150' Sand, light brown, fine to very fine, slightly micaceous 32'-50' Clay, gray-brown, very fine sand and slity, slightly micaceous 32'-50' Clay, gray-brown, very fine sand and slit, slightly micaceous 32'-50' Clay, gray-brown, very fine sand and slit, slightly micaceous 32'-50' Clay, gray-brown, very fine sand and slity, slightly micaceous 32'-50' Clay, gray-brown, very fine sand and slity, slightly micaceous 32'-50' Clay, gray-brown, very fine sand and slity, slightly micaceous 32'-50' Clay, gray-brown, very fine sand and slity, slightly micaceous 32'-50' Clay, gray-brown, very fine sand and slity, slightly micaceous 32'-50' Clay, gray-brown, very fine sand and clay, light sprown, slity, slightly micaceous 32'-50' Clay, gray-brown, very fine sand and clay, light sprown, slity, slig		2'- 10' Clay, light brown to tan	
yery fine sand Clay, gray-brown, very fine sand, slightly micaceous (1-24) (1-2	slightly micaceous with thin stringers of tan clay	43'- 49' Sand, gray, fine to very fine, with trace of lignite	Location: NE¼, Sec. 3, T. 14 S., R. 19 W. County: Ouachita
sand, slightly micaceous 32'- 45' Clay, brown, slightly micaceous 45'- 61' Clay, brown, slightly micaceous 45'- 61' Clay, brown, slightly micaceous 45'- 61' Clay, brown, with very fine sand, slightly micaceous 76'- 88' Clay, gray-brown, with very fine sand as slightly micaceous 76'- 88' Clay, gray-brown, with very fine sand and slit, 88'- 93' Clay, brown, wery fine sand and slit 88'- 93' Clay, brown, wery fine sand and slit 88'- 93' Clay, brown, wery fine sand and slit 10'-135' Clay, gray-brown, wery fine sand and slit, slightly micaceous 10'-135' Sand, gray, very fine, slightly micaceous 10'-135' Clay, gray, very fine, slightly micaceous 10'-136' Clay, gray, very fine, slightly micaceous 10'-136' Sand, gray, very fine, slightly micaceous 10'-136' Sand, gray, very fine, slightly micaceous 10'-136' Sand, light prevails, slightly micace	very fine sand	55'- 55'6" Lignite, black, soft to firm	
45'- 61' Clay, gray-brown, gray fine sand, slightly micaceous of very fine sand, slightly micaceous of very fine sand and slit, slightly micaceous slightly slity sand and slit, slightly micaceous slightly slity incaceous slightly micaceous slightly slity incaceous slightly micaceous slightly	sand, slightly micaceous 32'- 45' Clay, brown, slightly carbon-	61'- 78' Clay, gray-brown, very fine	trace of white clay
61' 76' Clay, brown, with very fine sand, slightly micaceous clay, gray-brown, with trace of lightly micaceous clay, gray-brown, with trace of lightly micaceous clay, gray-brown, very fine sightly micaceous clay, gray-brown, very fine sightly micaceous clay, gray, slightly micaceous clay, gray, very fine shightly micaceous clay, gray, slightly micaceous clay, gray, slightly micaceous clay, gray, slightly micaceous clay, gray, very fine shightly micaceous clay, gray, very fine shightly micaceous clay, gray brown, slightly micaceous clay, gray-brown, very fine shightly micaceous clay, gray-brown, very fine clay clay, gray-brown, very fine, clay clay, gray-brown, very fine, clay clay, gray-brown, very fine, glightly micaceous clay, gray-brown, slightly micaceous clay clay clay clay clay clay clay clay	45'- 61' Clay, gray-brown, with very	trace of gray clay	slightly micaceous 46'- 47' Lignite and clay, black, soft
76° 88′ Clay, gray-brown, with trace of very fine sand and silt. 88° 93′ Clay, brown, very fine sand and silt. slightly micaceous clay, gray-brown, very fine sand and silt, slightly micaceous slightly silty silty silty silty silty silty silty silty micaceous, with trace of lignite T. D.: 150′ Clay, gray-brown, very fine sand silt, slightly micaceous, with trace of lignite T. D.: 150′ Clay, gray-brown, very fine sand and silt, slightly micaceous, slightly silty sil	61'- 76' Clay, brown, with very fine		dark brown clay, slightly mica-
Logged by: G. L. Delevan 4/78. 10°-135' Sand, gray, very fine, slightly micaceous, slightly micaceous, with trace of lignite T. D.: 150' Sand, gray, very fine, slightly micaceous, with trace of lignite T. D.: 150' Sand, light reddish-brown, very fine, clay Sand, light reddish-brown, very fine, clay Sand, light prown, very fine, clay Sand, light prown, very fine, slightly micaceous Sand, light prown, very fine, clay Sand, light prown, very fine, slightly micaceous Sand, light prown, very fine, clay Sand, light prown, very fine, slightly micaceous Sand, slity, slightly micaceous Sand, light prown, very fine, slightly micaceous Sand, slity, slightly micaceous Sand, light prown, very fine, slightly micaceous Sand, slity, slightly micaceous Sand, light prown, very fine, slightly micaceous Sand, slity, slightly micaceous Sand, light prown, very fine, slightly micaceous with slight trace of tignite and clay, black to brown slity, slightly micaceous Sand, light prown, very fine, slightly micaceous Sand, light prown, very fine, slightly micaceous with slight trace of tignite and clay, black to brown slity, slightly micaceous Sand, light prown, very fine, slightly micaceous with slight trace of tignite and clay, black to brown slity, slightly micaceous Sand, light prown, very fine, slightly micaceou	76'- 88' Clay, gray-brown, with trace of very fine sand and silt	Location: SW¼, Sec. 31, T. 13 S., R. 19 W.	60'-135' Clay, gray, very fine sand,
sand and silt, slightly micaceous clay, gray, slightly micaceous slightly silty slity slity slightly micaceous, slightly silty sand, gray, very fine, slightly micaceous slightly slity sand, gray, very fine, slightly micaceous slightly micaceous, with trace of lignite T. D.: 150' Drill Hole No. 333. Elevation 348' Location: NE¼, Sec. 33, T. 13 S., R. 20 W. County: Newda Logged by: G. L. Delevan 4/78. O' 25' Sand, light redish-brown, very fine slightly micaceous sl	and silt, slightly micaceous		and siderite
slightly silrty Sand, gray, very fine, slightly micaceous, with trace of lignite T. D.: 150' Drill Hole No. 333. Elevation 348' Location: NE½, Sec. 33, T. 13 S., R. 20 W. County: Nevada Logged by: G. L. Delevan Logged by	sand and silt, slightly micaceous	24'- 32' Clay, brown, very fine sand and	Drill Hole No. 340 Elevation 250'
Drill Hole No. 333. Elevation 348′ Location: NE¼, Sec. 33, T. 13 S., R. 20 W. County: Nevada Logged by: G. L. Delevan 4/78. 0'- 25' Sand, light reddish-brown, very fine, clay 25'- 42' Sand, light brown, very fine sand disty, lightly micaceous with trace of tan clay 42'- 57' Clay, gray-brown, very fine sand disty, lightly micaceous 57'- 62' Clay, brown, slightly micaceous 52'- 82' Clay, gray-brown, very fine sightly micaceous 52'- 82' Clay, brown, slightly micaceous 52'- 82' Clay, gray-brown, very fine sightly micaceous 52'- 82' Clay, gray-brown, very fine sightly micaceous 52'- 82' Clay, gray-brown, very fine sightly micaceous 52'- 82' Clay, brown, slightly micaceous 52'- 82' Clay, gray-brown, very fine sightly micaceous 52'- 82' Clay, gray-brown, very fine sightly micaceous 52'- 82' Clay, brown, slightly micaceous 52'- 82' Clay, gray-brown, very fine sand and silt, slightly micaceous 52'- 82' Clay, gray-brown, slightly micaceous 52'- 82' Clay, brown, slightly micaceous 52'- 82' Clay, brown, slightly micaceous 52'- 82' Clay, gray-brown, very fine sand clay, light brown, fine to very fine, slightly micaceous 52'- 82' Clay, gray-brown, very fine sand clay, light brown, fine to very fine, slightly micaceous 52'- 82' Clay, gray-brown, very fine sand clay, light brown, fine to very fine, slightly micaceous 52'- 62' Clay, brown, very fine sand clay, light brown, fine to very fine, slightly micaceous 52'- 62' Clay, brown, very fine sand clay, light prown, very fine sightly micaceous 52'- 62' Clay, brown, slightly micaceous 52'- 62' Clay, brown, slightly micaceous 52'- 62' Clay, brown, slightly micaceous 52'- 62' Clay, brown, very fine sand clay, light prown, very fine	slightly silty 135' 150' Sand, gray, very fine, slightly micaceous, with trace of lignite	32'- 50' Clay, gray brown, silty, very slightly micaceous	Location: SW%, Sec. 36, T. 13 S., R. 19 W. County: Ouachita
Drill Hole No. 333. Elevation 348' Location: NE¼, Sec. 33, T. 13 S., R. 20 W. County: Nevada Logged by: G. L. Delevan 4/78. 0' 25' Sand, light reddish-brown, very fine, slightly micaceous 25' 42' Sand, light brown, very fine, slightly micaceous 42' 57' Clay, gray-brown, very fine sand carbonaceous 101'-150' Clay, gray-brown, very fine slightly micaceous 88'-102' Clay, brown, slightly micaceous 102'-120' Clay, gray-brown, very fine sand and silt, slightly micaceous 120'-125' Clay, brown, very fine sand and silt, slightly micaceous 120'-120' Clay, gray-brown T. D.: 150' Drill Hole No. 321 Elevation 293' Lignite and clay, light gray-brown to black, soft 87'- 95' Sand, light brown, fine to very fine, slightly micaceous 95'- 101' Sand and clay, light brown to black, soft 87'- 95' Sand, light brown, fine to very fine, slightly micaceous 95'- 101' Sand and clay, light brown to black, soft 87'- 95' Sand, light brown, fine to very fine, slightly micaceous 101'-150' Clay, light gray-brown, silty, slightly micaceous 101'-150' Clay, light gray-brown, silty, slightly micaceous 8'- 87' Sand, light brown, fine to very fine, slightly micaceous 95'- 101' Sand and clay, light brown to black, soft 87'- 95' Sand, light brown, fine to very fine, slightly micaceous 101'-150' Clay, light gray-brown, silty, slightly micaceous with slight trace of lignite T. D.: 150' Drill Hole No. 337. Elevation 298' Lignite and clay, light gray-brown to black, soft 87'- 95' Sand, light brown, fine to very fine, slightly micaceous 101'-150' Clay, light gray-brown, silty, slightly micaceous with slight trace of lignite T. D.: 150' Drill Hole No. 337. Elevation 298' Lignite and clay, light gray-brown, slightly micaceous 101'-150' Clay, gray-brown, silty, slightly micaceous with slight trace of lignite and clay, black to brown to black, soft 101'-150' Clay, gray-brown, slightly micaceous 102'-120' Clay, gray-brown, slightly micaceous 102'-120' Clay, gray-brown, slightly micaceous 102'-120' Clay, gray-brown, very fine sand slightly micaceous 102'-120'	T. D.: 150'	61'- 73' Sand, light gray-brown, very	0'- 5' Sand, reddish brown, fine, iron
County: Nevada Logged by: G. L. Delevan 4/78. 0'- 25' Sand, light reddish-brown, very fine, clay 25'- 42' Sand, light brown, very fine, with trace of tan clay 42'- 57' Clay, gray-brown, very fine, sand, silty, slightly micaceous 57'- 62' Clay, brown, silghtly micaceous 62'- 88' Clay, brown, silghtly micaceous 88'-102' Clay, brown, silty, slightly micaceous 120'-120' Clay, gray-brown, very fine said silt, slightly micaceous 120'-125' Clay, gray-brown T. D.: 150' Clay, gray-brown T. D.: 150' Clay, gray-brown T. D.: 150' Drill Hole No. 224 Elevation 280' Drill Hole No. 224 Elevation 280' Drill Hole No. 224 Elevation 280' Sand, light brown, fine to very fine sond clay, lightly micaceous slightly micaceous with glightly micaceous with slight trace of lignite and clay, black to brown Sold and clay, lightly micaceous with slight trace of lignite and clay, black to brown Sold and clay, lightly micaceous with slight trace of lignite and clay, black to brown Sold and clay, lightly micaceous with slight trace of lignite and clay, black to brown Sold and clay, lightly micaceous with slight trace of lignite and clay, black to brown Sold and clay, light provent, silty, slightly micaceous with slight trace of lignite and clay, black to brown Sold and clay, light provent, silty, slightly micaceous with slight trace of lignite and clay, black to brown Sold and clay, light provent, silty, slightly micaceous with slight trace of lignite and clay, black to brown Sold and clay, light provent, silty, slightly micaceous with slight trace of lignite and clay, black to brown Sold and clay, light provent, silty, slightly micaceous with slight trace of lignite and clay, black to brown Sold and clay, light provent, silty, slightly micaceous with slight trace of lignite and clay, black for sold and clay, black for sold and clay, black for sold and clay, light provent, silty, slightly micaceous with slight trace of lignite and clay, black for sold and clay, light brown, for sold and clay, light provent, silty, slightly micaceous sold	Location: NE¼, Sec. 33, T. 13 S., R. 20 W.	73'- 85' Sand and clay, light gray-brown	5'- 8' Clay, tan, very fine
0'- 25' Sand, light reddish-brown, very fine, clay 25'- 42' Sand, light brown, very fine with trace of tan clay 42'- 57' Clay, gray-brown, very fine sand and carbonaceous 57'- 62' Clay, brown, slightly micaceous 62'- 88' Clay, gray-brown, very fine slightly micaceous 88'-102' Clay, brown, silty, slightly micaceous 102'-120' Clay, gray-brown, slightly micaceous 125'- 150' Clay, gray-brown 125'- 150' Clay, gray-brown, slightly micaceous 125'- 150' Clay, gray-brown, slightly m	County: Nevada	85'- 87' Lignite and clay, dark brown to black, soft	slightly micaceous 26'- 35' Clay, gray, with very fine sand,
25'- 42' Sand, light brown, very fine with trace of tan clay 42'- 57' Clay, gray-brown, very fine sand, silty, slightly micaceous and carbonaceous 57'- 62' Clay, brown, slightly micaceous 62'- 88' Clay, gray-brown, very fine slightly micaceous 88'-102' Clay, brown, silty, slightly micaceous Clay, brown, very fine sand and silt, slightly micaceous Clay, brown, very fine sand and silt, slightly micaceous Clay, gray-brown, clay Clay, brown, silty, slightly micaceous Clay, brown, silty, slightly micaceous Clay, brown, slightly micaceous Clay, brown, slightly micaceous Clay, brown, very fine sand clay, black to brown County: Ouachita Logged by: G. L. Delevan 7'- 12' Sand, red to brown, very fine sand silt, slightly micaceous Clay, gray-brown, slightly micaceous Clay		fine, slightly micaceous	35'- 45' Sand, gray, fine
42'- 57' Clay, gray-brown, very fine sand, silty, slightly micaceous and carbonaceous and c	25' 42' Sand, light brown, very fine with trace of tan clay	very fine, slightly micaceous	of dark brown clay
62'- 88' Clay, gray-brown, slightly micaceous slightly micaceous 88'-102' Clay, brown, slity, slightly micaceous Clay, gray-brown, slightly micaceous 102'-120' Clay, gray-brown, slightly micaceous 125'-150' Clay, gray-brown Slightly micaceous 125'-150' Clay, gray-brown T. D.: 150' Drill Hole No. 337. Elevation 298' Location: NW%, Sec. 5, T. 14 S., R. 19 W. County: Ouachita Logged by: G. L. Delevan 4/78. O'- 12' Sand, red to brown, very fine with trace of tan clay slit, slightly micaceous 12'- 25' Clay, brown, very fine sand 25'- 34'6'' Clay, gray, very fine sand 25'- 34'6'' Clay, gray very fine sand 35'6''-43' Clay, gray very fine sand 35'6''-43' Clay, gray very fine sand 35'6''-43' Clay, gray very fine sand 25'- 34'6'' Clay, gray very fine sand 35'6''-43' Clay, gray very fine sand 25'- 34'6'' Clay, gray very fine sand 35'6''-43' Clay, gray very fine sand 25'- 34'6'' Clay, gray very fine sand 25'- 34'6'' Clay, gray very fine sand 35'6''-43' Clay, gray very fine sand 25'- 34'6'' Clay, gray very fine sand 25'- 34'6'' Clay, gray very fine sand 35'6''-43' Clay, gray very fine sand 25'- 34'6'' Clay, gray very fine sand 35'6''-43' Clay, gray very fine sand 35'6''-43' Clay, gray very fine sand 25'- 34'6'' Clay, gray very fine sand 35'6''-43' Clay, gray very fine sand 25'- 34'6'' Clay, gray very fine sand 35'6''-43'	sand, silty, slightly micaceous and carbonaceous	slightly micaceous with slight trace of lignite	55'- 68' Clay and sand, gray-brown, fine
Clay, brown, silty, slightly micaceous 102'-120' Clay, gray-brown, slightly micaceous 120'-125' Clay, brown, very fine sand and silt, slightly micaceous 125'-150' Clay, gray-brown T. D.: 150' Clay, brown, slightly micaceous 125'-34'6'' Clay, brown, very fine sand and silt, slightly micaceous 126'-34'6'' Clay, brown, very fine sand and silt, slightly micaceous 126'-34'6'' Clay, brown, very fine sand and silt, slightly micaceous 126'-34'6'' Clay, brown, very fine sand and silt, slightly micaceous 126'-34'6'' Clay, brown, very fine sand and silt, slightly micaceous 126'-34'6'' Clay, brown, very fine sand and silt, slightly micaceous 126'-34'6'' Clay, gray, very fine sand and silt, slightly micaceous 126'-34'6'' Clay, light gray-brown, with trace of siderite T. D.: 145' Clay, light gray-brown, with trace of siderite T. D.: 145' Drill Hole No. 341. Elevation 259' Location: NE¼, Sec. 31, T. 13 S., R. 18 County: Ouachita Logged by: G. L. Delevan 27'-120' Sand, red to brown, very fine sand and silt, slightly micaceous 126'-34'6'' Clay, gray, very fine sand and silt, slightly micaceous 126'-34'6'' Clay, gray, very fine sand and silt, slightly micaceous 127'-35' Clay, light gray-brown, with trace of siderite T. D.: 145' Drill Hole No. 341. Elevation 259' Location: NE¼, Sec. 31, T. 13 S., R. 18 County: Ouachita Logged by: G. L. Delevan	62'- 88' Clay, gray-brown, very fine slightly micaceous		brown 80'8''-95' Clay, gray-brown
ceous 0'- 12' Sand, red to brown, very fine with trace of tan clay silt, slightly micaceous 12'- 25' Clay, brown, very fine sand Clay, gray-brown 25'- 34'6'' Clay, gray, very fine sand T. D.: 150' 34'6''-35'6'' Lignite, black, firm 35'6''-43' Clay, gray 43'- 61' Sand, light brown, fine Drill Hole No. 344 Flavotica 232'	ceous	County: Ouachita	96'6"-145' Clay, light gray-brown, firm,
silt, slightly micaceous 125'-150' 126'-150' 127'- 25' Clay, brown, very fine sand 25'- 34'6'' Clay, gray, very fine sand 34'6''-35'6'' Lignite, black, firm 35'6''-43' Clay, gray 43'- 61' Sand, light brown, fine 12'- 25' Clay, brown, very fine sand 25'- 34'6'' Clay, gray, very fine sand	ceous		T. D.: 145′
Drill Hole No. 334 Elevation 2007	silt, slightly micaceous 125'-150' Clay, gray-brown	12'- 25' Clay, brown, very fine sand 25'- 34'6'' Clay, gray, very fine sand 34'6'' 35'6'' Lignite, black, firm	Location: NE¼, Sec. 31, T. 13 S., R. 18 W., County: Ouachita
	Drill Hole No. 334. Elevation 323'		
Location: NW%, Sec. 3, T. 14 S., R. 20 W. County: Nevada 80'-108' Clay, gray-brown, very fine 6'- 16' Clay, tan, with very fine	Location: NW¼, Sec. 3, T. 14 S., R. 20 W. County: Nevada	silty, slightly micaceous 80'-108' Clay, gray-brown, very fine	iron cemented 6'- 16' Clay, tan, with very fine sand
0'- 12' Clay, light brown to brown, 112'-117' Sand and clay, gray-brown, fine 40'- 60' Clay, light gray, with trac	0'- 12' Clay, light brown to brown,	108'-112' Sand, light-brown, very fine 112'-117' Sand and clay, gray-brown, fine	silty

60'- 72' Clay and sand, gray, very fine 72'- 80' Clay, gray-brown, slightly mica-20'- 35' Clay, gray 35'- 36' Clay, black, lignitic	136'-138'6'' Lignite and clay, black, soft 138'6''-150' Clay, white, with very fine
80'- 87' Sand, gray, fine, with trace of lignite 87'- 89'6" Lignite, black, soft 89'6"-105' Clay, gray to light gray 105'-107' Lignite and clay, black, soft 107'-118' Clay, gray 120'-150' Sand, gray, very fine T.D.: 150' 83'-23' Sand, light gray-brown, fine, slightly micaceous 83' 72' Clay, gray, very fine sand slit, slightly micaceous with 2" siderite @ 57' 72'- 83' Sand, light gray, very fine, w/gray clay, slightly micaceous 83'-125' Clay, gray, slity, with trace of 38'-125' Clay, gray, slity, with trace of 1 lignite and brown clay	County: Ouachita Logged by: G. L. Delevan 4/78. O'- 3' Clay, reddish-brown and tan, very fine sand and silt
Drill Hole No. 342. Elevation 240' Location: SE¼, Sec. 32, T. 13 S., R. 18 W. County: Ouachita Logged by: G. L. Delevan 0'- 5' Clay, reddish-brown, very fine sand 5'- 17' Clay, white to tan, very fine sand, silt 125'-150' Sand, gray, very fine, slightly silty with trace of gray clay T. D.: 150' Drill Hole 345. Elevation 141' Location: NW¼, Sec. 36, T. 13 S., R. 18 W. County: Ouachita Logged by: G. L. Delevan 4/78.	8'- 25' Clay, gray-brown, very fine sand and silt, slightly micaceous 25'- 40' Sand, light gray to brown, fine to very fine, slightly micaceous with trace of gray-brown clay 40'- 56' Clay, gray-brown, very fine, slightly micaceous
17'- 24' Clay and sand, gray, very fine 24'- 30' Clay, gray-brown, very fine sand, slightly micaceous 30'- 41' Clay and sand, gray, very fine 41'- 48' Clay, light gray-brown 48'- 50'6'' Lignite, black, firm 50'-6''-60' Clay, brown, w/very fine sand 60'- 70' Clay, light gray-brown 49'- 70' Clay, light gray-brown 49'- 30' Clay, light gray-brown 49'- 30'- 6' Clay and sand, reddish brown, very fine sand 30'- 41' Clay and sand, reddish brown, very fine sand 40'- 17' Clay and sand, reddish brown, very fine sand 41'- 48' Clay, light gray-brown, very fine sand 6'- 17' Clay, light gray-brown, very fine sand 60'- 70' Clay, light gray-brown	fine sand and silt 130'-150' Silt, brown, with trace of very fine sand and clay T. D.: 150' Drill Hole No. 349. Elevation 180'
70'- 71' Lignite, black, firm 37'- 80' Sand, light gray, fine 7. D.: 80' Sand, light gray, fine 7. D.: 80' Sand, light gray, fine 7. D.: 80' Sand, light gray, silty 9. Sand, light gray, very fine 7. D.: 80' Sand, light gray, very fine 7. D.: 80' Sand, light gray, very fine 7. Drill Hole No. 346. Elevation 145'	Location: NE¼, Sec. 11, T. 14 S., R. 18 W. County: Ouachita Logged by: G. L. Delevan 4/78. 0'- 12' Clay, reddish-brown, very fine
Core Interval 50'-55' Location: NE¼, Sec. 25, T. 13 S., R. 18 W. County: Ouachita Logged by: G. L. Delevan 4/78.	sand, slightly micaceous 12'- 50' Sand, light brown to tan, very fine, with trace of brown clay, slightly micaceous
46" 50'-52'3" lignite, black, firm, with few silt partings 52'3"-52'7" lignite and clay, black to dark brown 52'7"-53'10" clay, gray to brown, with very fine sand, slightly micaceous and carbonaceous 53'10"-55' no recovery T. D.: 150' Sand and clay, light reddish-brown, very fine 23'- 27' Sand and clay, light reddish-brown, very fine sand and clay, very fine, with trace of dark brown to brown, fine to very fine, with trace of lignitic clay and lignite stringers Clay, brown to dark brown, very fine sand, with lignite stringers Clay, gray-brown, with very	slightly micaceous 75'-102' Clay, gray-brown, very fine sand and silt, slightly micaceous, slightly carbonaceous 102'-140' Sand, light brown, very fine, with trace of lignite stringers 140'-142' Lignite, black, firm 142'-150' Clay, brown, silty, slightly
Drill Hole No. 343. Elevation 288' Location: SE%, Sec. 33, T. 13 S., R. 18 W. County: Ouachita Logged by: G. L. Delevan 4/78. Location: SE%, Sec. 33, T. 13 S., R. 18 W. County: Ouachita Logged by: G. L. Delevan 4/78.	Drill Hole No. 350. Elevation 230' Location: NW¼, Sec. 14, T. 14 S., R. 18 W. County: Ouachita Logged by: G. L. Delevan 4/78.
0'- 15' Sand, reddish-brown, fine, slightly iron cemented 15'- 24' Clay, gray, with very fine sand, slightly micaceous 24'- 31' Clay, gray-brown, and dark-brown interbedded 36'- 80' Clay, light gray, very fine sand, slit, slightly micaceous 80'-116' Sand and slit, light gray, very fine 116'-150' Clay, gray-brown, with trace very fine sand, silt, slightly micaceous T. D.: 150' Drill Hole No. 347. Elevation 138' Location: SE'A, Sec. 36, T. 13 S., R. 18 W. County: Ouachita Logged by: G. L. Delevan 4/78. Clay, light reddish-brown, very fine sand, slightly micaceous sand, slightly micaceous sand, slightly micaceous 18'- 25' Clay, gray, very fine sand and silty, slightly micaceous 25'- 37' Sand, gray, very fine, with trace of gray-brown, very fine sand, slightly micaceous 25'- 37' Sand, gray, very fine, with trace of gray-brown clay 77'- 95' Clay, brown to dark brown, slightly lignitic, with trace of lignite @ 80' 95'-103' Clay, gray-brown on clay 18'- 25' Clay, gray-brown clay 25'- 37' Sand, gray, very fine, with trace of gray-brown clay 26'- 18' Clay, gray-brown to tan, very fine sand, slightly micaceous 25'- 37' Sand, gray, very fine, with trace of gray-brown clay 26'- 10'- 4' Sand, reddish brown, very fine sand, slightly micaceous 25'- 37' Sand, gray, very fine, with trace of gray-brown clay 26'- 10'- 4' Sand, reddish brown, very fine sand, slightly micaceous 25'- 37' Sand, gray, very fine, with trace of gray-brown clay 26'- 10'- 4' Sand, reddish brown, very fine sand, slightly micaceous 25'- 37' Sand, gray, very fine sand, slightly micaceous 26'- 10'- 4' Sand, gray, very fine sand silty, slightly micaceous 25'- 37' Sand, gray, very fine sand, slightly micaceous 26'- 10'- 10'- 10'- 10'- 10'- 10'- 10'- 10	0'- 6' Clay, reddish brown, very fine sand, iron stained 6'- 13' Clay, tan, very fine sand, iron stained 13'- 17' Clay, gray-brown, slightly micaceous 17'- 40' Clay, brown, very fine sand, slightly micaceous 40'- 50' Sand, gray-brown, very fine sand and silt, slightly micaceous 60'- 70' Clay, brown, very fine sand and silt, slightly micaceous 70'- 87' Clay, dark gray-brown, very fine sand and silt, slightly micaceous 70'- 87' Clay, and sand, brown, fine 87'-120' Clay, brown, silty 120'-150' Clay, gray-brown to brown T. D.: 150' Drill Hole No. 351. Elevation 248' Location: SW'4, Sec. 23, T. 14 S., R. 18 W. County: Quachita Logged by: G. L. Delevan 4/78. 0'- 6' Sand and clay, light reddish-brown, very fine, slightly micaceous

6. 111 Clay, tan, slightly micaceous with wary fine sand with very fine sand, slightly micaceous sand, gray to brown, very fine sand, slightly micaceous sand, gray to brown, very fine sand, slightly micaceous sand, gray to brown, very fine sand, slightly micaceous sand, gray to brown, very fine sand, slightly micaceous sand, gray to brown, very fine sand, and slit, slightly micaceous and and slit, slightly micaceous sand, gray, train to light brown, fine sand, slightly micaceous sand, gray, fine, slightly micaceous sand, gr
26' 28' Clay, gray-brown, with very fine sand, slightly micaceous shad, gray, very fine sand, gray, very fine, slightly micaceous fits for Clay, gray-brown, very fine, slightly micaceous fits for Clay, gray-brown, with very fine sand, gray, very fine sand, gray, very fine sand, gray, very fine, slightly micaceous fits for Clay, gray-brown, with very fine sand, gray, very fine sand, gray, very fine sand, gray, very fine, slightly micaceous fits for Clay, gray-brown, with very fine sand, gray, very fine sand, gray, very fine, slightly micaceous fits for Clay, gray-brown, with very fine sand, gray, very fine sand, gray, very fine sand, gray, very fine, slightly micaceous fits fill fill for Clay, gray-brown, gray-brow
26* 30° Sand, gray to brown, very fine 30° 80° Clay, brown, with wery fine sand, slightly micaeous with a trace of silerite to cation: NW4, Sec. 27, T. 14 S., R. 18 W. Conny: Ouachita course with very fine sand, slightly micaeous shift with expensive to the sand, slightly micaeous shift with the sound of the sand, slightly micaeous shift with the sound of the sand, slightly micaeous shift with the sound of the sand, slightly micaeous shift with the sand slightly micaeous shift with the sand slightly micaeous shift with strace of siderite than trace of siderite than tr
80°-150′ Clay, gray-brown, very fine sand and silt, slightly micaceous with a trace of siderite T. D.: 150′ Sand and clay, gray-brown, every fine sand slightly micaceous of lightly micaceous with a trace of siderite T. D.: 150′ Sand and clay, gray-brown, every fine sand slightly micaceous of lightly mi
sand and silt, slightly micaceous with a trace of siderite T. D.: 150' 20'- 45' Clay, John M.W. Sec. 27, T. 14 S., R. 18 W. Country: Ouachita Clay, gray-brown, with very fine sand, slightly micaceous of lignite Secure of lignit
Drill Hole No. 352. Elevation 285' Location: NWX, Sec. 27, T. 14 S., R. 18 W. County: Ouachita Clay, gray-brown, with very fine sand, slightly micaceous 12'- 20'- 40' Clay, gray-brown, silvy fine sand and silt, slightly micaceous 12'- 20'- 40' Clay, gray-brown, silvy fine sand and silt, slightly micaceous 12'- 20'- 40' Clay, gray-brown, silvy fine sand and silt, slightly micaceous 12'- 20'- 40' Clay, gray-brown, silvy fine sand and silt, slightly micaceous 12'- 20'- 40' Clay, gray-brown, silvy fine sand and silt, slightly micaceous 12'- 20'- 40' Clay, gray-brown, silvy fine sand and silt, slightly micaceous 12'- 20'- 40' Clay, gray-brown, silvy fine sand and silt, slightly micaceous 12'- 20'- 40' Clay, gray-brown, silvy fine sand and silt, slightly micaceous 12'- 20'- 40' Clay, gray-brown, silvy fine sand and silt, slightly micaceous 12'- 20'- 40' Clay, gray-brown, silvy fine sand and silt, slightly micaceous 12'- 20'- 40' Clay, gray-brown, silvy fine sand and silt, slightly micaceous 12'- 20'- 40' Clay, gray-brown, silvy fine sand and silt, slightly micaceous 12'- 20'- 40' Clay, gray-brown, silv, sec. 4, T. 15' S. 16' Clay, gray-brown, with very fine sand and silt, slightly micaceous 12'- 20'- 40' Clay, gray-brown, with ymicaceous 12'- 20'- 20'- 21'- 21'- 21'- 21'- 21'- 21'- 21'- 21
of lighte Location: NWK, Sec. 27, T. 14 S., R. 18 W. County: Ouachita Logad by: G. L. Delevan 4/78. 0' 5' Clay, light brown, with very fine sand, slightly micaceous clay, gray-brown, silty wery fine sand, slightly micaceous clay, gray-brown, with very fine sand sand, gray prown, silghtly micaceous clay, gray-brown, with very fine sand, slightly micaceous clay, gray-brown, with very fine sand slightly micaceous clay, gray-brown, with very fine sand slightly micaceous clay, gray-brown, with very fine sand, slightly micaceous clay, gr
Location: NWW, Sec. 27, T. 14 S, R. 18 W. County: Ourschitz Logged by: G. L. Delevan 4/78. O' 5' Clay, light brown, with very fine sand, slightly micaceous Clay, gray-brown, with very fine sand, slightly micaceous Clay, gray-brown, with very fine sand and silt very fine sand, slightly micaceous Clay, gray-brown, with very fine sand, slightly micaceous Clay, gray-brown, with very fine sand and silt very fine sand, slightly micaceous Clay, gray-brown, with very fine sand, slightly micaceous Clay, brown, with very fine sand slid very fine sand, slightly micaceous Clay, brown, with very fine sand slightly micaceous Clay, gray-brown, with very fine sand slightly micaceous Clay, brown, with very fine sand slightly micaceous Clay, gray-brown, with very fine sand and slit, slightly micaceous Clay, gray-brown, with very fine sand and slit, slightly micaceous Clay, gray-brown, with very fine sand and slit, slightly micaceous Clay, gray-brown, with very fine sand and slit, slightly micaceous Clay, gray-brown, with very fine sand and slit, slightly micaceous Clay, gray-brown, with very fine sand and slit, slightly micaceous Clay, gray-brown, with very fine sand and slit, slightly micaceous Clay
County: Ouschita Logged by: G. L. Delevan 4/78. 51° Clay, light prown, with very fine sand, slightly micaceous files year-prown, with very fine sand slightly micaceous files year-prown, with very fine sand and slit, slightly micaceous files year-prown, with very fine sand and slit, with a trace of brown clay, gray-prown, with very fine sand and slit, with a trace of brown clay, gray-prown, with very fine sand and slit, with a trace of brown clay, gray-prown, with very fine sand and slit, with a trace of brown clay, gray-prown, with very fine sand and slit, with a trace of brown clay, gray-prown, with very fine sand and slit, with a trace of brown clay, gray-prown, with very fine sand and slit, with a trace of brown clay, gray-prown, with very fine sand and slit, slightly micaceous clay, gray-prown, with very fine sand and slit, slightly micaceous gray-brown, with very fine sand, slightly micaceous clay, gray-prown, with very fine sand, slightly micaceous clay gray-prown, with very fine sand, slightly micaceous clay gray-prown, with very fine sand, slightly micaceous clay gray-prown, with very fine sand, slightly micaceous clay, gray-prown, with very fine sand, slightly micaceous clay gray-prown, with very fine san
5 Clay, light brown, with very fine sand, slightly micaceous clay, pray-brown, with very fine sand slightly micaceous sand, slightly micaceous clay, gray-brown, with very fine sand and slit wery fine sand sand, gray, very fine sand sand, gray, very fine sand shightly micaceous clay, gray-brown, with very fine sand shightly micaceous sand, gray, prown, with very fine sand and slit, slightly micaceous clay and sand, gray, fine, slightly micaceous clay, gray-brown, with very fine sand slit, slightly micaceous clay, gray-brown, with very fine sand and slit, slightly micaceous clay, gray-brown, with very fine sand and slit, slightly micaceous clay, gray-brown, with very fine sand and slit, slightly micaceous clay and sand, gray, fine, slightly micaceous clay, gray-brown, with very fine sand and slit, slightly micaceous clay, gray-brown, with very fine sand and slit, slightly micaceous clay, gray-brown, with very fine sand and slit, slightly micaceous clay and sand, gray, fine, slightly micaceous clay, gray-brown, with very fine sand, slightl
fine sand, slightly micaceous clay, pray-brown, with very fine sand and slit, slightly micaceous clay, gray-brown, slightly micaceous sightly micaceous sightly micaceous clay, gray-brown, with very fine sand and slit, slightly micaceous clay, gray-brown, with very fine sand, slightly micaceous clay, gray-brown, very fine sand, slightly micace
12: 20' 40' Clay, light gray-brown, with very fine sand, slightly micaceous gray-brown, slightly micaceous gray-brown, slightly micaceous gray-brown, with very fine sand, slightly micaceous gray-brown, with very fine sand and slit, slightly micaceous gray-brown, with very fine sand gray-brown, with very fine sand, slightly micaceous gray-brown, with very fine sand gray-brown, with very fine sand and slit, slightly micaceous gray-brown, with very fine sand and slit, slightly micaceous gray-brown, with very fine sand gray-brown, with very fine sand gray-brown, with very fine sand g
20'- 40' Clay, light gray-brown, with very fine sand and silt, each of sightly micaceous sightly micaceous sightly micaceous strace of siderite at race of siderite and sand, slightly micaceous strace of siderite and sand, slightly micaceous strace of siderite sand, slightly micaceous slightly sand and silt, slightly micaceous slightly micaceous slightly sand and silt, slightly micaceous slightly sand and silt, slightly micaceous slightly micaceous slightly sand and silt, slightly micaceous slightly micaceou
40' - 70' Clay and sand, gray, very fine slightly micaceous slightly micaceous of Sand, gray-brown, with very fine sand, slightly micaceous of Sand, gray, very fine, with a trace of siderite of Sand, gray, very fine, sand, slightly micaceous of Sand, gray, very fine, sand, slightly micaceous of Sand, gray, very fine, with a trace of siderite of Sand, gray, very fine, with a trace of siderite of Sand, gray, very fine, with a trace of siderite of Sand, gray, very fine, with a trace of siderite of Sand, gray, very fine, with a trace of signite of Sand and silt, slightly micaceous of Sand, gray, very fine, with a trace of lignite Clay and sand, gray-brown, with very fine sand and silt, slightly micaceous of Sand, gray, very fine, with a trace of lignite Clay and sand, slightly micaceous of Signite plack, soft very fine sand and silt, slightly micaceous of Sand, gray-brown, with very fine sand and silt, slightly micaceous of Sand, slightly micac
yor- 90' Clay, gray-brown slightly micaceous sand, slightly micaceous sand, slightly micaceous sand, slightly micaceous slightly micaceous slightly micaceous sand, slightly micaceous s
slightly micaceous Clay, dark gray-brown, with very fine sand, slightly micaceous 128'-140' Sand, gray, very fine, with a trace of siderite 140'-150' Clay, brown, with very fine sand, slightly micaceous T. D.: 150' Drill Hole No. 353. Elevation 270' Location: SE¼, Sec. 29, T. 14 S., R. 18 W. County: Ouachita Logged by: G. L. Delevan 13' 30' Clay, light brown, with very fine sand, slightly micaceous 13' 30' 38' Clay, gray-brown, with very fine sand, slightly micaceous 30' 38' Clay, gray-brown, with very fine sand, slightly micaceous 31' 50' Clay, brown, with very fine sand, slightly micaceous Clay and sand, brown, with very fine sand, slightly micaceous Clay and sand, brown, with very fine sand, slightly micaceous Clay and sand, brown, with very fine sand and silt, slightly micaceous Clay and sand, brown, with very fine sand, slightly micaceous Clay and sand, brown, with very fine sand and silt, slightly micaceous Clay and sand, brown, with very fine sand, slightly micaceous Clay and sand, brown, with very fine sand, slightly micaceous Clay and sand, brown, with very fine sand, slightly micaceous Clay and sand, brown, with very fine sand, slightly micaceous Clay and sand, brown, with very fine sand, slightly micaceous Clay and sand, brown, with very fine sand, slightly micaceous Clay and sand, brown, with very fine sand and silt, slightly micaceous Clay and sand, brown, with very fine sand slightly micaceous Clay and sand, brown, with very fine sand slightly micaceous Clay and sand, brown, with very fine sand slightly micaceous Clay and sand, brown, with very fine sand slightly micaceous Clay and sand, brown, with very fine sand slightly micaceous Clay and sand, brown, with very fine sand slightly micaceous Clay and sand, brown, with very fine sand slightly micaceous Clay and sand, brown, with very fine
fine sand and silt, slightly micaceous sand, gray-prown, with very fine sand, slightly micaceous
128'-140' Sand, gray, very fine, with a trace of siderite 140'-150' Clay, brown, with very fine sand, slightly micaceous T. D.: 150' Drill Hole No. 353. Elevation 270' Location: SE¼, Sec. 29, T. 14 S., R. 18 W. County: Ouachita Logged by: G. L. Delevan 4/78. O'- 13' Clay, light brown, with very fine sand, slightly micaceous 13'- 30' Clay, gray-brown, with very fine sand, slightly micaceous 30'- 38' Clay, gray-brown, with very fine sand, slightly micaceous 30'- 38' Clay, brown, with very fine sand, slightly micaceous 45'- 54' Clay and sand, brown, with very fine sand and silt, slightly micaceous 45'- 54' Clay, and sand, brown, with very fine sand and silt, slightly micaceous 45'- 54' Clay, and sand, brown, with very fine sand and silt, slightly micaceous 54'-120' Clay, brown, with very fine sand and silt, slightly micaceous 54'-120' Clay, brown, with very fine sand and silt, slightly micaceous 54'-120' Clay, brown, with very fine sand and silt, slightly micaceous 55'- 56' Clay, brown, with very fine sand, slightly micaceous 56'- 17' Clay, light brown, with very fine sand, slightly micaceous 45'- 54' Clay and sand, brown, with very fine sand and silt, slightly micaceous 55'- 56' Clay, brown, with very fine sand, slightly micaceous 56'- 17' Clay, light brown, with very fine sand, slightly micaceous 51'- 87' Clay and sand, brown, with very fine sand, slightly micaceous 51'- 87' Clay and sand, brown, with very fine sand, slightly micaceous 51'- 87' Clay, light gray, silty, very fine 51'- 87' Clay, brown, with very fine sand, slightly micaceous 51'- 87' Clay, light gray, silty, very fine 51'- 87' Clay, brown, with very fine sand, slightly micaceous 51'- 87' Clay, light gray, silty, very fine 51'- 15' Sand, light brown, very fine sand, slightly micaceous 51'- 87' Clay, light gray, silty, very fine 51'- 15' Sand, light brown, very fine, slightly micaceous 51'- 87' Clay, light gray silty, very fine 51'- 15' Clay, light gray sand, slightly micaceous 51'- 87' Clay, light gray sand, slightly micaceous 51'- 87' Clay, ligh
Sand, slightly micaceous T. D.: 150' Drill Hole No. 353. Elevation 270' Location: SE½, Sec. 29, T. 14 S., R. 18 W. County: Ouachita Logged by: G. L. Delevan O'- 13' Clay, light brown, with very fine sand, slightly micaceous 13'- 30' Clay, gray-brown, with very fine sand, slightly micaceous 30'- 38' Clay, light gray-brown, very fine sand, slightly micaceous 36'- 45' Clay, brown, with very fine sand, slightly micaceous 45'- 54' Clay and sand, brown, with wery fine sand and silt, slightly micaceous 54'-120' Clay, brown, with very fine sand and silt, slightly micaceous Drill Hole No. 356. Elevation 250' Location: SW½, Sec. 1, T. 15 S., R. 19 W. County: Ouachita Logged by: G. L. Delevan 4/78. O'- 6' Sand and clay, tan 6'- 17' Clay, dark gray-brown, with very fine sand, slightly micaceous 17'- 27' Clay, brown, with very fine sand and silt, slightly micaceous 17'- 27' Clay, brown, with very fine sand, slightly micaceous 18'- 42' Sand, light brown, fine, with a trace of slightite 27'- 42' Sand, light brown, with very fine sand, slightly micaceous 51'- 87' Clay and sand, brown, with very fine sand said, slightly micaceous 51'- 87' Clay and sand, slightly micaceous 51'- 87
Drill Hole No. 353. Elevation 270' Location: SE¼, Sec. 29, T. 14 S., R. 18 W. County: Ouachita Logged by: G. L. Delevan 4/78. O'- 13' Clay, light brown, with very fine sand, slightly micaceous 13'- 30' Clay, gray-brown, with very fine sand, slightly micaceous 30'- 38' Clay, light gray-brown, very fine sand, slightly micaceous 36'- 45' Clay, orown, with very fine sand, slightly micaceous 45'- 54' Clay and sand, brown, with very fine sand and silt, slightly micaceous 54'-120' Clay, brown, with very fine sand and silt, slightly micaceous 54'-120' Clay, brown, with very fine sand and silt slightly micaceous County: Ouachita Logged by: G. L. Delevan 4/78. Clay, dark gray-brown, with very fine sand, slightly micaceous 6'- 17' Clay, dark gray-brown, with very fine sand slightly micaceous 81ightly lignitic 27'- 27' Clay, brown, with very fine sand and silt, slightly lignitic 27'- 42' Sand, light brown, fine, with a trace of slightly micaceous 42'- 51' Clay, light brown, with very fine sand, slightly micaceous 51'- 87' Clay and sand, gray-brown, very fine sand and silt, slightly micaceous 51'- 87' Clay and sand, gray-brown, very fine sand sand, gray-brown, very fine sand sand, gray-brown, very fine sand, slightly micaceous 51'- 87' Clay and sand, gray-brown, very fine sand sand, gray-brown, very fine sand sand silt 110'-150' Sand, light gray, fine, slightly micaceous 51'- 87' Clay and sand, gray-brown, very fine sand sand silt 110'-150' Sand, light gray, fine, slightly micaceous 51'- 87' Clay, brown, with very fine sand, slightly micaceous 51'- 87' Clay, light brown, with very fine sand, slightly micaceous 51'- 87' Clay and sand, gray-brown, very fine sand, slightly micaceous 51'- 87' Clay, light brown, with very fine sand, slightly micaceous 51'- 87' Clay, light brown, with very fine sand, slightly micaceous 51'- 87' Clay, light gray, fine, slightly cocural to sand and silt slightly micaceous 51'- 87' Clay, light gray, silty, very fine sand, slightly micaceous 51'- 87' 150' Sand and clay, tan 6'- 17' Clay, brown,
Location: SE½, Sec. 29, T. 14 S., R. 18 W. County: Ouachita O'- 13' Clay, light brown, with very fine sand, slightly micaceous fine sand, slightly micaceous solution at trace of tan clay sand slightly micaceous slightly micaceo
County: Ouachita Logged by: G. L. Delevan 4/78. 6'- 17' Clay, dark gray-brown, with very fine sand, slightly micaceous Clay, light brown, with very fine sand, slightly micaceous Clay, gray-brown, with very fine sand, slightly micaceous Glay, light gray-brown, very fine sand, slightly micaceous Clay, gray-brown, very fine sand, slightly micaceous Sand, slightly micaceous Clay, light gray-brown, very fine sand, slightly micaceous Sand, slightly micaceous Clay, light brown, fine, with a trace of lignite Sand, light gray-brown, fine, with a trace of siderite Clay, light brown, with very fine sand, slightly micaceous Sand, slightly micaceous Clay, brown, with very fine sand, slightly micaceous Sand, slightly micaceous Sand, slightly micaceous Clay, light brown to tan, with very fine sand, slightly micaceous Clay, light brown to tan, with very fine sand, slightly micaceous Sand, slightly micaceous Clay, light brown, with very fine sand, slightly micaceous Sand, slightly micaceous Clay, light brown, with very fine sand, slightly micaceous Clay, light brown, with very fine sand, slightly micaceous Sand, slightly micaceous Clay, light brown, with very fine sand, slightly micaceous Sand, slightly micaceous Clay, light brown, with very fine sand, slightly micaceous Sand, slightly micaceous Clay, light brown, with very fine sand, slightly micaceous Sand, slightly micaceous Clay, light brown, with very fine sand, slightly micaceous Sand, slightly micaceous Clay, light brown, with very fine sand, slightly micaceous Sand, slightly mi
0'- 13' Clay, light brown, with very fine sand, slightly micaceous 13'- 30' Clay, gray-brown, with very fine sand, slightly micaceous 30'- 38' Clay, light gray-brown, very fine sand, slightly micaceous 30'- 38' Clay, brown, with very fine sand, slightly micaceous 38'- 45' Clay, brown, with very fine sand, slightly micaceous 45'- 54' Clay and sand, brown, with very fine sand and silt, slightly micaceous 45'- 54' Clay, brown, with very fine sand and silt, slightly micaceous 51'- 87' Clay and sand, gray-brown, very fine sand, slightly micaceous 51'- 87' Clay and sand, gray-brown, very fine sand, slightly micaceous 51'- 87' Clay and sand, gray-brown, very fine sand, slightly micaceous 51'- 87' Clay and sand, gray-brown, very fine sand and silt, slightly micaceous 51'- 87' Clay and sand, gray-brown, very fine sand and silt, slightly micaceous 51'- 87' Clay and sand, gray-brown, very fine sand silt, slightly micaceous 51'- 87' Clay and sand, gray-brown, very fine sand and silt, slightly micaceous 51'- 87' Clay and sand, gray-brown, very fine sand and silt, slightly micaceous 51'- 87' Clay and sand, gray-brown, very fine sand and silt, slightly micaceous 51'- 87' Clay and sand, gray-brown, very fine sand and silt, slightly micaceous 51'- 87' Clay and sand, gray-brown, very fine sand and silt, slightly micaceous 51'- 87' Clay and sand, gray-brown, very fine sand and silt, slightly micaceous 51'- 87' Clay and sand, gray-brown, very fine sand and silt, slightly micaceous 51'- 87' Clay and sand, gray-brown, very fine sand and silt, slightly micaceous 51'- 87' Clay and sand, gray-brown, very fine sand and silt, slightly micaceous 51'- 87' Clay and sand, gray-brown, very fine sand and silt, slightly micaceous 51'- 87' Clay and sand, gray-brown, very fine sand and silt, slightly micaceous 51'- 87' Clay and sand, gray-brown, very fine sand and silt, slightly micaceous 51'- 87' Clay and sand, gray-brown, very fine sand, slightly micaceous 51'- 87' Clay and sand, gray-brown, very fine sand, slightly micaceous 51'- 87' Sand, lig
fine sand, slightly micaceous 13'- 30' Clay, gray-brown, with very fine sand, slightly micaceous, sand, slightly micaceous, slightly m
fine sand, slightly micaceous 30'- 38' Clay, light gray-brown, very fine sand, slightly micaceous 38'- 45' Clay, brown, with very fine sand, slightly micaceous 45'- 54' Clay and sand, brown, with very fine sand and silt, slightly micaceous 54'-120' Clay, brown, with very fine sand, slightly micaceous 51'- 87' Clay and sand, gray-brown, very fine sand, slightly micaceous 51'- 87' Clay and sand, gray-brown, very fine sand, slightly micaceous 51'- 87' Clay and sand, gray-brown, very fine sand and silt, slightly micaceous 51'- 87' Clay and sand, gray-brown, very fine sand sand, gray-brown, very fine sand silt slightly micaceous 51'- 87' Clay and sand, gray-brown, very fine sand sand, gray-brown, very fine sand silt slightly micaceous 51'- 87' Clay and sand, gray-brown, very fine sand silt slightly micaceous 51'- 87' Clay and sand, gray-brown, very fine sand silt slightly micaceous 51'- 87' Clay and sand, gray-brown, very fine sand silt slightly micaceous 51'- 87' Clay and sand, gray-brown, very fine sand silt slightly micaceous 51'- 87' Clay and sand, gray-brown, very fine sand silt slightly micaceous 51'- 87' Clay and sand, gray-brown, very fine sand silt slightly micaceous 51'- 87' Clay and sand, gray-brown, very fine sand silt slightly micaceous 51'- 87' Clay and sand, gray-brown, very fine sand silt slightly micaceous 51'- 87' Clay and sand, gray-brown, very fine sand silt slightly micaceous
sand, slightly micaceous Clay, brown, with very fine sand, slightly micaceous sand, slightly micaceous fine sand, slightly micaceous sand, slightly micaceous sand, slightly micaceous sand, slightly micaceous fine sand, gray-brown, very fine sand and silt, slightly wery fine sand and silt, slightly micaceous fine, interbedded, with a trace of siderite sand and silt slightly micaceous fine, interbedded, with a trace of siderite for sand and silt slightly micaceous fine, interbedded, with a trace of siderite for sand and silt slightly micaceous fine, interbedded, with a trace of siderite for sand and silt slightly micaceous fine, interbedded, with a trace of siderite for sand and silt slightly micaceous fine, interbedded, with a trace of siderite for sand and silt slightly micaceous fine, interbedded, with a trace of siderite for sand and silt slightly micaceous fine, interbedded, with a trace of siderite for sand and silt slightly micaceous fine, interbedded, with a trace of siderite for sand and silt slightly micaceous fine, interbedded, with a trace of siderite for sand and silt slightly micaceous fine, interbedded, with a trace of siderite for sand and silt slightly micaceous fine, interbedded, with a trace of siderite for sand and silt slightly micaceous fine, interbedded, with a trace of siderite for sand and silt slightly micaceous fine, interbedded, with a trace of siderite for sand and silt slightly micaceous fine, interbedded, with a trace of siderite for sand and silt slightly micaceous fine, interbedded, with a trace of siderite for sand and silt slightly micaceous fine, interbedded, with a trace of siderite for sand and silt slightly micaceous fine, interbedded, with a trace of siderite for sand and silt slightly micaceous fine, interbedded, with a trace of siderite for sand and silt slightly micaceous fine, interbedded, with a trace of siderite for sand and silt slightly micaceous fine, interbedded, with a trace of siderite for sand and silt slightly micaceous fine for sand and silt slightly micaceou
sand, slightly micaceous 51'- 87' Clay and sand, gray-brown, very fine very fine sand and silt, slightly micaceous 51'- 120' Clay, brown, with very fine sand and silt, slightly micaceous 51'- 87' Clay and sand, gray-brown, very fine very fine sand and silt, slightly micaceous 51'- 87' Clay and sand, gray-brown, very fine sand and silt slightly micaceous 51'- 150' Sand, light gray, fine, slightly micaceous
very fine sand and silt, slightly micaceous T. D.: 150' Sand, light gray, silty, very fine sand and silt sand sand sand sand sand sand sand sand
54'-120' Clay, brown, with very fine micaceous
ceous, with a trace of siderite Location: NW¼, Sec. 11, T. 15 S., R. 19 W. 120'-140' Silt, brown County: Quachita
T. D.: 140' Logged by: G. L. Delevan 4/78. Drill Hole No. 361. Elevation 252' Location: NE½, Sec. 32, T. 14 S., R. 19 W.
Drill Hole No. 354. Elevation 267' Clay, brown, with very fine sand County: Quachita
County: Ouachita 5., R. 18 W. 80'- 90' Clay and sand, gray to brown, fine, slightly micaceous 0'- 28' Sand, light reddish brown, fine
4//8. 90'-150' Sand, light gray-brown, fine, 28'- 33' Clay, tan, very fine slightly micaceous 33'- 59' Clay, brown, with very fine sand
iron stained 8'- 30' Clay brown with a sand, 1. D.: 150' and silt, with a trace of lignite 59'- 62' Lignite, black, firm
sand and slit, slightly micaceous Drill Hole No. 358. Elevation 287' 62'- 66' Clay, brown, with very fine sand and slit, slightly micaceous
very fine sand county: Ouachita trace of lignite
fine 4//8. 92'-109' Sand, light brown, fine, with 62'- 92' Clay gray-brown with very fine 0' 13' Clay at trace of light gray-brown clay
sand and silt and silt, slightly micaceous, sand, slightly micaceous
fine sand and silt 12'- 21' Clay, gray-brown, silty, slightly 142'-150' Clay, gray brown to dark brown micaceous 132'-150' Sand, light gray-brown, fine
with very fine sand, slightly 21'- 33' Clay, tan, with fine sand micaceous 33'- 56' Clay gray-brown with very fine
T. D.: 150' Clay, gray-brown, with very fine Recovered: Lost: sand and silt, slightly micaceous 6'10'' 2''

	59' - 59'7" clay, gray-brown,	Drill Hole	No. 365. Elevation 302'		and a trace of lignite
	with very fine sand and silt 59'7'' - 62'3'' lignite, black,	Location: County: (SW¼, Sec. 33, T. 13 S., R. 19 \	N. 30'- 40'	Clay, light gray, with interbed-
	hard, with a few silt partings		y: G. L. Delevan 5/7	8.	ded dark brown clay, and a trace of lignite
	62'3" - 62'9" clay, dark brown to black, waxy, with very fine	0'- 17'	Sand, light reddish brown, fir	40′- 77′	Sand, light brown, very fine,
	sand and silt		with a trace of tan clay	le,	with interbedded sandy brown clay
	62'9" - 65'10" sand, gray- brown, fine to very fine, with	17'- 22'	,,	ry 77'- 93'	Clay, brown, with very fine sand
	clay binder, slightly carbona-	22'- 30'	fine sand, slightly micaceous Sand and clay, gray-brown, ve	ry 93'- 120 '	and silt, slightly micaceous Sand and clay, light brown, very
	ceous T. D.: 150'	30'- 35'	fine, slightly micaceous		fine, slightly micaceous
		30 - 33	Clay, brown, with very fine sar and silt, slightly micaceous	nd 120'-137'	Sand, light brown, fine to very fine, with a trace of lignite
Drill Hote	No. 362. Elevation 318'	3 5′- 53′	Clay and sand, brown, very fin		throughout
Location:	NE¼, Sec. 29, T. 14 S., R. 19 W.	53'- 58'	slightly micaceous Sand, brown, very fine, sil	137′- 150 ′	Clay, brown, with very fine sand, slightly micaceous
County: (Duachita : G. L. Delevan 4/78.		with a trace of brown cla		T. D.: 150'
		58'- 84'	slightly micaceous Clay, light gray-brown, w/ve	ry Drill Hole	No. 369. Elevation 295'
0'- 3'	Sand, tan to light brown, very fine, iron stained	04/400/	fine sand, and a trace of light	te Location	NW14, Sec. 3, T. 13 S., R. 19 W.
3'- 17'	Clay, gray, with a trace of very		6" Clay, gray, with very fine san slightly micaceous	d, County: (Duachita :: G. L. Delevan 5/78.
17'- 27'	fine sand Clay, gray-brown, with very fine	103′6′′-10	5' Lignite, black, soft		. G. E. Delevali 5/75.
	sand and silt, slightly micaceous	105′-106′ 106′-125′		0′- 18′	Sand, light reddish brown, very fine
27'- 33' 33'- 46'	Clay, tan, slightly micaceous		fine, silty, with a trace	of 18'- 30'	Clay, gray, with very fine sand
	Clay, gray-brown, with very fine sand and a trace of lignite	125′-137′	gray-brown clay Sand and clay, light brown, ve	30'- 64'	Clay, light tan, with very fine sand, slightly micaceous, with a
46'- 72'	Clay and sand, gray-brown, very		fine, silty		trace of gray clay
72'- 78'	fine, slightly micaceous Clay, gray, with very fine sand	137′-150′	Clay, brown, with very fine sar and silt, slightly micaceous	nd 64'-1 00'	Sand and clay, light tan, very
78'- 78'4	"Lignite, black, soft, clavey		T. D.: 150'	100'-150'	fine Sand, light tan, very fine,
704 -11	5' Clay and sand, gray-brown, silty, slightly micaceous with a	Drill Hole	No. 366. Elevation 237'		slightly micaceous
115′-150′	trace of lignite	Location:	SW¼, Sec. 28, T. 13 S., R. 19 \	٧.	T. D.: 150'
115-150	Clay, light gray-brown, silty, slightly micaceous	County: C	Duachita :: G. L. Delevan 5/7	Drill Hole	No. 370. Elevation 312'
	T. D: 150'			County: C	SE¼, Sec. 28, T. 12 S., R. 19 W. Duachita
		0'- 6'		to Logged by	: G. L. Delevan 5/78.
Drill Hole	No. 363. Elevation 285'	6'- 20'	light tan, with very fine sar Clay, gray-brown, with very fire	ne 0 '- 41'	Sand, light tan, fine
County: C	SE¼, Sec. 17, T. 14 S., R. 19 W.	20'- 80'	sand, slightly micaceous	41'- 45'	Clay, light blue-gray, very fine,
	: G. L. Delevan 4/78.	20 - 80	Sand, buff, fine, with a trace lignite	45'- 48'	slightly micaceous Clay, gray-brown, with very fine
0'- 12'	Sand, light brown, fine, with	80′-139′	Sand, light gray, fine to ver	Y	sand and silt, slightly micaceous
	light reddish brown clay	139′-150′	fine, with a trace of ligni Clay, gray, with very fine san		Sand and clay, mottled tan, very fine, slightly micaceous
12'- 47'	Clay, gray, with very fine sand, slightly micaceous		and a trace of lignite	86′-120′	Clay and sand, gray-brown, very
47'- 9 0'	Sand and clay, gray, very fine,		T. D.: 150'	120′-144′	fine, silty, slightly micaceous Sand, light gray-brown, fine,
90'-150'	slightly carbonaceous Sand, gray, very fine, slightly		No. 367. Elevation 263'		with a trace of gray-brown clay
	carbonaceous, slightly mica-	County: (NW¼, Sec. 21, T. 13 S., R. 19 v Duachita	V. 144'-150'	Clay, gray-brown, with interbed- ded fine sand
	ceous T. D.: 150'	Logged by	: G. L. Delevan 5/78	3.	T. D.: 150'
		0'- 6'	Clay, light tan, slightly iro	n Drill Hole I	No. 371, Elevation 290'
		6'- 10'	stained, with very fine san	d Location:	NE¼, Sec. 22, T. 12 S., R. 19 W.
Drill Hole I	No. 364. Elevation 296'	10'- 17'	Clay, light gray-brown Clay, light tan, w/very fine san	County: C	Duachita : G. L. Delevan 5/78.
County: O	SE¼, Sec. 8, T. 14 S., R. 19 W. uachita	17'- 23'	Sand, brown, with a trace of	of	
Logged by:	G. L. Delevan 5/78.	23'- 32'	clay and lignite Clay, gray-brown, with very fir	0'- 6' le	Sand, mottled, light orange to light brown, very fine
0'- 8'	Clay, tan, with very fine sand,	32'- 41'	sand and silt	6'- 8'	Clay, tan, iron stained, with
04 004	slightly micaceous	32 - 41	Clay, brown, with very fir sand, slightly micaceous	e 8'- 65'	very fine sand Sand, light orange to brown,
8'- 26'	Clay, gray-brown, with very fine sand, slightly micaceous, slightly	41′- 80′	Clay, gray-brown, with very fir	ie	fine to very fine, slightly mica-
001 011	carbonaceous		sand and silt, and a trace of lignite)†	ceous T. D.: 65'
26'- 31'	Sand, brown, very fine, with brown clay, slightly micaceous	80′-100′	Silt, gray-brown, with a trace of		
31'- 45'	Clay, dark brown, with very fine		clay and very fine sand T. D.: 100'		No. 372. Elevation 360'
45'- 64'	sand and silt, slightly micaceous Sand and clay, brown, very fine,	Daill		County: O	
	slightly carbonaceous	Location:	No. 368. Elevation 218′ NE¼, Sec. 16, T. 13 S., R. 19 W	Logged by	G. L. Delevan 5/78.
64'-10 0 '	Clay and sand, brown, very fine, slightly micaceous	County: O	uachita	0'- 55'	Sand, light orange to brown,
100'-117'	Clay and sand, dark gray-brown	Logged by	: G. L. Delevan 5/78	3.	very fine, with a trace of
	with very fine sand, slightly	0'- 17'	Sand, light reddish brown, wit	h 55'- 72'	white clay Clay and sand, light tan to
	micaceous, with 1½ feet of siderite @ 113'	17'- 18'	very fine sand and silt Clay, gray,	72'- 93'	orange, very fine
117′-150′	Clay, brown, with very fine sand, slightly micaceous	18'- 24'	Clay, light gray		Clay, tan, with very fine sand and silt, slightly micaceous
	T. D.: 150'	24'- 30'	Clay, dark brown, with very fin sand and silt, slightly micaceous	e 93'- 98'	Clay and sand, tan, very fine,
			and one, originary inicaceous	ν,	slightly micaceous

98′-150′	Sand, light orangish brown, with very fine sand and silt	108'-150'	Clay and sand, gray, very fine, silty, slightly glauconitic	50'- 64'	Clay, gray, silty, with a trace of fossiliferous limestone
	T. D: 150'		T. D.: 150'	64'- 73' 73'- 84'	Clay, gray-brown, silty Sand, dark gray, very fine,
Drill Hole I	No. 373. Elevation 145'	Drill Hole	No. 376. Elevation 241'		silty, glauconitic, slightly mica- ceous
	SW¼, Sec. 27, T. 9 S., R. 11 W.		NE¼, Sec. 11, T. 9 S., R. 11 W.	84'- 88'	Clay, dark gray, with very fine sand and silt, slightly glauconitic
Logged by	: G. L. Delevan 5/78.	Logged by	: G. L. Delevan 5/78.	88'- 93'	and slightly micaceous Clay, gray, silty, slightly glau-
0'- 3'	Sand, light reddish brown, very fine	0'- 28'	Clay, light brown, with very fine sand, slightly micaceous	93′-110′	conitic and micaceous Clay, gray-brown, silty, slightly
3'- 18'	Clay, light brown, with trace of gravel	28'- 48'	Clay, dark blue-gray, with very fine sand and silt, slightly	110′-150′	micaceous Clay, light gray-brown, slightly
18'- 36' 36'- 80'	Clay, gray Clay, gray, slightly glauconitic	48'- 60'	micaceous Clay, gray-brown, slightly mica-	110-100	micaceous T. D.: 150'
	with very fine sand, slightly micaceous	60'- 95'	ceous Clay, light gray-brown, slightly	Drill Hole	No. 380. Elevation 232'
80'- 98'	Clay, gray-brown, with very fine sand and silt, slightly micaceous		micaceous, with a trace of fossiliferous limestone	Location: County: C	SE¼, Sec. 15, T. 8 S., R. 11 W. Reveland
98′-122′	Clay, gray, with very fine sand and silt, slightly micaceous	95′-150′	Silt and clay, gray-brown, slight- ly micaceous with a trace of	Logged by	: G. L. Delevan 5/78.
122′-123′	Lignite and clay, dark brown to black, soft		limestone T. D.: 150'	0'- 4'	Clay and sand, gray-brown, with very fine sand and silt,
123′-135′	Clay, gray-brown, with very fine sand, slightly micaceous	Drill Hole	No. 377. Elevation 198'	4'- 20'	slightly micaceous Clay, light brown to buff,
135′-136′	Lignite and clay, dark brown to black		NW¼, Sec. 1, T. 9 S., R. 11 W.		with interbedded very fine sand, slightly micaceous
136′-139′	Clay, light brown, with very fine sand and silt		: G. L. Delevan 5/78.	20'- 27'	Clay, light gray-brown, slightly micaceous
139′-15 0 ′	Clay, brown T. D.: 150'	0'- 8'	Clay, light brown to tan, with very fine sand and silt	27'- 51'	Clay, gray, glauconitic, silty,
	1. 5 130	8'- 32'	Clay, buff, with very fine sand	E44 CO4	with very fine sand, slightly micaceous
	No. 374. Elevation 220'	32'- 58'	and silt, slightly micaceous Clay, gray, with very fine	51′- 63′	Sand, dark gray-green, silty, very fine, glauconitic
County: C			sand and silt, slightly mica- ceous, with a trace of lignite	63'- 66'	Clay and sand, dark gray, silty, glauconitic, very fine, slightly
	: G. L. Delevan 5/78.	58'- 70'	Clay, gray-brown, slightly micaceous	66'- 82'	micaceous Clay, dark gray, glauconitic
0'- 7'	Sand, dark reddish brown, very fine	70′-101′	Clay, gray, with very fine sand and silt with a trace of		with a trace of very fine sand, slightly micaceous
7'- 9' 9'- 28'	Clay, tan, slightly micaceous Clay, light gray, slightly mica-	101′-120′	fossiliferous limestone Sand and clay, gray, silty,	82′-125′	Clay, gray-brown, slightly mica- ceous
28'- 40'	ceous Clay, light blue-gray, with very		very fine, fossiliferous T. D.: 120'	125′-150′	Clay, gray, with very fine sand and silt, slightly fossiliferous
	fine sand and silt, slightly micaceous with a trace of		No. 378. Elevation 242'		and micaceous T. D.: 150'
40'- 56'	siderite Clay and sand, light blue-gray,	Location: County: 0	NW¼, Sec. 35, T. 8 S., R. 11 W. Develand		
	with very fine sand and silt, slightly micaceous	Logged by	: G. L. Delevan 5/78.		No. 381. Elevation 282' NE¼, Sec. 10, T. 8 S., R. 11 W.
56'- 87'	Clay, light blue-gray, slightly glauconitic, with very fine	0'- 7'	Sand and clay, light reddish brown, with very fine sand	County: C	
87′-121′	sand and silt Clay, gray, slightly glauconitic	7'- 27'		0'- 12'	
	with very fine sand and silt with a trace of siderite	27'- 65'	Clay, gray, slightly glauconitic	12'- 40'	Clay, light brown to buff, slightly micaceous
121′-138′	Clay and sand, gray, very fine, slightly micaceous	65′-75′	and slightly micaceous, slightly fossiliferous	40'- 55'	Clay, gray, slightly micaceous Sand and clay, dark gray-green,
138′-150′	Clay, brown, with very fine	05 -/5	Sand, dark gray, very fine, silty, glauconitic, slightly fossili-	554 504	glauconitic, slightly micaceous with a trace of siderite
	sand, slightly micaceous T. D.: 150'	75'- 94'	ferous Clay, gray, silty, slightly mica- ceous	55'- 72'	Clay, gray, with very fine sand and silt, slightly glauconitic and micaceous
		94′-132′	Clay, gray-brown, slightly mica- ceous	72'- 83'	Clay, light gray-brown, slightly glauconitic
	No. 375. Elevation 188' NW¼, Sec. 14, T. 9 S., R•11 W.	132'-147'	Clay, gray, with very fine sand and silt, slightly micaceous,	83'- 88'	Clay, gray, silty, slightly glau- conitic
County: C		147′-150′	and fossiliferous Sand, silty, very fine, slightly	88′-103′ 103′-128′	Clay, light gray-brown Sand, dark gray, very fine,
0'- 2'	Sand, reddish brown, very fine	147 100	micaceous T. D.: 150'	103-120	slightly glauconitic and mica-
2'- 19'	Clay, gray to tan, with very fine sand and silt	Drill Hala		128′-150′	ceous Clay, gray, with very fine sand,
19'- 38'	Clay, light blue-gray, with a trace of very fine sand, slightly	Location: County: C			slightly fossiliferous T. D.: 150'
38'- 52'	micaceous Clay, gray, with very fine sand	Logged by	: G. L. Delevan 5/78.	Drill Hole	No. 382. Elevation 262'
	and silt, slightly micaceous with a trace of siderite	0'- 18'	Clay, buff, silty, slightly mica- ceous	Location: County: C	NW¼, Sec. 2, T. 8 S., R. 11 W.
52'- 82'	Clay, gray-brown, slightly micaceous	18'- 29'	Clay, light brown, silty, slightly micaceous		: G. L. Delevan 5/78.
82′-108′	Clay, gray, slightly micaceous with a trace of siderite	29'- 50'	Clay, gray to gray-brown, slight- ly micaceous	0′- 12′	Clay, light brown, silty, slightly micaceous

12'- 4 0'	Clay, gray, slightly glauconitic, silty, slightly micaceous	112′-144′	Clay and sand, gray, very fine slightly micaceous, slightly		slightly micaceous with a trace of lignite
40′- 53 ′ 53′- 7 3 ′	Clay, gray Sand, dark gray-green, glauconi-	144′-150′	fossiliferous	114'-116'	Clay, brown to dark brown, with very fine sand and a
73′-102 ′	,, 0,,, ,		micaceous T. D.: 150'	116′-136′	trace of lignite Sand and silt, dark brown
102'-150'	and silt, slightly micaceous Clay, light gray-brown, slightly micaceous		No. 386. Elevation 220'	136′-150′	
	T. D.: 150'	County:		D-:11 11-1-	T. D.: 150'
Drill Hole	No. 383. Elevation 250'	0'- 14'	y: G. L. Delevan 5/78. Clay, mottled tan	Location:	No. 389. Elevation 160' NE¼, Sec. 5, T. 10 S., R. 11 W.
Location: County: C	NW¼, Sec. 7, T. 9 S., R. 10 W.	14'- 18'		County: C Logged by	r: G. L. Delevan 5/78.
	/: G. L. Delevan 5/78.	18'- 22'	Sand, greenish-gray, very fine, silty, glauconitic, slightly mica-	0'- 12'	
0'- 6'	Clay, light reddish brown, with trace of very fine sand	22′-103′	ceous Clay, gray-brown, silty, slightly	12'- 15'	micaceous Clay, gray-brown, with very fine
6'- 24'	Clay, light tan to buff, with very fine sand	22 100	micaceous with a trace of siderite	15'- 28'	sand Sand, fine to very fine, with
24'- 33'	Clay, light brown, with very fine sand, slightly micaceous	103′-113′		28'- 47'	pea gravel Clay, gray-brown, with very fine
33'- 42'	Clay, gray, with very fine sand and silt, slightly micaceous	113′-150′		47'- 48'	sand and silt, slightly micaceous Lignite and clay, dark brown
42'- 53 ' 53'- 76'	Clay, gray-brown		T. D.: 150'	48'- 88'	
	and silt, fossiliferous, slightly glauconitic, slightly micaceous	Drill Hole	No. 387. Elevation 223' NW¼, Sec. 16, T. 9 S., R. 10 W.		fine sand and silt, slightly micaceous and a trace of of lignite
76′-142′	Clay, gray, with very fine sand and silt, slightly fossiliferous,	County: (Cleveland /: G. L. Delevan 5/78.	88′- 91′	Clay, lignitic, black, with lignite, black, firm
142′-150′	slightly micaceous Sand and clay, gray, silty,	0'- 9'		91′-132′	
	very fine T. D.: 150'	9'- 38'	very fine sand Clay, tan to light brown, slightly	132′-150′	micaceous and a trace of lignite Clay, gray, with very fine sand,
Drill Hala	No. 204 El	38'- 46'	micaceous Clay, gray-brown, with very		slightly micaceous T. D.: 150'
Location: County: C	No. 384. Elevation 230' NE¼, Sec. 3, T. 9 S., R. 11 W.		fine sand and silt, slightly mica- ceous	Drill Hole	No. 390. Elevation 172'
	: G. L. Delevan 5/78.	46′- 51′	silty, very fine, slightly mica-	Location: County: C	SE¼, Sec. 6, T. 10 S., R. 11 W.
0'- 4'	Clay, reddish brown, with very fine sand	51'- 63'	ceous Clay and sand, gray-brown,		: G. L. Delevan 5/78.
4'- 13'	Clay, tan to light brown, with a trace of very fine sand	60/ 440/	silty, very fine, slightly glauconi- tic		Sand, light brown, fine, slightly micaceous
13'- 70'	Clay, gray to gray-brown, slight- ly micaceous	63′-112′ 112′-120′	Clay, gray-brown, silty Sand and clay, gray-brown,	22'- 38'	Sand, light gray, medium to fine, slightly micaceous, with a
70′- 88′	Clay, gray-brown, with very fine sand and silt, fossiliferous,	120/ 150/	silty, very fine, slightly mica- ceous	38'- 41'	trace of gray clay Lignite, black, firm to soft
88′-102′	slightly micaceous Sand, gray, silty, very fine,	120′-150′	Clay, gray-brown, with a trace of very fine sand and silt, slight-	41′- 57′	Clay, gray, silty, slightly mica- ceous
	slightly micaceous, slightly fossiliferous		ly micaceous T. D.: 150'	57'- 59'	Clay, gray, with interbedded dark brown clay, slightly mica-
102′-114′	Clay, gray, with very fine sand and silt, slightly micaceous	Drill Hole	No. 388. Elevation 147' NE¼, Sec. 33, T. 9 S., R. 11 W.	59'- 107 '	ceous Clay, light gray, slightly silty,
114'-150'	Clay, gray to gray-brown, slight- ly glauconitic, slightly mica-	County: C	leveland	107'-138'	slightly micaceous Clay, light gray-brown, with
	ceous, with a trace of siderite T. D.: 150'		Sand, light brown, fine, with	400/450/	very fine sand and silt, slightly micaceous
		27'- 53'	some pea gravel	138′-150′	Clay and sand, light gray-brown, very fine, slightly micaceous
Location:	No. 385. Elevation 235' SW¼, Sec. 17, T. 9 S., R. 10 W.		fine sand and silt, slightly micaceous and slightly carbon-		Core Interval 37'6" - 42'6" Recovered: Lost:
County: C Logged by	leveland : G. L. Delevan 5/78.	53'- 55'	aceous Clay, brown, with very fine		Recovered: Lost: 4'10" 8"
0'- 5'	Clay, reddish brown, with very		sand, slightly micaceous, with a trace of lignite		37'6" - 38' clay, gray, silty, with gravel
5'- 12'	fine sand Clay, mottled tan, with very	55'- 61'	Clay, gray, with very fine sand, slightly micaceous		38' - 38'2" lignite, black, friable
12'- 23'	fine sand Clay, tan to buff, slightly	61'- 71'	Clay, gray-brown, with very fine sand and silt, slightly micaceous		38'2" - 39'5" lignite, black, firm to friable
23'- 32'	micaceous Clay, reddish brown, with very	71'- 72' 72'- 77'	Clay, brown, with very fine sand Clay, gray and brown, with very		39'5" - 40'7" lignite, black, friable
32'- 52'	fine sand, slightly micaceous Clay, gray-brown, silty, slightly	77'- 86'	fine sand and a trace of lignite Sand, gray-brown, very fine,		40'7" - 41'0" lignite, with black to dark brown clay,
52'- 58'	Clay, gray, with very fine sand,		silty, with interbedded gray- brown clay		and silt partings 41'0" - 41'5" clay, gray-brown,
58′-105′	slightly micaceous Clay, gray-brown, silty, slightly	86′- 93′	Clay, gray-brown, with very fine sand and silt		with a trace of lignite and ligni- tic clay
105′-112′	micaceous Clay, gray-brown, with very fine	93′-96′	Lignite and lignitic clay, dark brown to black, soft		41'5" - 41'10" clay, gray- brown, silty, slightly micaceous
	sand, slightly micaceous	96′-114′	Clay, gray, with very fine sand,		T. D.: 150'

	No. 391. Elevation 198'		fine, with light gray clay binder,	102′-130′	Clay, brown, with very fine sand
.ocation: County: C	NE¼, Sec. 12, T. 10 S, R. 12 W.	39'- 62'	slightly micaceous Clay and sand, gray, very fine,		and silt, slightly micaceous, interbedded dark brown clay
	: G. L. Delevan 5/78.	39 - 62	with silty clay and a slight trace		and a trace of lignite
.ogged by	. G. E. Delevali 3/76.		of lignite	130'-150'	Clay, gray to brown, with very
0'- 19'	Clay, light tan to buff, with	62'- 63'	Lignite, black, firm		fine sand, slightly micaceous
	very fine sand, slightly mica-	63' 90'	Clay, gray to gray- brown, with		T. D.: 150'
	ceous		very fine sand and silt, slightly		
19'- 27'	Clay, gray-brown, with very fine		micaceous and slightly carbona-		No. 397. Elevation 252'
07/ 04/	sand and silt, slightly micaceous	00/ 445/	ceous and a trace of lignite		SW¼, Sec. 23, T. 10 S., R. 13 W
27'- 34' 34'- 54'	Sand, light gray, very fine	90′-115′	Sand and clay, gray-brown, very	County: E	
34 - 54	Sand, very fine, silty, slightly glauconitic, slightly micaceous	115′-150′	fine, with a trace of siderite Clay, gray-brown, with interbed-	Logged by	G. L. Delevan 6/78
54'- 54'6	" Lignite, black, firm	115-150	ded dark brown clay, slightly	0'- 18'	Clay, light brown to brown
54'6"-57	Clay, black, lignitic		micaceous	0 10	with fine sand, slightly mica-
57'- 58'	Clay, brown, with very fine		T. D.: 150'		ceous
	sand and silt, slightly mica-			18'- 33'	Sand and clay, brown, fine to
	ceous		No. 394. Elevation 180'		very fine, slightly micaceous
58′-100′	Clay, gray, silty, slightly mica-		NE¼, Sec. 17, T. 10 S., R. 12 W.	201 401	with silty clay
00/ 101/	ceus	County: [33'- 46'	Clay, gray-brown, slightly mica
00′-131′	Clay, gray, with very fine	Logged by	: G. L. Delevan 5/78.	46'- '48'	ceous, with a trace of siderite
	sand and silt, slightly mica- ceous	0'- 7'	Clay and sand, gray, fine,	48'- 56'	Lignite and clay, black, firm Clay, gray-brown, silty
31'-135'	Clay, dark brown to black,	0 - 7	slightly micaceous	56'- 62'	Clay, light gray, with silt
	lignitic	7'- 37'	Sand, light gray, medium to	00 02	slightly micaceous
35'-138'	Clay, gray, with very fine		fine, with a trace of gravel	62'- 75'	Clay, gray-brown, with very
	sand and silt	37'- 65'	Clay, light gray-brown, with		fine sand and silt, slightly
38'-140'	Clay, brown to dark brown,		fine sand, slightly micaceous,		micaceous with a trace of
	with a trace of lignite		silty, and a trace of gravel		siderite
40′-150′	Clay, gray, silty, slightly mica-	65'- 80'	Clay, brown, with interbedded	75'- 81'	Clay, dark brown, lignitic
	ceous		dark brown clay and a trace		silty, slightly micaceous
	T. D.: 150'	00/450/	of lignite	81'- 86'	Clay, light gray-brown, with
		80′-150′	Clay, gray, with very fine sand		very fine sand, slightly mica
Drill Hole	No. 392. Elevation 240'		and silt, slightly micaceous T. D.: 150'	86'- 94'	ceous
	NW¼, Sec. 11, T. 10 S., R. 12 W.		1. D 150	94'-101'	Sand, brown, very fine, silty Clay, gray-brown, with very
County: C				34 101	fine sand and silt, slightly
	: G. L. Delevan 5/78.	Drill Hole	No. 395. Elevation 197'		micaceous
			SW¼, Sec. 17, T. 10 S., R. 12 W.	101'-107'	Clay, light gray, with very fine
0'- 4'	Sand and clay, light reddish	County: D			sand and silt, slightly micaceous
	brown, very fine	Logged by	: G. L. Delevan 5/78.	107'-113'	Sand and clay, light gray, very
4'- 15'	Clay, tan, with very fine sand,				fine
45' 20'	slightly micaceous	0'- 9'	Clay and sand, gray to gray-	113′-128′	Clay, gray-brown, with very fine
15'- 32'	Sand, light gray-brown, fine to	0/ 00/	brown, fine, slightly micaceous	400/400/	sand and silt, slightly micaceou
32'- 48'	very fine	9'- 20' 20'- 33'	Clay, gray, with very fine sand	128′-136′	Clay, light gray, slightly silty
32 - 40	Clay, light gray-brown, with very fine sand, slightly mica-	20 - 33	Sand, light gray-brown, fine,	136′-140′	Clay, brown to light brown
	ceous, with a trace of lignite	221 421	slightly micaceous		with very fine sand and silt slightly micaceous, slightly
48'- 58'					
	Sand, grav, very fine with	33'- 42'	Clay, gray, with very fine sand,		
	Sand, gray, very fine, with light gray clay binder, slightly		slightly micaceous	140′-150′	carbonaceous
	light gray, very fine, with light gray clay binder, slightly micaceous	42'- 48'	slightly micaceous Sand, fine, with gray clay	140′-150′	carbonaceous Clay, gray-brown, silty
58'- 64'	light gray clay binder, slightly micaceous Clay and sand, light gray-brown,	42'- 48'	slightly micaceous Sand, fine, with gray clay	140′-150′	carbonaceous
	light gray clay binder, slightly micaceous Clay and sand, light gray-brown, very fine, slightly micaceous		slightly micaceous Sand, fine, with gray clay binder, slightly micaceous and slightly carbonaceous Clay, gray, with very fine sand	Drill Hole	carbonaceous Clay, gray-brown, silty T. D.: 150' No. 398. Elevation 248'
64'- 74'	light gray clay binder, slightly micaceous Clay and sand, light gray-brown, very fine, slightly micaceous Clay, light gray-brown, silty	42'- 48'	slightly micaceous Sand, fine, with gray clay binder, slightly micaceous and slightly carbonaceous Clay, gray, with very fine sand and silt, with interbedded dark	Drill Hole Location:	carbonaceous Clay, gray-brown, silty T. D.: 150' No. 398. Elevation 248' SE'4, Sec. 31, T. 10 S., R. 12 W
64'- 74' 74'- 74'6	light gray clay binder, slightly micaceous Clay and sand, light gray-brown, very fine, slightly micaceous Clay, light gray-brown, silty "Lignite, black, firm"	42'- 48'	slightly micaceous Sand, fine, with gray clay binder, slightly micaceous and slightly carbonaceous Clay, gray, with very fine sand and silt, with interbedded dark brown clay, slightly micaceous,	Drill Hole Location: County: [carbonaceous Clay, gray-brown, silty T. D.: 150' No. 398. Elevation 248' SE¼, Sec. 31, T. 10 S., R. 12 W Dallas
64'- 74' 74'- 74'6	light gray clay binder, slightly micaceous Clay and sand, light gray-brown, very fine, slightly micaceous Clay, light gray-brown, silty "Lignite, black, firm o" Clay and sand, gray, very	42'- 48' 48'- 70'	slightly micaceous Sand, fine, with gray clay binder, slightly micaceous and slightly carbonaceous Clay, gray, with very fine sand and silt, with interbedded dark brown clay, slightly micaceous, and a trace of lignite	Drill Hole Location: County: [carbonaceous Clay, gray-brown, silty T. D.: 150' No. 398. Elevation 248' SE'4, Sec. 31, T. 10 S., R. 12 W
64'- 74' 74'- 74'6 74'6''-12	light gray clay binder, slightly micaceous Clay and sand, light gray-brown, very fine, slightly micaceous Clay, light gray-brown, silty '' Lignite, black, firm D' Clay and sand, gray, very fine, slightly micaceous	42'- 48'	slightly micaceous Sand, fine, with gray clay binder, slightly micaceous and slightly carbonaceous Clay, gray, with very fine sand and silt, with interbedded dark brown clay, slightly micaceous, and a trace of lignite Silt, gray-brown, with very fine	Drill Hole Location: County: E Logged by	carbonaceous Clay, gray-brown, silty T. D.: 150' No. 398. Elevation 248' SE¼, Sec. 31, T. 10 S., R. 12 W Dallas T. G. L. Delevan 6/78
64'- 74' 74'- 74'6	light gray clay binder, slightly micaceous Clay and sand, light gray-brown, very fine, slightly micaceous Clay, light gray-brown, silty '' Lignite, black, firm D' Clay and sand, gray, very fine, slightly micaceous Sand, very fine, with gray	42'- 48' 48'- 70'	slightly micaceous Sand, fine, with gray clay binder, slightly micaceous and slightly carbonaceous Clay, gray, with very fine sand and silt, with interbedded dark brown clay, slightly micaceous, and a trace of lignite Silt, gray-brown, with very fine sand, slightly micaceous with	Drill Hole Location: County: [carbonaceous Clay, gray-brown, silty T. D.: 150' No. 398. Elevation 248' SE¼, Sec. 31, T. 10 S., R. 12 W Dallas G. L. Delevan 6/78 Sand and clay, reddish brown
64'- 74' 74'- 74'6 74'6''-12	light gray clay binder, slightly micaceous Clay and sand, light gray-brown, very fine, slightly micaceous Clay, light gray-brown, silty "Lignite, black, firm D' Clay and sand, gray, very fine, slightly micaceous Sand, very fine, with gray clay and a trace of siderite	42'- 48' 48'- 70'	slightly micaceous Sand, fine, with gray clay binder, slightly micaceous and slightly carbonaceous Clay, gray, with very fine sand and silt, with interbedded dark brown clay, slightly micaceous, and a trace of lignite Silt, gray-brown, with very fine sand, slightly micaceous with a trace of lignite	Drill Hole Location: County: E Logged by	carbonaceous Clay, gray-brown, silty T. D.: 150' No. 398. Elevation 248' SE'4, Sec. 31, T. 10 S., R. 12 W Dallas G. G. L. Delevan 6/78 Sand and clay, reddish brown with very fine sand
64'- 74' 74'- 74'6 74'6"-12' 20'-127'	light gray clay binder, slightly micaceous Clay and sand, light gray-brown, very fine, slightly micaceous Clay, light gray-brown, silty '' Lignite, black, firm D' Clay and sand, gray, very fine, slightly micaceous Sand, very fine, with gray	42'- 48' 48'- 70'	slightly micaceous Sand, fine, with gray clay binder, slightly micaceous and slightly carbonaceous Clay, gray, with very fine sand and silt, with interbedded dark brown clay, slightly micaceous, and a trace of lignite Silt, gray-brown, with very fine sand, slightly micaceous with	Drill Hole Location: County: E Logged by	carbonaceous Clay, gray-brown, silty T. D.: 150' No. 398. Elevation 248' SE'A, Sec. 31, T. 10 S., R. 12 W Dallas : G. L. Delevan 6/78 Sand and clay, reddish brown with very fine sand Clay, light tan to buff, slightly
64'- 74' 74'- 74'6 74'6"-12' 20'-127'	light gray clay binder, slightly micaceous Clay and sand, light gray-brown, very fine, slightly micaceous Clay, light gray-brown, silty "Lignite, black, firm D' Clay and sand, gray, very fine, slightly micaceous Sand, very fine, with gray clay and a trace of siderite Clay, brown, with very fine sand and interbedded black and dark brown clay, and a	42'- 48' 48'- 70' 70'-150'	slightly micaceous Sand, fine, with gray clay binder, slightly micaceous and slightly carbonaceous Clay, gray, with very fine sand and silt, with interbedded dark brown clay, slightly micaceous, and a trace of lignite Silt, gray-brown, with very fine sand, slightly micaceous with a trace of lignite	Drill Hole Location: County: E Logged by	carbonaceous Clay, gray-brown, silty T. D.: 150' No. 398. Elevation 248' SE¼, Sec. 31, T. 10 S., R. 12 W Dallas G. G. L. Delevan 6/78 Sand and clay, reddish brown with very fine sand Clay, light tan to buff, slightly micaceous, with a trace o
64'- 74' 74'- 74'6 74'6''-12' 20'-127' 27'-144'	light gray clay binder, slightly micaceous Clay and sand, light gray-brown, very fine, slightly micaceous Clay, light gray-brown, silty "Lignite, black, firm 0" Clay and sand, gray, very fine, slightly micaceous Sand, very fine, with gray clay and a trace of siderite Clay, brown, with very fine sand and interbedded black and dark brown clay, and a trace of lignite	42'- 48' 48'- 70' 70'-150'	slightly micaceous Sand, fine, with gray clay binder, slightly micaceous and slightly carbonaceous Clay, gray, with very fine sand and slit, with interbedded dark brown clay, slightly micaceous, and a trace of lignite Silt, gray-brown, with very fine sand, slightly micaceous with a trace of lignite T. D.: 150'	Drill Hole Location: County: E Logged by	carbonaceous Clay, gray-brown, silty T. D.: 150' No. 398. Elevation 248' SE'A, Sec. 31, T. 10 S., R. 12 W Dallas : G. L. Delevan 6/78 Sand and clay, reddish brown with very fine sand Clay, light tan to buff, slightly
64'- 74' 74'- 74'6 74'6"-12' 20'-127'	light gray clay binder, slightly micaceous Clay and sand, light gray-brown, very fine, slightly micaceous Clay, light gray-brown, silty "Lignite, black, firm of Clay and sand, gray, very fine, slightly micaceous Sand, very fine, with gray clay and a trace of siderite Clay, brown, with very fine sand and interbedded black and dark brown clay, and a trace of lignite Sand and clay, light gray,	42'- 48' 48'- 70' 70'-150'	slightly micaceous Sand, fine, with gray clay binder, slightly micaceous and slightly carbonaceous Clay, gray, with very fine sand and silt, with interbedded dark brown clay, slightly micaceous, and a trace of lignite Silt, gray-brown, with very fine sand, slightly micaceous with a trace of lignite T. D.: 150' No. 396. Elevation 236' NW¼, Sec. 24, T. 10 S., R. 13 W.	Drill Hole Location: County: E Logged by 0'- 3' 3'- 20'	carbonaceous Clay, gray-brown, silty T. D.: 150' No. 398. Elevation 248' SE'4, Sec. 31, T. 10 S., R. 12 W ballas G. G. L. Delevan 6/78 Sand and clay, reddish brown with very fine sand Clay, light tan to buff, slightly micaceous, with a trace of lignite and brown clay
64'- 74' 74'- 74'6 74'6''-12' 20'-127' 27'-144'	light gray clay binder, slightly micaceous Clay and sand, light gray-brown, very fine, slightly micaceous Clay, light gray-brown, silty "Lignite, black, firm "D" Clay and sand, gray, very fine, slightly micaceous Sand, very fine, with gray clay and a trace of siderite Clay, brown, with very fine sand and interbedded black and dark brown clay, and a trace of lignite Sand and clay, light gray, very fine, slightly micaceous	42'- 48' 48'- 70' 70'-150' Drill Hole Location: County: [slightly micaceous Sand, fine, with gray clay binder, slightly micaceous and slightly carbonaceous Clay, gray, with very fine sand and silt, with interbedded dark brown clay, slightly micaceous, and a trace of lignite Silt, gray-brown, with very fine sand, slightly micaceous with a trace of lignite T. D.: 150' No. 396. Elevation 236' NW¼, Sec. 24, T. 10 S., R. 13 W.	Drill Hole Location: County: E Logged by 0'- 3' 3'- 20'	carbonaceous Clay, gray-brown, silty T. D.: 150' No. 398. Elevation 248' SE¼, Sec. 31, T. 10 S., R. 12 W Sallas G. L. Delevan 6/78 Sand and clay, reddish brown with very fine sand Clay, light tan to buff, slightly micaceous, with a trace o lignite and brown clay Clay, light gray-brown, silty slightly micaceous Clay, gray to gray-green, with
64'- 74' 74'- 74'6 74'6''-12' 20'-127' 27'-144'	light gray clay binder, slightly micaceous Clay and sand, light gray-brown, very fine, slightly micaceous Clay, light gray-brown, silty "Lignite, black, firm of Clay and sand, gray, very fine, slightly micaceous Sand, very fine, with gray clay and a trace of siderite Clay, brown, with very fine sand and interbedded black and dark brown clay, and a trace of lignite Sand and clay, light gray,	42'- 48' 48'- 70' 70'-150' Drill Hole Location: County: [Logged by	slightly micaceous Sand, fine, with gray clay binder, slightly micaceous and slightly carbonaceous Clay, gray, with very fine sand and silt, with interbedded dark brown clay, slightly micaceous, and a trace of lignite Silt, gray-brown, with very fine sand, slightly micaceous with a trace of lignite T. D.: 150' No. 396. Elevation 236' NW¼, Sec. 24, T. 10 S., R. 13 W. Dallas C. G. L. Delevan 5/78.	Drill Hole Location: County: E Logged by 0'- 3' 3'- 20'	carbonaceous Clay, gray-brown, silty T. D.: 150' No. 398. Elevation 248' SE'A, Sec. 31, T. 10 S., R. 12 W Dallas G. G. L. Delevan 6/78 Sand and clay, reddish brown with very fine sand Clay, light tan to buff, slightly micaceous, with a trace o lignite and brown clay Clay, light gray-brown, silty slightly micaceous Clay, gray to gray-green, with very fine sand and silt, slightly
64'- 74' 74'- 74'6 74'6''-12' 20'-127' 27'-144'	light gray clay binder, slightly micaceous Clay and sand, light gray-brown, very fine, slightly micaceous Clay, light gray-brown, silty "Lignite, black, firm "D" Clay and sand, gray, very fine, slightly micaceous Sand, very fine, with gray clay and a trace of siderite Clay, brown, with very fine sand and interbedded black and dark brown clay, and a trace of lignite Sand and clay, light gray, very fine, slightly micaceous	42'- 48' 48'- 70' 70'-150' Drill Hole Location: County: [slightly micaceous Sand, fine, with gray clay binder, slightly micaceous and slightly carbonaceous Clay, gray, with very fine sand and slit, with interbedded dark brown clay, slightly micaceous, and a trace of lignite Silt, gray-brown, with very fine sand, slightly micaceous with a trace of lignite T. D.: 150' No. 396. Elevation 236' NW¼, Sec. 24, T. 10 S., R. 13 W. Dallas C. G. L. Delevan 5/78. Sand, light brown, very fine,	Drill Hole Location: County: E Logged by 0'- 3' 3'- 20'	carbonaceous Clay, gray-brown, silty T. D.: 150' No. 398. Elevation 248' SE%, Sec. 31, T. 10 S., R. 12 W Dallas G. G. L. Delevan 6/78 Sand and clay, reddish brown with very fine sand Clay, light tan to buff, slightly micaceous, with a trace o lignite and brown clay Clay, light gray-brown, silty slightly micaceous Clay, gray to gray-green, with very fine sand and silt, slightly micaceous and slightly carbona
64'- 74' 74'- 74'6 74'6"-12' 20'-127' 27'-144' 44'-150'	light gray clay binder, slightly micaceous Clay and sand, light gray-brown, very fine, slightly micaceous Clay, light gray-brown, silty '' Lignite, black, firm D' Clay and sand, gray, very fine, slightly micaceous Sand, very fine, with gray clay and a trace of siderite Clay, brown, with very fine sand and interbedded black and dark brown clay, and a trace of lignite Sand and clay, light gray, very fine, slightly micaceous T. D.: 150'	42'- 48' 48'- 70' 70'-150' Drill Hole Location: County: [Logged by	slightly micaceous Sand, fine, with gray clay binder, slightly micaceous and slightly carbonaceous Clay, gray, with very fine sand and silt, with interbedded dark brown clay, slightly micaceous, and a trace of lignite Silt, gray-brown, with very fine sand, slightly micaceous with a trace of lignite T. D.: 150' No. 396. Elevation 236' NW¼, Sec. 24, T. 10 S., R. 13 W. Dallas C. G. L. Delevan 5/78. Sand, light brown, very fine, slightly micaceous, with a trace	Drill Hole Location: County: E Logged by 0'- 3' 3'- 20' 20'- 27' 27'- 48'	carbonaceous Clay, gray-brown, silty T. D.: 150' No. 398. Elevation 248' SE¼, Sec. 31, T. 10 S., R. 12 W Dallas G. L. Delevan 6/78 Sand and clay, reddish brown with very fine sand Clay, light tan to buff, slightly micaceous, with a trace o lignite and brown clay Clay, light gray-brown, silty slightly micaceous Clay, gray to gray-green, with very fine sand and silt, slightly micaceous and slightly carbona ceous
64'- 74' 74'- 74'6 74'6"-12! 20'-127' 27'-144' 44'-150'	light gray clay binder, slightly micaceous Clay and sand, light gray-brown, very fine, slightly micaceous Clay, light gray-brown, silty "Lignite, black, firm "Clay and sand, gray, very fine, slightly micaceous Sand, very fine, with gray clay and a trace of siderite Clay, brown, with very fine sand and interbedded black and dark brown clay, and a trace of lignite Sand and clay, light gray, very fine, slightly micaceous T. D.: 150"	42'- 48' 48'- 70' 70'-150' Drill Hole Location: County: [Logged by 0'- 22'	slightly micaceous Sand, fine, with gray clay binder, slightly micaceous and slightly carbonaceous Clay, gray, with very fine sand and silt, with interbedded dark brown clay, slightly micaceous, and a trace of lignite Silt, gray-brown, with very fine sand, slightly micaceous with a trace of lignite T. D.: 150' No. 396. Elevation 236' NW¼, Sec. 24, T. 10 S., R. 13 W. Dallas C: G. L. Delevan 5/78. Sand, light brown, very fine, slightly micaceous, with a trace of tan clay	Drill Hole Location: County: E Logged by 0'- 3' 3'- 20' 20'- 27' 27'- 48'	carbonaceous Clay, gray-brown, silty T. D.: 150' No. 398. Elevation 248' SE'4, Sec. 31, T. 10 S., R. 12 W Dallas G. G. L. Delevan 6/78 Sand and clay, reddish brown with very fine sand Clay, light tan to buff, slightly micaceous, with a trace o lignite and brown clay Clay, light gray-brown, silty slightly micaceous Clay, gray to gray-green, with very fine sand and silt, slightly micaceous and slightly carbona ceous Lignite, black, firm
64'- 74' 74'- 74'6 74'6"-12! 20'-127' 27'-144' 44'-150'	light gray clay binder, slightly micaceous Clay and sand, light gray-brown, very fine, slightly micaceous Clay, light gray-brown, silty "Lignite, black, firm" O' Clay and sand, gray, very fine, slightly micaceous Sand, very fine, with gray clay and a trace of siderite Clay, brown, with very fine sand and interbedded black and dark brown clay, and a trace of lignite Sand and clay, light gray, very fine, slightly micaceous T. D.: 150' 393. Elevation 251' NW%, Sec. 10, T. 10 S., R. 12 W.	42'- 48' 48'- 70' 70'-150' Drill Hole Location: County: [Logged by	slightly micaceous Sand, fine, with gray clay binder, slightly micaceous and slightly carbonaceous Clay, gray, with very fine sand and slit, with interbedded dark brown clay, slightly micaceous, and a trace of lignite Silt, gray-brown, with very fine sand, slightly micaceous with a trace of lignite T. D.: 150' No. 396. Elevation 236' NW¼, Sec. 24, T. 10 S., R. 13 W. Dallas T: G. L. Delevan 5/78. Sand, light brown, very fine, slightly micaceous, with a trace of tan clay Clay, gray-brown, slightly silty	Drill Hole Location: County: E Logged by 0'- 3' 3'- 20' 20'- 27' 27'- 48'	carbonaceous Clay, gray-brown, silty T. D.: 150' No. 398. Elevation 248' SE%, Sec. 31, T. 10 S., R. 12 W Dallas G. G. L. Delevan 6/78 Sand and clay, reddish brown with very fine sand Clay, light tan to buff, slightly micaceous, with a trace o lignite and brown clay Clay, light gray-brown, silty slightly micaceous Clay, gray to gray-green, with very fine sand and silt, slightly micaceous and slightly carbona ceous Lignite, black, firm Clay, black to dark brown
64'- 74' 74'- 74'6 74'6"-12' 20'-127' 27'-144' 44'-150' Orill Hole ocation:	light gray clay binder, slightly micaceous Clay and sand, light gray-brown, very fine, slightly micaceous Clay, light gray-brown, silty "Lignite, black, firm" O' Clay and sand, gray, very fine, slightly micaceous Sand, very fine, with gray clay and a trace of siderite Clay, brown, with very fine sand and interbedded black and dark brown clay, and a trace of lignite Sand and clay, light gray, very fine, slightly micaceous T. D.: 150' 393. Elevation 251' NW%, Sec. 10, T. 10 S., R. 12 W.	42'- 48' 48'- 70' 70'-150' Drill Hole Location: County: [Logged by 0'- 22'	slightly micaceous Sand, fine, with gray clay binder, slightly micaceous and slightly carbonaceous Clay, gray, with very fine sand and slit, with interbedded dark brown clay, slightly micaceous, and a trace of lignite Silt, gray-brown, with very fine sand, slightly micaceous with a trace of lignite T. D.: 150' No. 396. Elevation 236' NW¼, Sec. 24, T. 10 S., R. 13 W. Dallas T: G. L. Delevan 5/78. Sand, light brown, very fine, slightly micaceous, with a trace of tan clay Clay, gray-brown, slightly silty and slightly micaceous	Drill Hole Location: County: E Logged by 0'- 3' 3'- 20' 20'- 27' 27'- 48' 48'- 52' 52'- 53'	carbonaceous Clay, gray-brown, silty T. D.: 150' No. 398. Elevation 248' SE'4, Sec. 31, T. 10 S., R. 12 W Dallas C. G. L. Delevan 6/78 Sand and clay, reddish brown with very fine sand Clay, light tan to buff, slightly micaceous, with a trace o lignite and brown clay Clay, light gray-brown, silty slightly micaceous Clay, gray to gray-green, with very fine sand and silt, slightly micaceous Clay, gray to gray-green, with very fine sand and silt, slightly micaceous Lignite, black, firm Clay, black, to dark brown lignitic
64'- 74' 74'- 74'6 74'6"-12 20'-127' 27'-144' 44'-150' Drill Hole ocation: County: Cogged by	light gray clay binder, slightly micaceous Clay and sand, light gray-brown, very fine, slightly micaceous Clay, light gray-brown, silty '' Lignite, black, firm D' Clay and sand, gray, very fine, slightly micaceous Sand, very fine, with gray clay and a trace of siderite Clay, brown, with very fine sand and interbedded black and dark brown clay, and a trace of lignite Sand and clay, light gray, very fine, slightly micaceous T. D.: 150' 393. Elevation 251' NW¼, Sec. 10, T. 10 S., R. 12 W. Eleveland	42'- 48' 48'- 70' 70'-150' Drill Hole Location: County: Logged by 0'- 22' 22'- 28'	slightly micaceous Sand, fine, with gray clay binder, slightly micaceous and slightly carbonaceous Clay, gray, with very fine sand and silt, with interbedded dark brown clay, slightly micaceous, and a trace of lignite Silt, gray-brown, with very fine sand, slightly micaceous with a trace of lignite T. D.: 150' No. 396. Elevation 236' NW'4, Sec. 24, T. 10 S., R. 13 W. Dallas C: G. L. Delevan 5/78. Sand, light brown, very fine, slightly micaceous, with a trace of tan clay Clay, gray-brown, slightly silty and slightly micaceous S'' Clay, dark brown to black,	Drill Hole Location: County: E Logged by 0'- 3' 3'- 20' 20'- 27' 27'- 48'	carbonaceous Clay, gray-brown, silty T. D.: 150' No. 398. Elevation 248' SE¼, Sec. 31, T. 10 S., R. 12 W Dallas G. G. L. Delevan 6/78 Sand and clay, reddish brown with very fine sand Clay, light tan to buff, slightly micaceous, with a trace o lignite and brown clay Clay, light gray-brown, silty slightly micaceous Clay, gray to gray-green, with very fine sand and silt, slightly micaceous and slightly carbona ceous Lignite, black, firm Clay, black to dark brown lignitic Sand, gray, very fine, with
64'- 74' 74'- 74'6 74'6"-12' 20'-127' 27'-144' 44'-150' Orill Hole cocation: county: C	light gray clay binder, slightly micaceous Clay and sand, light gray-brown, very fine, slightly micaceous Clay, light gray-brown, silty "Lignite, black, firm of Clay and sand, gray, very fine, slightly micaceous Sand, very fine, with gray clay and a trace of siderite Clay, brown, with very fine sand and interbedded black and dark brown clay, and a trace of lignite Sand and clay, light gray, very fine, slightly micaceous T. D.: 150'	42'- 48' 48'- 70' 70'-150' Drill Hole Location: County: Logged by 0'- 22' 22'- 28' 28'- 30'6	slightly micaceous Sand, fine, with gray clay binder, slightly micaceous and slightly carbonaceous Clay, gray, with very fine sand and slit, with interbedded dark brown clay, slightly micaceous, and a trace of lignite Silt, gray-brown, with very fine sand, slightly micaceous with a trace of lignite T. D.: 150' No. 396. Elevation 236' NW¼, Sec. 24, T. 10 S., R. 13 W. Dallas T: G. L. Delevan 5/78. Sand, light brown, very fine, slightly micaceous, with a trace of tan clay Clay, gray-brown, slightly silty and slightly micaceous Tillignite, with a trace of black soft lignite	Drill Hole Location: County: E Logged by 0'- 3' 3'- 20' 20'- 27' 27'- 48' 48'- 52' 52'- 53'	carbonaceous Clay, gray-brown, silty T. D.: 150' No. 398. Elevation 248' SE%, Sec. 31, T. 10 S., R. 12 W Dallas G. G. L. Delevan 6/78 Sand and clay, reddish brown with very fine sand Clay, light tan to buff, slightly micaceous, with a trace of lightly micaceous, with a trace of lightly micaceous Clay, gray to gray-green, with very fine sand and silt, slightly micaceous Clay, gray to gray-green, with very fine sand and silt, slightly micaceous and slightly carbonaceous Lignite, black, firm Clay, black to dark brown lignitic Sand, gray, very fine, with clay binder, slightly micaceous
64'- 74' 74'- 74'6 74'6"-12 20'-127' 27'-144' 44'-150' Drill Hole ocation: County: Cogged by	light gray clay binder, slightly micaceous Clay and sand, light gray-brown, very fine, slightly micaceous Clay, light gray-brown, silty "Lignite, black, firm D' Clay and sand, gray, very fine, slightly micaceous Sand, very fine, with gray clay and a trace of siderite Clay, brown, with very fine sand and interbedded black and dark brown clay, and a trace of lignite Sand and clay, light gray, very fine, slightly micaceous T. D.: 150' 393. Elevation 251' NW¼, Sec. 10, T. 10 S., R. 12 W. Cleveland G. G. L.Delevan 5/78, Sand, light brown, very fine Clay, light tan to buff, with	42'- 48' 48'- 70' 70'-150' Drill Hole Location: County: Logged by 0'- 22' 22'- 28' 28'- 30'6	slightly micaceous Sand, fine, with gray clay binder, slightly micaceous and slightly carbonaceous Clay, gray, with very fine sand and silt, with interbedded dark brown clay, slightly micaceous, and a trace of lignite Silt, gray-brown, with very fine sand, slightly micaceous with a trace of lignite T. D.: 150' No. 396. Elevation 236' NW%, Sec. 24, T. 10 S., R. 13 W. Dallas G. L. Delevan 5/78. Sand, light brown, very fine, slightly micaceous, with a trace of tan clay Clay, gray-brown, slightly silty and slightly micaceous Clay, dark brown to black, lignitic, with a trace of black soft lignite ' Clay, light gray, with very fine	Drill Hole Location: County: E Logged by 0'- 3' 3'- 20' 20'- 27' 27'- 48' 48'- 52' 52'- 53' 53'- 63'	carbonaceous Clay, gray-brown, silty T. D.: 150' No. 398. Elevation 248' SE¼, Sec. 31, T. 10 S., R. 12 W ballas G. G. L. Delevan 6/78 Sand and clay, reddish brown with very fine sand Clay, light tan to buff, slightly micaceous, with a trace o lignite and brown clay Clay, light gray-brown, silty slightly micaceous Clay, gray to gray-green, with very fine sand and silt, slightly micaceous and slightly carbona ceous Lignite, black, firm Clay, black to dark brown lignitic Sand, gray, very fine, with
64'- 74' 74'- 74'6 74'6"-12' 20'-127' 27'-144' 44'-150' Orill Hole cocation: county: C	light gray clay binder, slightly micaceous Clay and sand, light gray-brown, very fine, slightly micaceous Clay, light gray-brown, silty "Lignite, black, firm" of Clay and sand, gray, very fine, slightly micaceous Sand, very fine, with gray clay and a trace of siderite Clay, brown, with very fine sand and interbedded black and dark brown clay, and a trace of lignite Sand and clay, light gray, very fine, slightly micaceous T. D.: 150' 393. Elevation 251' NW¼, Sec. 10, T. 10 S., R. 12 W. Eleveland: G. L.Delevan 5/78, Sand, light brown, very fine Clay, light tan to buff, with very fine sand and silt, slightly wicaceous fine sand and silt, slightly with very fine sand and silt, slightly with very fine sand and silt, slightly with very fine sand and silt, slightly	42'- 48' 48'- 70' 70'-150' Drill Hole Location: County: [Logged by 0'- 22' 22'- 28' 28'- 30'6 30'6''-38	slightly micaceous Sand, fine, with gray clay binder, slightly micaceous and slightly carbonaceous Clay, gray, with very fine sand and slift, with interbedded dark brown clay, slightly micaceous, and a trace of lignite Silt, gray-brown, with very fine sand, slightly micaceous with a trace of lignite T. D.: 150' No. 396. Elevation 236' NW¼, Sec. 24, T. 10 S., R. 13 W. Dallas C. G. L. Delevan 5/78. Sand, light brown, very fine, slightly micaceous, with a trace of tan clay Clay, gray-brown, slightly silty and slightly micaceous S'' Clay, dark brown to black, lignitic, with a trace of black soft lignite Clay, light gray, with very fine sand and slit, slightly micaceous	Drill Hole Location: County: E Logged by 0'- 3' 3'- 20' 20'- 27' 27'- 48' 48'- 52' 52'- 53' 53'- 63'	carbonaceous Clay, gray-brown, silty T. D.: 150' No. 398. Elevation 248' SE%, Sec. 31, T. 10 S., R. 12 W Dallas G. G. L. Delevan 6/78 Sand and clay, reddish brown with very fine sand Clay, light tan to buff, slightly micaceous, with a trace or lignite and brown clay Clay, light gray-brown, silty slightly micaceous Clay, gray to gray-green, with very fine sand and silt, slightly micaceous Clay, gray to gray-green, with very fine sand and silt, slightly micaceous Lignite, black, firm Clay, black to dark brown lignitic Sand, gray, very fine, with clay binder, slightly micaceous Clay, gray-brown, silty, slightly micaceous Clay, and sand, brown to dark
64'- 74' 74'- 74'6 74'6"-12' 20'-127' 27'-144' 44'-150' Drill Hole cocation: county: C cogged by 0'- 3' 3'- 15'	light gray clay binder, slightly micaceous Clay and sand, light gray-brown, very fine, slightly micaceous Clay, light gray-brown, silty gray-brown, silty gray-brown, silty gray-brown, silty gray clay and sand, gray, very fine, slightly micaceous Sand, very fine, with gray clay and a trace of siderite Clay, brown, with very fine sand and interbedded black and dark brown clay, and a trace of lignite Sand and clay, light gray, very fine, slightly micaceous T. D.: 150' 393. Elevation 251' NW¼, Sec. 10, T. 10 S., R. 12 W. Cleveland G. G. L. Delevan 5/78, Sand, light brown, very fine Clay, light tan to buff, with very fine sand and silt, slightly micaceous	42'- 48' 48'- 70' 70'-150' Drill Hole Location: County: [Logged by 0'- 22' 22'- 28' 28'- 30'6' 30'6''-38 38'- 48'	slightly micaceous Sand, fine, with gray clay binder, slightly micaceous and slightly carbonaceous Clay, gray, with very fine sand and slift, with interbedded dark brown clay, slightly micaceous, and a trace of lignite Silt, gray-brown, with very fine sand, slightly micaceous with a trace of lignite T. D.: 150' No. 396. Elevation 236' NW¼, Sec. 24, T. 10 S., R. 13 W. Dallas T: G. L. Delevan 5/78. Sand, light brown, very fine, slightly micaceous, with a trace of tan clay Clay, gray-brown, slightly silty and slightly micaceous T: Clay, dark brown to black, lignitic, with a trace of black soft lignite Clay, light gray, with very fine sand and silt, slightly micaceous Clay, gray-brown, slightly micaceous Clay, gray-brown, slightly micaceous Clay, gray-brown, slightly micaceous Clay, gray-brown, slightly micaceous	Drill Hole Location: County: E Logged by 0'- 3' 3'- 20' 20'- 27' 27'- 48' 48'- 52' 52'- 53' 53'- 63'	carbonaceous Clay, gray-brown, silty T. D.: 150' No. 398. Elevation 248' SE%, Sec. 31, T. 10 S., R. 12 W Dallas C. G. L. Delevan 6/78 Sand and clay, reddish brown with very fine sand Clay, light tan to buff, slightly micaceous, with a trace o lignite and brown clay Clay, light gray-brown, silty slightly micaceous Clay, gray to gray-green, with very fine sand and silt, slightly micaceous Lignite, black, firm Clay, black to dark brown lignitic Sand, gray, very fine, with clay binder, slightly micaceous Clay, gray-brown, silty, slightly micaceous Clay, gray-brown, silty, slightly micaceous Clay, gray-brown, silty, slightly micaceous Clay and sand, brown to dark brown, with very fine sand
64'- 74' 74'- 74'6 74'6"-12' 20'-127' 27'-144' 44'-150' Orill Hole cocation: county: C	light gray clay binder, slightly micaceous Clay and sand, light gray-brown, very fine, slightly micaceous Clay, light gray-brown, silty "Lignite, black, firm "D' Clay and sand, gray, very fine, slightly micaceous Sand, very fine, with gray clay and a trace of siderite Clay, brown, with very fine sand and interbedded black and dark brown clay, and a trace of lignite Sand and clay, light gray, very fine, slightly micaceous T. D.: 150' 393. Elevation 251' NW¼, Sec. 10, T. 10 S., R. 12 W. Cleveland T. G. L. Delevan 5/78, Sand, light brown, very fine Clay, light tan to buff, with very fine sand and silt, slightly micaceous Clay and sand, light reddish	42'- 48' 48'- 70' 70'-150' Drill Hole Location: County: [Logged by 0'- 22' 22'- 28' 28'- 30'6 30'6''-38	slightly micaceous Sand, fine, with gray clay binder, slightly micaceous and slightly carbonaceous Clay, gray, with very fine sand and silt, with interbedded dark brown clay, slightly micaceous, and a trace of lignite Silt, gray-brown, with very fine sand, slightly micaceous with a trace of lignite T. D.: 150' No. 396. Elevation 236' NW¼, Sec. 24, T. 10 S., R. 13 W. Dallas : G. L. Delevan 5/78. Sand, light brown, very fine, slightly micaceous, with a trace of tan clay Clay, gray-brown, slightly silty and slightly micaceous '' Clay, dark brown to black, lignitic, with a trace of black soft lignite ' Clay, light gray, with very fine sand and silt, slightly micaceous Clay, gray-brown, silty Clay, brown, with very fine	Drill Hole Location: County: E Logged by 0'- 3' 3'- 20' 20'- 27' 27'- 48' 48'- 52' 52'- 53' 53'- 63' 63'- 70' 70'- 82'	carbonaceous Clay, gray-brown, silty T. D.: 150' No. 398. Elevation 248' SE'4, Sec. 31, T. 10 S., R. 12 W Dallas G. G. L. Delevan 6/78 Sand and clay, reddish brown with very fine sand Clay, light tan to buff, slightly micaceous, with a trace o lignite and brown clay Clay, light gray-brown, silty slightly micaceous Clay, gray to gray-green, with very fine sand and silt, slightly with with very fine sand slightly carbonateous Lignite, black, firm Clay, black to dark brown lignific Sand, gray, very fine, with clay binder, slightly micaceous Clay, gray-brown, silty, slightly micaceous Clay, gray-brown, silty, slightly micaceous Clay and sand, brown to dark brown, with very fine sand slightly micaceous
64'- 74' 74'- 74'6 74'6"-12' 20'-127' 27'-144' 44'-150' Drill Hole cocation: county: C cogged by 0'- 3' 3'- 15'	light gray clay binder, slightly micaceous Clay and sand, light gray-brown, very fine, slightly micaceous Clay, light gray-brown, silty "Lignite, black, firm" of Clay and sand, gray, very fine, slightly micaceous Sand, very fine, with gray clay and a trace of siderite Clay, brown, with very fine sand and interbedded black and dark brown clay, and a trace of lignite Sand and clay, light gray, very fine, slightly micaceous T. D.: 150' 393. Elevation 251' NW¼, Sec. 10, T. 10 S., R. 12 W. Cleveland: G. L. Delevan 5/78, Sand, light brown, very fine Clay, light tan to buff, with very fine sand and silt, slightly micaceous Clay and sand, light reddish brown, very fine, slightly micaceous, very fine, slightly micaceous Clay and sand, light reddish brown, very fine, slightly mica-	42'- 48' 48'- 70' 70'-150' Drill Hole Location: County: [Logged by 0'- 22' 22'- 28' 28'- 30'6' 30'6''-38 38'- 48'	slightly micaceous Sand, fine, with gray clay binder, slightly micaceous and slightly carbonaceous Clay, gray, with very fine sand and slift, with interbedded dark brown clay, slightly micaceous, and a trace of lignite Silt, gray-brown, with very fine sand, slightly micaceous with a trace of lignite T. D.: 150' No. 396. Elevation 236' NW¼, Sec. 24, T. 10 S., R. 13 W. Dallas C. G. L. Delevan 5/78. Sand, light brown, very fine, slightly micaceous, with a trace of tan clay Clay, gray-brown, slightly silty and slightly micaceous S'' Clay, dark brown to black, lignitic, with a trace of black soft lignite Clay, light gray, with very fine sand and silt, slightly micaceous Clay, gray-brown, slity Clay, brown, with very fine sand and silt, slightly mica-	Drill Hole Location: County: E Logged by 0'- 3' 3'- 20' 20'- 27' 27'- 48' 48'- 52' 52'- 53' 53'- 63'	carbonaceous Clay, gray-brown, silty T. D.: 150' No. 398. Elevation 248' SE¼, Sec. 31, T. 10 S., R. 12 W Dallas : G. L. Delevan 6/78 Sand and clay, reddish brown with very fine sand Clay, light tan to buff, slightly micaceous, with a trace o lignite and brown clay Clay, light gray-brown, silty slightly micaceous Clay, gray to gray-green, with very fine sand and silt, slightly micaceous and slightly carbonaceous Lignite, black, firm Clay, black to dark brown lignitic Sand, gray, very fine, with clay binder, slightly micaceous Clay, gray-brown, silty, slightly micaceous Clay and sand, brown to dark brown, with very fine sand slightly micaceous Clay, gray-brown, slightly micaceous Clay, gray-brown, slightly micaceous Clay, gray-brown, slightly micaceous Clay, gray-brown, slightly micaceous
64'- 74' 74'- 74'6 74'6"-12' 20'-127' 27'-144' 44'-150' Orill Hole cocation: County: Cogged by 3'- 15' 15'- 17'	light gray clay binder, slightly micaceous Clay and sand, light gray-brown, very fine, slightly micaceous Clay, light gray-brown, silty gray-brown, silty gray-brown, silty gray black, firm or Clay and sand, gray, very fine, slightly micaceous Sand, very fine, with gray clay and a trace of siderite Clay, brown, with very fine sand and interbedded black and dark brown clay, and a trace of lignite Sand and clay, light gray, very fine, slightly micaceous T. D.: 150' 393. Elevation 251' NW'4, Sec. 10, T. 10 S., R. 12 W. Cleveland: G. L. Delevan 5/78, Sand, light brown, very fine Clay, light tan to buff, with very fine sand and silt, slightly micaceous Clay and sand, light reddish brown, very fine, slightly micaceous clay and sand, light reddish brown, very fine, slightly micaceous	42'- 48' 48'- 70' 70'-150' Drill Hole Location: County: [Logged by 0'- 22' 22'- 28' 28'- 30'6' 30'6''-38 38'- 48' 48'- 51'	slightly micaceous Sand, fine, with gray clay binder, slightly micaceous and slightly carbonaceous Clay, gray, with very fine sand and slit, with interbedded dark brown clay, slightly micaceous, and a trace of lignite Silt, gray-brown, with very fine sand, slightly micaceous with a trace of lignite T. D.: 150' No. 396. Elevation 236' NW¼, Sec. 24, T. 10 S., R. 13 W. Dallas C: G. L. Delevan 5/78. Sand, light brown, very fine, slightly micaceous, with a trace of tan clay Clay, gray-brown, slightly silty and slightly micaceous ("Clay, dark brown to black, lignitic, with a trace of black soft lignite Clay, light gray, with very fine sand and silt, slightly micaceous Clay, gray-brown, silty Clay, brown, with very fine sand and silt, slightly micaceous cand silt, slightly micaceous	Drill Hole Location: County: E Logged by 0'- 3' 3'- 20' 20'- 27' 27'- 48' 48'- 52' 52'- 53' 53'- 63' 63'- 70' 70'- 82' 82'- 93'	carbonaceous Clay, gray-brown, silty T. D.: 150' No. 398. Elevation 248' SE%, Sec. 31, T. 10 S., R. 12 W Dallas Clay, gray-brown With very fine sand Clay, light tan to buff, slightly micaceous, with a trace o lignite and brown clay Clay, light gray-brown, silty slightly micaceous Clay, gray to gray-green, with very fine sand and silt, slightly micaceous and slightly carbona ceous Lignite, black, firm Clay, black to dark brown lignitic Sand, gray, very fine, with clay binder, slightly micaceous Clay, gray-brown, silty, slightly micaceous Clay and sand, brown to dark brown, with very fine sand slightly micaceous Clay, gray-brown, slightly micaceous Clay, gray-brown, slightly micaceous Clay, gray-brown, slightly micaceous
64'- 74' 74'- 74'6 74'6"-12' 20'-127' 27'-144' 44'-150' Drill Hole cocation: county: C cogged by 0'- 3' 3'- 15'	light gray clay binder, slightly micaceous Clay and sand, light gray-brown, very fine, slightly micaceous Clay, light gray-brown, silty "Lignite, black, firm of Clay and sand, gray, very fine, slightly micaceous Sand, very fine, with gray clay and a trace of siderite Clay, brown, with very fine sand and interbedded black and dark brown clay, and a trace of lignite Sand and clay, light gray, very fine, slightly micaceous T. D.: 150' 393. Elevation 251' NW¼, Sec. 10, T. 10 S., R. 12 W. Cleveland 1: G. L. Delevan 5/78, Sand, light brown, very fine Clay, light tan to buff, with very fine sand and silt, slightly micaceous Clay and sand, light reddish brown, very fine, slightly micaceous Clay gray to gray-brown, silty,	42'- 48' 48'- 70' 70'-150' Drill Hole Location: County: Logged by 0'- 22' 22'- 28' 28'- 30'6''-38 38'- 48' 48'- 51'	slightly micaceous Sand, fine, with gray clay binder, slightly micaceous and slightly carbonaceous Clay, gray, with very fine sand and silt, with interbedded dark brown clay, slightly micaceous, and a trace of lignite Silt, gray-brown, with very fine sand, slightly micaceous with a trace of lignite T. D.: 150' No. 396. Elevation 236' NW¼, Sec. 24, T. 10 S., R. 13 W. Dallas Silt: G. L. Delevan 5/78. Sand, light brown, very fine, slightly micaceous, with a trace of tan clay Clay, gray-brown, slightly silty and slightly micaceous Silty, light gray, with very fine sand and silt, slightly micaceous Clay, gray-brown, silty Clay, brown, with very fine sand and silt, slightly micaceous Clay, brown, with very fine sand and silt, slightly micaceous Clay, brown, with very fine sand and silt, slightly micaceous Clay, light gray-brown, silty	Drill Hole Location: County: E Logged by 0'- 3' 3'- 20' 20'- 27' 27'- 48' 48'- 52' 52'- 53' 53'- 63' 63'- 70' 70'- 82'	carbonaceous Clay, gray-brown, silty T. D.: 150' No. 398. Elevation 248' SE'4, Sec. 31, T. 10 S., R. 12 W Dallas Clay, light gray-brown, silty light gray-brown, silty slightly micaceous Clay, light gray-brown, silty slightly micaceous Clay, gray to gray-green, with very fine sand and silt, slightly micaceous and slightly carbona ceous Lignite, black, firm Clay, black to dark brown lignitic Sand, gray, very fine, with clay binder, slightly micaceous Clay, gray-brown, silty, slightly micaceous Clay, gray-brown, slightly micaceous Clay, gray-brown, slightly micaceous Clay, gray-brown, slightly micaceous Clay, gray-brown, slightly micaceous Clay, gray, with very fine
64'- 74' 74'- 74'6 74'6"-12' 20'-127' 27'-144' 44'-150' Orill Hole cocation: County: Cogged by 3'- 15' 15'- 17'	light gray clay binder, slightly micaceous Clay and sand, light gray-brown, very fine, slightly micaceous Clay, light gray-brown, silty gray-brown, silty gray-brown, silty gray black, firm or Clay and sand, gray, very fine, slightly micaceous Sand, very fine, with gray clay and a trace of siderite Clay, brown, with very fine sand and interbedded black and dark brown clay, and a trace of lignite Sand and clay, light gray, very fine, slightly micaceous T. D.: 150' 393. Elevation 251' NW'4, Sec. 10, T. 10 S., R. 12 W. Cleveland: G. L. Delevan 5/78, Sand, light brown, very fine Clay, light tan to buff, with very fine sand and silt, slightly micaceous Clay and sand, light reddish brown, very fine, slightly micaceous clay and sand, light reddish brown, very fine, slightly micaceous	42'- 48' 48'- 70' 70'-150' Drill Hole Location: County: [Logged by 0'- 22' 22'- 28' 28'- 30'6' 30'6''-38 38'- 48' 48'- 51'	slightly micaceous Sand, fine, with gray clay binder, slightly micaceous and slightly carbonaceous Clay, gray, with very fine sand and slit, with interbedded dark brown clay, slightly micaceous, and a trace of lignite Silt, gray-brown, with very fine sand, slightly micaceous with a trace of lignite T. D.: 150' No. 396. Elevation 236' NW¼, Sec. 24, T. 10 S., R. 13 W. Dallas C: G. L. Delevan 5/78. Sand, light brown, very fine, slightly micaceous, with a trace of tan clay Clay, gray-brown, slightly silty and slightly micaceous ("Clay, dark brown to black, lignitic, with a trace of black soft lignite Clay, light gray, with very fine sand and silt, slightly micaceous Clay, gray-brown, silty Clay, brown, with very fine sand and silt, slightly micaceous cand silt, slightly micaceous	Drill Hole Location: County: E Logged by 0'- 3' 3'- 20' 20'- 27' 27'- 48' 48'- 52' 52'- 53' 53'- 63' 63'- 70' 70'- 82' 82'- 93'	carbonaceous Clay, gray-brown, silty T. D.: 150' No. 398. Elevation 248' SE%, Sec. 31, T. 10 S., R. 12 W Dallas Clay, gray-brown With very fine sand Clay, light tan to buff, slightly micaceous, with a trace o lignite and brown clay Clay, light gray-brown, silty slightly micaceous Clay, gray to gray-green, with very fine sand and silt, slightly micaceous and slightly carbona ceous Lignite, black, firm Clay, black to dark brown lignitic Sand, gray, very fine, with clay binder, slightly micaceous Clay, gray-brown, silty, slightly micaceous Clay and sand, brown to dark brown, with very fine sand slightly micaceous Clay, gray-brown, slightly micaceous Clay, gray-brown, slightly micaceous Clay, gray-brown, slightly micaceous

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97'-107'	Clay and sand, gray, very fine	Drill Hole	No. 401. Elevation 110'		fine sand
	slightly micaceous, slightly carbonaceous	Location;	SE¼, Sec. 7, T. 15 S., R. 13 W.	10'- 35'	Sand, with orange clay binder
107'-119'	Sand, light brown, fine, slightly	County: (Logged by	: Dave Lumbert 6/78.	35′- 55′	Sand, medium to coarse, with gravel
	micaceous, slightly carbona- ceous			55'- 60'	Clay, brown, with interbedded
119'-150'	Clay, light gray to gray, with	0 - 10	Clay, light brown, with very fine sand	60'- 70'	brown silt, and a trace of lignite Clay, gray, silty, with a trace of
	very fine sand and silt, slightly	10'- 25'	Clay, light gray, with very		lignite
	micaceous, with interbedded gray-brown clay	25'- 50'	fine sand and silt Gravel, large to medium	70'- 80'	Silt, gray, with clay and very fine sand
	Core Interval 43'7"-48'7"	50'- 65'	Clay, gray to light gray, with	80'- 90'	Silt, dark brown, with a trace of
	Recovered: Lost:	65'- 75'	very fine sand Clay, gray to dark gray, with	90′-105′	lignite Silt, gray, with a trace of lignite
*	10' 0'		very fine sand and a trace of		and a trace of clay binder
	43'7" - 44'1" clay, gray brown	75'- 90'	lignite Clay, gray, with interbedded	105′-135′	Clay, gray, silty, with a trace of lignite
	with very fine sand and slightly	, , ,	pea gravel, very fine sand	135'-140'	Clay, brown
	micaceous 44'1" - 44'10" lignite and clay,	90'-100'	and a trace of lignite Sand, very fine, with black	140′-145′ 145′-150′	Silt, gray, with very fine sand Clay, gray, with silt
	black, friable, with silty clay		clay, carbonaceous, with	150'-155'	Clay, light gray, with silt
	44'10" - 47'10" lignite, black, hard, waxy, with a few silt	100'-120'	a trace of lignite Sand, very fine, with gray	155′-160′ 160′-200′	Silt, gray, with a trace of lignite
	partings		clay and a trace of lignite	100 -200	Clay, gray, silty, with a trace of lignite
	47'10'' - 48'2'' clay, black, lignitic, with very fine sand	120′-125′ 125′-164′	Sand, very fine, glauconitic Clay, gray, with very fine sand,		T. D.: 200'
	and silt		slightly glauconitic		
	48'2" - 48'7" clay, brown, with very fine sand, slightly	164'-185'	Sand, very fine, glauconitic, with some gray clay		No. 405. Elevation 160'
	micaceous, carbonaceous, with	185′-195′	Clay, gray, with very fine sand,	County: (SE¼, Sec. 18, T. 14S., R. 13 W. Calhoun
	pyrite inclusions T. D.: 150'		with a trace of siderite T. D.: 195'		: Dave Lumbert 6/78.
Drill Hole I	No. 399. Elevation 90'	Drill Hole	No. 402. Elevation 120' SE¼, Sec. 6, T. 15 S., R. 13 W.	0'- 10'	Clay, light gray to tan, with
Location:	NE¼, Sec. 25, T. 15 S., R. 14 W.	County: C	Calhoun	10'- 55'	very fine sand Gravel, with sand, coarse to fine
County: C Logged by	alnoun : Dave Lumbert 6/78.	Logged by	: J. M. Howard 6/78.	55'- 68'	Clay, gray, with very fine sand
		0'- 5'	Clay, orange	68'- 75'	Lignite, with chocolate brown clay and very fine sand
0'- 10' 10'- 20'	Clay, light gray, with silt Clay, light gray, with silt,	5'- 25'	Sand, fine, with orange clay	75′- 8 0′	Sand, very fine to fine, with
	iron stained	25'- 40'	and silt binder Sand, medium to coarse, with	80'- 85'	interbedded gray clay Sand, fine, with lignite stringers
20'- 30'	Sand, light gray, very fine, with clay	40' 60'	pea gravel		and some gray clay
30'- 35'	Clay, gray to light gray, with	40'- 62' 62'- 92'	Gravel, with medium sand Clay, gray, with silt and a	85′-100′	Sand, coarse, with gray clay stringers
35'- 70'	very fine sand Gravel, pea to large pebble	02/ 100/	trace of lignite	100′-105′	Clay, light brown to gray,
70'-100'	Clay, gray to dark gray, with	92′-100′ 1 0 0′-125′	Sand, fine Silt, gray, with very fine sand	105′-120′	with very fine sand Clay, light gray, slightly glau-
100'-115'	very fine sand, micaceous Clay, gray, with very fine sand		and clay binder, with a trace		conitic, with very fine sand
	and silt, with a trace of lignite	125'-150'	of lignite Silt, brown, micaceous, with	120′-130′	Clay, light gray to light blue, with interbedded very fine sand,
115′-120′	Clay, gray to light brown, with a trace of pea gravel	150/ 200/	fine sand		silty
120′-150′	Clay, gray, with very fine sand	150′-200′	Silt, gray, with clay binder and a trace of fine sand	130′-135′	Clay, gray to light brown, with very fine sand
	and silt, with a trace of lignite and a trace of siderite		T. D.: 200'	135'-155'	Clay, gray, with very fine sand
	T. D.: 150'	Drill Hole	No. 403. Elevation 120'	155′-170′	Clay, light brown, with very fine sand and a trace of lighte
		Location:	NE¼, Sec. 31, T. 14 S., R. 13 W.	170'-180'	Sand, very fine, with gray to
Drill Hole I	No. 400. Elevation 106'	County: C	ainoun : Dave Lumbert 6/78,	180′-190′	light brown clay
Location: S County: C	SE¼, Sec. 18, T. 15 S., R. 13 W.				Clay, light gray, with interbed- ded very fine sand
Logged by:	J. M. Howard 6/78.	0 - 10'	Sand, very fine to fine, with interbedded light gray to white	190′-200′	Clay, gray, with very fine sand
0'- 5'	Clay, mottled, silty	40/ 00/	clay		T. D.: 200'
5'- 2 0'	Clay, cream to tan, silty, with	10′- 80′	Gravel, pea, with coarse to fine sand		
20'- 70'	very fine sand Sand, cream, coarse to fine,	80′- 90′	Clay, gray, slightly glauconitic	Drill Hole	No. 406, Elevation 165'
	with pea gravel	90'-145'	with very fine sand Clay, gray, with fine to large	Location:	NE¼, Sec. 7, T. 14 S., R. 13 W.
70'- 80' 80'-100'	Clay, gray, silty, micaceous Silt, gray-brown, with clay		sand, with a trace of lignite	County: C Logged by	: J. M. Howard 6/78,
	and a trace of lignite	145′-170′	Clay, brown and gray interbeded, with very fine sand		-, -, -, -, -, -, -, -, -, -, -, -, -, -
100′-105′ 105′-110′	Clay, gray, silty, micaceous	170′-180′	Clay, gray, slightly glauconitic	0'- 19'	Sand, coarse, with pea gravel
	Silt, brown, with clay, mica- ceous	180′-185′	with very fine sand Lignite, thin bedded, with fine	19'- 40'	Silt, gray to brown, with a trace
110′-115′	Clay, gray-brown, with fine sand		sand	40'- 53'	of lignite Clay, light brown, silty, with a
115'-150'	Silt, brown, micaceous, with	185′-200′	Clay, gray, with very fine sand T. D.: 200'		trace of lignite
	tine sand and a trace of lignite	D. 111		53'- 95'	Clay, gray, silty, with a trace of lignite and siderite
	Silt, gray, micaceous, with fine sand and a trace of siderite	Location: 9	No. 404. Elevation 165' SE¼, Sec. 19, T. 14 S., R. 13 W.	95'-100'	Silt, gray, with clay binder
1001/5	Clay, brown, with silt	County: C	alhoun	100′-140′ 140′-195′	Clay, gray, with silt Silt, brownish gray, with very
	Silt, gray, with fine sand and siderite	Logged by:	J. M. Howard 6/78.		fine sand and a trace of lignite
	T. D.: 179'	0'- 10'	Clay, orange and white, with		and siderite T. D.: 195'
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	No. 407. Elevation 150'		No. 410. Elevation 175'	175′-186′	Silt, gray, with very fine sand and clay binder
County: C	NW¼, Sec. 6, T. 14 S., R. 14 W. Salhoun : J. M. Howard 6/78.	County: C	NW¼, Sec. 4, T. 14 S., R. 14 W. alhoun : Dave Lumbert 6/78,	186′-189′	Siderite T. D.: 189'
Logged by	. v. m. Howard		Clay, light tan, with very		No. 413. Elevation 155'
0'- 10'	Sand, medium to coarse, with gravel	15'- 20'	fine sand Clay, white, with very fine	Location: County: Ca	SW¼, Sec. 36, T. 13 S., R. 15 W. alhoun
10'- 25' 25'- 70'	Silt, gray, with clay binder Clay, gray, with silt and a trace	20'- 25'	sand Clay, white, interbedded with	Logged by	: Dave Lumbert 6/78.
	of lignite		chocolate brown clay and lignite	0'- 5'	Clay, light tan to brown, with
70'- 75' 75'- 90'	Silt, brown and gray Clay, brownish gray, with silt	25'- 30'	Clay, chocolate brown, with gravel and a trace of lignite	5'- 15'	fine sand Clay, light gray, with very fine
90'-120'	and a trace of lignite Clay, gray, with silt and a trace	30'- 35' 35'- 45'	Lignite Clay, gray, with very fine sand	15'- 5 0 '	sand Gravel with coarse sand
120'-165'	of lignite Clay, gray, with silt	45'- 90'	Clay, brown, with very fine sand	50'- 85' 85'-1 00 '	Sand, coarse, with gravel Clay, gray, with very fine
165'-175'	Silt, brown and gray, micaceous			100′-105′	sand, slightly micaceous Ciay, gray, glauconitic, with
175′-190′	with gray clay Clay, gray, silty, with a trace		Core Interval 30' - 40'	100 - 100	siderite @ 105'
190′-200′	of lignite Clay, grayish brown, with a		Recovered: Lost 19" 101'		T. D: 105'
	trace of lignite T. D.: 200'		Top of core	Location:	No. 414. Elevation 155' NW¼, Sec. 35, T. 13 S., R. 15 W.
			6½" lignite, black, hard 4½" sand, very fine, light gray,	County: C Logged by	Calhoun : J. M. Howard 6/78.
Drill Hole	No. 408. Elevation 150'		micaceous		Clay, silty, mottled
Location:	NW¼, Sec. 2, T. 14 S., R. 14 W.		7" lignite, black, hard1" clay, dark brown, lignitic	10'- 15'	Gravel, with coarse sand Gravel, with a few light tan,
County: C Logged by	: Dave Lumbert 6/78.		Core Interval 31' - 36'		sandy clay stringers
			Recovered: Lost:	90'6''-10	5" Siderite 0" Clay, brown, micaceous, silty
0'- 5' 5'- 15'	Clay, gray, with fine sand Gravel		32" 28"	100′-200′	Clay, gray, silty, with a trace of siderite
15'- 20'	Clay, lignitic, with very fine sand		Top of core 2" clay, gray, sandy		T. D.: 200'
20'- 40'	Clay, chocolate brown, inter- bedded with gray clay and very		1" lignite, hard, fragments		No. 415. Elevation 150' NE¼, Sec. 33, T. 13 S., R. 15 W.
40′- 70′	fine sand		2" clay, lignitic 27" clay, gray	County: C	
40 - 70	Clay, gray, with very fine sand, slightly glauconitic		T. D.: 90'	Logged by	. Dave Editibert 0,70.
701 001		D.: 11 - 1-1	D) - 444 - 51 475/	0/ 5/	Cand fine to medium with rad
70'- 90'	Clay, light gray to light brown, with very fine sand	Location:	No. 411. Elevation 175' NE¼, Sec. 5, T. 14 S., R. 14 W.	0'- 5'	Sand, fine to medium, with red clay
70'- 90' 90'-110'	Clay, light gray to light brown,	Location: County: C	NE¼, Sec. 5, T. 14 S., R. 14 W.	5'- 20' 20'- 40'	clay Clay, red, with fine sand Gravel
	Clay, light gray to light brown, with very fine sand Clay, gray, with very fine sand and a trace of siderite Clay, light gray, slightly	Location: County: C Logged by	NE¼, Sec. 5, T. 14 S., R. 14 W. Jalhoun Dave Lumbert 6/78.	5'- 20'	clay Clay, red, with fine sand Gravel Clay, gray, with very fine sand
90′-110′ 110′-120′	Clay, light gray to light brown, with very fine sand Clay, gray, with very fine sand and a trace of siderite Clay, light gray, slightly glauconitic, with very fine sand	Location: County: C Logged by O'- 8'	NE%, Sec. 5, T. 14 S., R. 14 W. calhoun : Dave Lumbert 6/78. Sand, very fine, with light tan clay	5'- 20' 20'- 40'	clay Clay, red, with fine sand Gravel Clay, gray, with very fine sand and a trace of lignite Clay, gray, slightly glauconitic,
90′-110′	Clay, light gray to light brown, with very fine sand Clay, gray, with very fine sand and a trace of siderite Clay, light gray, slightly glauconitic, with very fine sand Sand, very fine, with gray clay Clay, gray, with very fine sand,	Location: County: C Logged by	NE%, Sec. 5, T. 14 S., R. 14 W. Falhoun Dave Lumbert 6/78. Sand, very fine, with light tan clay Gravel Clay, light brown, with very	5'- 20' 20'- 40' 40'- 50' 50'-110'	clay Clay, red, with fine sand Gravel Clay, gray, with very fine sand and a trace of lignite Clay, gray, slightly glauconitic, with interbedded very fine sand and a trace of lignite
90′-110′ 110′-120′ 120′-130′	Clay, light gray to light brown, with very fine sand Clay, gray, with very fine sand and a trace of siderite Clay, light gray, slightly glauconitic, with very fine sand Sand, very fine, with gray clay Clay, gray, with very fine sand, with a trace of lighte and siderite	Location: County: C Logged by 0'- 8' 8'- 45' 45'- 50'	NE¼, Sec. 5, T. 14 S., R. 14 W. Salhoun Dave Lumbert 6/78. Sand, very fine, with light tan clay Gravel Clay, light brown, with very fine sand Clay, gray, with very fine sand	5'- 20' 20'- 40' 40'- 50'	clay Clay, red, with fine sand Gravel Clay, gray, with very fine sand and a trace of lignite Clay, gray, slightly glauconitic, with interbedded very fine sand and a trace of lignite Sand, fine Clay, gray, with very fine sand
90′-110′ 110′-120′ 120′-130′	Clay, light gray to light brown, with very fine sand Clay, gray, with very fine sand and a trace of siderite Clay, light gray, slightly glauconitic, with very fine sand Sand, very fine, with gray clay Clay, gray, with very fine sand, with a trace of lighite and	Location: County: C Logged by 0'- 8' 8'- 45' 45'- 50'	NE%, Sec. 5, T. 14 S., R. 14 W. calhoun: Dave Lumbert 6/78. Sand, very fine, with light tan clay Gravel Clay, light brown, with very fine sand	5'- 20' 20'- 40' 40'- 50' 50'-110'	clay Clay, red, with fine sand Gravel Clay, gray, with very fine sand and a trace of lignite Clay, gray, slightly glauconitic, with interbedded very fine sand and a trace of lignite Sand, fine Clay, gray, with very fine sand and silt, and a trace of siderite Clay, gray, slightly glauconitic
90′-110′ 110′-120′ 120′-130′	Clay, light gray to light brown, with very fine sand Clay, gray, with very fine sand and a trace of siderite Clay, light gray, slightly glauconitic, with very fine sand Sand, very fine, with gray clay Clay, gray, with very fine sand, with a trace of lighte and siderite	Location: County: C Logged by 0'- 8' 8'- 45' 45'- 50' 50'- 60' 60'- 70' 70'-120'	NE¼, Sec. 5, T. 14 S., R. 14 W. Calhoun: Dave Lumbert 6/78. Sand, very fine, with light tan clay Gravel Clay, light brown, with very fine sand Clay, gray, with very fine sand Sand, fine, with gray clay Clay, gray, with fine to very fine sand	5'- 20' 20'- 40' 40'- 50' 50'-110' 110'-115' 115'-150'	clay Clay, red, with fine sand Gravel Clay, gray, with very fine sand and a trace of lignite Clay, gray, slightly glauconitic, with interbedded very fine sand and a trace of lignite Sand, fine Clay, gray, with very fine sand and slit, and a trace of siderite
90'-110' 110'-120' 120'-130' 130'-192'	Clay, light gray to light brown, with very fine sand Clay, gray, with very fine sand and a trace of siderite Clay, light gray, slightly glauconitic, with very fine sand Sand, very fine, with gray clay Clay, gray, with very fine sand, with a trace of lighte and siderite T. D.: 192' No. 409. Elevation 169'	Location: County: C Logged by 0'- 8' 8'- 45' 45'- 50' 50'- 60' 60'- 70'	NE%, Sec. 5, T. 14 S., R. 14 W. Lalhoun: Dave Lumbert 6/78. Sand, very fine, with light tan clay Gravel Clay, light brown, with very fine sand Clay, gray, with very fine sand Sand, fine, with gray clay Clay, gray, with fine to very fine sand Siderite Clay, light gray, glauconitic	5'- 20' 20'- 40' 40'- 50' 50'-110' 110'-115' 115'-150'	clay Clay, red, with fine sand Gravel Clay, gray, with very fine sand and a trace of lignite Clay, gray, slightly glauconitic, with interbedded very fine sand and a trace of lignite Sand, fine Clay, gray, with very fine sand and silt, and a trace of siderite Clay, gray, slightly glauconitic with very fine sand and silt Clay, gray, with very fine sand and silt
90'-110' 110'-120' 120'-130' 130'-192' Drill Hole Location: County: C	Clay, light gray to light brown, with very fine sand Clay, gray, with very fine sand and a trace of siderite Clay, light gray, slightly glauconltic, with very fine sand Sand, very fine, with gray clay Clay, gray, with very fine sand, with a trace of lighte and siderite T. D.: 192' No. 409. Elevation 169' NW¼, Sec. 3, T. 14 S., R. 14 W. alhoun	Location: County: C Logged by 0'- 8' 8'- 45' 45'- 50' 50'- 60' 70'-120'	NE%, Sec. 5, T. 14 S., R. 14 W. alhoun: Dave Lumbert 6/78. Sand, very fine, with light tan clay Gravel Clay, light brown, with very fine sand Clay, gray, with very fine sand Sand, fine, with gray clay Clay, gray, with fine to very fine sand Siderite Clay, light gray, glauconitic with very fine sand	5'- 20' 20'- 40' 40'- 50' 50'-110' 110'-115' 115'-150' 150'-180' 180'-200'	clay Clay, red, with fine sand Gravel Clay, gray, with very fine sand and a trace of lignite Clay, gray, slightly glauconitic, with interbedded very fine sand and a trace of lignite Sand, fine Clay, gray, with very fine sand and silt, and a trace of siderite Clay, gray, slightly glauconitic with very fine sand and silt Clay, gray, with very fine sand and silt T. D.: 200'
90'-110' 110'-120' 120'-130' 130'-192' Drill Hole Location: County: C	Clay, light gray to light brown, with very fine sand Clay, gray, with very fine sand and a trace of siderite Clay, light gray, slightly glauconitic, with very fine sand Sand, very fine, with gray clay Clay, gray, with very fine sand, with a trace of lignite and siderite T. D.: 192' No. 409. Elevation 169' NW¼, Sec. 3, T. 14 S., R. 14 W.	Location: County: C Logged by 0'- 8' 8'- 45' 45'- 50' 50'- 60' 60'- 70' 70'-120' 120'-123' 123'-140'	NE¼, Sec. 5, T. 14 S., R. 14 W. Calhoun: Dave Lumbert 6/78. Sand, very fine, with light tan clay Gravel Clay, light brown, with very fine sand Clay, gray, with very fine sand Sand, fine, with gray clay Clay, gray, with fine to very fine sand Siderite Clay, light gray, glauconitic with very fine sand	5'- 20' 20'- 40' 40'- 50' 50'-110' 110'-115' 115'-150' 180'-200' Drill Hole Location:	clay Clay, red, with fine sand Gravel Clay, gray, with very fine sand and a trace of lignite Clay, gray, slightly glauconitic, with interbedded very fine sand and a trace of lignite Sand, fine Clay, gray, with very fine sand and silt, and a trace of siderite Clay, gray, slightly glauconitic with very fine sand and silt Clay, gray, with very fine sand and silt T. D.: 200' No. 416. Elevation 124' NW%, Sec. 32, T. 13 S., R. 15 W.
90'-110' 110'-120' 120'-130' 130'-192' Drill Hole Location: County: C	Clay, light gray to light brown, with very fine sand Clay, gray, with very fine sand and a trace of siderite Clay, light gray, slightly glauconitic, with very fine sand, very fine, with gray clay Clay, gray, with very fine sand, with a trace of lignite and siderite T. D.: 192' No. 409. Elevation 169' NW%, Sec. 3, T. 14 S., R. 14 W. alhoun: J. M. Howard 6/78. Sand, medium, mottled, with	Location: County: C Logged by 0'- 8' 8'- 45' 45'- 50' 50'- 60' 60'- 70' 70'-120' 120'-123' 123'-140' 140'-150' Drill Hole	NE%, Sec. 5, T. 14 S., R. 14 W. Lalhoun: Dave Lumbert 6/78. Sand, very fine, with light tan clay Gravel Clay, light brown, with very fine sand Sand, fine, with gray clay Clay, gray, with very fine sand Siderite Clay, light gray, glauconitic with very fine sand Clay, light gray, glauconitic with very fine sand T. D.: 150' No. 412. Elevation 176'	5'- 20' 20'- 40' 40'- 50' 50'-110' 110'-115' 115'-150' 180'-200' Drill Hole Location: County: C	clay Clay, red, with fine sand Gravel Clay, gray, with very fine sand and a trace of lignite Clay, gray, slightly glauconitic, with interbedded very fine sand and a trace of lignite Sand, fine Clay, gray, with very fine sand and silt, and a trace of siderite Clay, gray, slightly glauconitic with very fine sand and silt Clay, gray, with very fine sand and silt T. D.: 200' No. 416. Elevation 124' NW%, Sec. 32, T. 13 S., R. 15 W.
90'-110' 110'-120' 120'-130' 130'-192' Drill Hole Location: County: C Logged by	Clay, light gray to light brown, with very fine sand Clay, gray, with very fine sand and a trace of siderite Clay, light gray, slightly glauconitic, with very fine sand, very fine, with gray clay Clay, gray, with very fine sand, with a trace of lignite and siderite T. D.: 192' No. 409. Elevation 169' NW%, Sec. 3, T. 14 S., R. 14 W. alhoun: J. M. Howard 6/78.	Location: County: C Logged by 0'- 8' 8'- 45' 45'- 50' 50'- 60' 60'- 70' 70'-120' 120'-123' 123'-140' 140'-150' Drill Hole	NE%, Sec. 5, T. 14 S., R. 14 W. Salhoun: Dave Lumbert 6/78. Sand, very fine, with light tan clay Gravel Clay, light brown, with very fine sand Clay, gray, with very fine sand Sand, fine, with gray clay Clay, gray, with fine to very fine sand Siderite Clay, light gray, glauconitic with very fine sand Clay, light gray, slightly micaceous, with very fine sand T. D.: 150' No. 412. Elevation 176' NW%, Sec. 6, T. 14 S., R. 14 W. Salhoun	5'- 20' 20'- 40' 40'- 50' 50'-110' 110'-115' 115'-150' 180'-200' Drill Hole Location: County: C Logged by	clay Clay, red, with fine sand Gravel Clay, gray, with very fine sand and a trace of lignite Clay, gray, slightly glauconitic, with interbedded very fine sand and a trace of lignite Sand, fine Clay, gray, with very fine sand and silt, and a trace of siderite Clay, gray, slightly glauconitic with very fine sand and silt Clay, gray, with very fine sand and silt T. D.: 200' No. 416. Elevation 124' NW¼, Sec. 32, T. 13 S., R. 15 W. salhoun J. J. M. Howard G/78. Silt, cream, with fine sand
90'-110' 110'-120' 120'-130' 130'-192' Drill Hole Location: County: C Logged by	Clay, light gray to light brown, with very fine sand Clay, gray, with very fine sand and a trace of siderite Clay, light gray, slightly glauconitic, with very fine sand Sand, very fine, with gray clay Clay, gray, with very fine sand, with a trace of lignite and siderite T. D.: 192' No. 409. Elevation 169' NW¼, Sec. 3, T. 14 S., R. 14 W. alhoun J. M. Howard 6/78. Sand, medium, mottled, with orange clay binder	Location: County: C Logged by 0'- 8' 8'- 45' 45'- 50' 50'- 60' 60'- 70' 70'-120' 120'-123' 123'-140' Drill Hole Location: County: C	NE¼, Sec. 5, T. 14 S., R. 14 W. Calhoun: Dave Lumbert 6/78. Sand, very fine, with light tan clay Gravel Clay, light brown, with very fine sand Sand, fine, with gray clay Clay, gray, with very fine sand Sand, fine, with gray clay Clay, gray, with fine to very fine sand Siderite Clay, light gray, glauconitic with very fine sand Clay, light gray, slightly micaceous, with very fine sand T. D.: 150' No. 412. Elevation 176' NW¼, Sec. 6, T. 14 S., R. 14 W.	5'- 20' 20'- 40' 40'- 50' 50'-110' 110'-115' 115'-150' 180'-200' Drill Hole Location: County: C	clay Clay, red, with fine sand Gravel Clay, gray, with very fine sand and a trace of lignite Clay, gray, slightly glauconitic, with interbedded very fine sand and a trace of lignite Sand, fine Clay, gray, with very fine sand and silt, and a trace of siderite Clay, gray, slightly glauconitic with very fine sand and silt Clay, gray, with very fine sand and silt T. D.: 200' No. 416. Elevation 124' NW%, Sec. 32, T. 13 S., R. 15 W. alhoun J. J. M. Howard G/78. Silt, cream, with fine sand Gravel Clay, brownish gray, with silt
90'-110' 110'-120' 120'-130' 130'-192' Drill Hole Location: County: C Logged by 0'- 10' 10'- 20' 20'- 32'	Clay, light gray to light brown, with very fine sand Clay, gray, with very fine sand and a trace of siderite Clay, light gray, slightly glauconltic, with very fine sand Sand, very fine, with gray clay Clay, gray, with very fine sand, with a trace of lighte and siderite T. D.: 192' No. 409. Elevation 169' NW%, Sec. 3, T. 14 S., R. 14 W. alhoun: J. M. Howard 6/78. Sand, medium, mottled, with orange clay binder Sand, medium to coarse, with pea gravel Gravel, with sand, medium to coarse	Location: County: C Logged by 0'- 8' 8'- 45' 45'- 50' 50'- 60' 60'- 70' 70'-120' 120'-123' 123'-140' 140'-150' Drill Hole Location: County: C	NE¼, Sec. 5, T. 14 S., R. 14 W. Salhoun: Dave Lumbert 6/78. Sand, very fine, with light tan clay Gravel Clay, light brown, with very fine sand Clay, gray, with very fine sand Sand, fine, with gray clay Clay, gray, with fine to very fine sand Siderite Clay, light gray, glauconitic with very fine sand Clay, light gray, glauconitic with very fine sand Clay, light gray, slightly micaceous, with very fine sand T. D.: 150' No. 412. Elevation 176' NW¼, Sec. 6, T. 14 S., R. 14 W. Calhoun: J. M. Howard 6/78, Silt, with irony sand concre-	5'- 20' 20'- 40' 40'- 50' 50'-110' 110'-115' 115'-150' 180'-200' Drill Hole Location: County: C Logged by 0'- 5' 5'- 22'	clay Clay, red, with fine sand Gravel Clay, gray, with very fine sand and a trace of lignite Clay, gray, slightly glauconitic, with interbedded very fine sand and a trace of lignite Sand, fine Clay, gray, with very fine sand and silt, and a trace of siderite Clay, gray, slightly glauconitic with very fine sand and silt Clay, gray, with very fine sand and silt T. D.: 200' No. 416. Elevation 124' NW¼, Sec. 32, T. 13 S., R. 15 W. salhoun Silt, cream, with fine sand Gravel Clay, brownish gray, with silt Clay, gray, silty, with a trace of
90'-110' 110'-120' 120'-130' 130'-192' Drill Hole Location: County: C Logged by 0'- 10' 10'- 20' 20'- 32' 32'- 45'	Clay, light gray to light brown, with very fine sand Clay, gray, with very fine sand and a trace of siderite Clay, light gray, slightly glauconitic, with very fine sand Sand, very fine, with gray clay Clay, gray, with very fine sand, with a trace of lignite and siderite T. D.: 192' No. 409. Elevation 169' NW¼, Sec. 3, T. 14 S., R. 14 W. alhoun: J. M. Howard 6/78. Sand, medium, mottled, with orange clay binder Sand, medium to coarse, with pea gravel Gravel, with sand, medium to coarse Silt, dark brown, with a trace of lignite and gray clay	Location: County: C Logged by 0'- 8' 8'- 45' 45'- 50' 50'- 60' 60'- 70' 70'-120' 120'-123' 123'-140' 140'-150' Drill Hole Location: County: C Logged by 0'- 5' 5'- 25'	NE¼, Sec. 5, T. 14 S., R. 14 W. Calhoun Dave Lumbert 6/78. Sand, very fine, with light tan clay Gravel Clay, light brown, with very fine sand Sand, fine, with gray clay Clay, gray, with very fine sand Sand, fine, with gray clay Clay, gray, with fine to very fine sand Siderite Clay, light gray, glauconitic with very fine sand Clay, light gray, slightly micaceous, with very fine sand T. D.: 150' No. 412. Elevation 176' NW¼, Sec. 6, T. 14 S., R. 14 W. Calhoun J. M. Howard 6/78, Silt, with irony sand concretions Sand, medium, with orange clay	5'- 20' 20'- 40' 40'- 50' 50'-110' 110'-115' 115'-150' 180'-200' Drill Hole Location: County: C Logged by 0'- 5' 5'- 22' 22'- 25' 25'- 45' 45'- 50'	clay Clay, red, with fine sand Gravel Clay, gray, with very fine sand and a trace of lignite Clay, gray, slightly glauconitic, with interbedded very fine sand and a trace of lignite Sand, fine Clay, gray, with very fine sand and silt, and a trace of siderite Clay, gray, slightly glauconitic with very fine sand and silt Clay, gray, with very fine sand and silt T. D.: 200' No. 416. Elevation 124' NW%, Sec. 32, T. 13 S., R. 15 W. calhoun Clay, brownish gray, with silt Clay, gray, silty, with a trace of lignite and siderite Silt, gray-brown
90'-110' 110'-120' 120'-130' 130'-192' Drill Hole Location: County: C Logged by 0'- 10' 10'- 20' 20'- 32' 32'- 45' 45'- 50'	Clay, light gray to light brown, with very fine sand Clay, gray, with very fine sand and a trace of siderite Clay, light gray, slightly glauconitic, with very fine sand Sand, very fine, with gray clay Clay, gray, with very fine sand, with a trace of lignite and siderite T. D.: 192' No. 409. Elevation 169' NW%, Sec. 3, T. 14 S., R. 14 W. alhoun : J. M. Howard 6/78. Sand, medium, mottled, with orange clay binder Sand, medium to coarse, with pea gravel Gravel, with sand, medium to coarse Silt, dark brown, with a trace of lignite and gray clay Clay, brown, with brown silt stringers	Location: County: C Logged by 0'- 8' 8'- 45' 45'- 50' 50'- 60' 60'- 70' 70'-120' 120'-123' 123'-140' 140'-150' Drill Hole Location: County: C Logged by 0'- 5' 5'- 25' 25'- 30'	NE¼, Sec. 5, T. 14 S., R. 14 W. Lalhoun: Dave Lumbert 6/78. Sand, very fine, with light tan clay Gravel Clay, light brown, with very fine sand Clay, gray, with very fine sand Sand, fine, with gray clay Clay, gray, with fine to very fine sand Siderite Clay, light gray, glauconitic with very fine sand Clay, light gray, slightly micaceous, with very fine sand T. D.: 150' No. 412. Elevation 176' NW¼, Sec. 6, T. 14 S., R. 14 W. Calhoun J. M. Howard 6/78, Silt, with irony sand concretions Sand, medium, with orange clay Sand, medium to coarse, with pea gravel	5'- 20' 20'- 40' 40'- 50' 50'-110' 110'-115' 115'-150' 180'-200' Drill Hole Location: County: C Logged by 0'- 5' 5'- 22' 22'- 25' 25'- 45'	clay Clay, red, with fine sand Gravel Clay, gray, with very fine sand and a trace of lignite Clay, gray, slightly glauconitic, with interbedded very fine sand and a trace of lignite Sand, fine Clay, gray, with very fine sand and silt, and a trace of siderite Clay, gray, slightly glauconitic with very fine sand and silt Clay, gray, with very fine sand and silt T. D.: 200' No. 416. Elevation 124' NW¼, Sec. 32, T. 13 S., R. 15 W. alhoun Silt, cream, with fine sand Gravel Clay, brownish gray, with silt Clay, gray, silty, with a trace of lignite and siderite Silt, gray-brown Clay, gray, gilty, with very fine to fine sand and a trace of
90'-110' 110'-120' 120'-130' 130'-192' Drill Hole Location: County: C Logged by 0'- 10' 10'- 20' 20'- 32' 32'- 45'	Clay, light gray to light brown, with very fine sand Clay, gray, with very fine sand and a trace of siderite Clay, light gray, slightly glauconitic, with very fine sand Sand, very fine, with gray clay Clay, gray, with very fine sand, with a trace of lignite and siderite T. D.: 192' No. 409. Elevation 169' NW¼, Sec. 3, T. 14 S., R. 14 W. alhoun: J. M. Howard 6/78. Sand, medium, mottled, with orange clay binder Sand, medium to coarse, with pea gravel Gravel, with sand, medium to coarse Silt, dark brown, with a trace of lignite and gray clay Clay, brown, with brown silt stringers Sand, gray, fine, with silt Clay, brown, with very fine	Location: County: C Logged by 0'- 8' 8'- 45' 45'- 50' 50'- 60' 60'- 70' 70'-120' 120'-123' 123'-140' 140'-150' Drill Hole Location: County: C Logged by 0'- 5' 5'- 25'	NE¼, Sec. 5, T. 14 S., R. 14 W. Calhoun: Dave Lumbert 6/78. Sand, very fine, with light tan clay Gravel Clay, light brown, with very fine sand Clay, gray, with very fine sand Sand, fine, with gray clay Clay, gray, with fine to very fine sand Siderite Clay, light gray, glauconitic with very fine sand Clay, light gray, slightly micaceous, with very fine sand T. D.: 150' No. 412. Elevation 176' NW¼, Sec. 6, T. 14 S., R. 14 W. Calhoun: J. M. Howard 6/78, Silt, with irony sand concretions Sand, medium, with orange clay Sand, medium to coarse, with pea gravel Gravel, with medium to coarse sand and thin cream clay	5'- 20' 20'- 40' 40'- 50' 50'-110' 110'-115' 115'-150' 180'-200' Drill Hole Location: County: C Logged by 0'- 5' 5'- 22' 22'- 25' 25'- 45' 45'- 50'	clay Clay, red, with fine sand Gravel Clay, gray, with very fine sand and a trace of lignite Clay, gray, slightly glauconitic, with interbedded very fine sand and a trace of lignite Sand, fine Clay, gray, with very fine sand and silt, and a trace of siderite Clay, gray, slightly glauconitic with very fine sand and silt Clay, gray, with very fine sand and silt T. D.: 200' No. 416. Elevation 124' NW¼, Sec. 32, T. 13 S., R. 15 W. Salhoun J. M. Howard 6/78. Silt, cream, with fine sand Gravel Clay, brownish gray, with silt Clay, gray, silty, with a trace of lignite and siderite Silt, gray-brown Clay, gray, silty, with very fine
90'-110' 110'-120' 120'-130' 130'-192' Drill Hole Location: County: C Logged by 0'- 10' 10'- 20' 20'- 32' 32'- 45' 45'- 50' 50'- 60'	Clay, light gray to light brown, with very fine sand Clay, gray, with very fine sand and a trace of siderite Clay, light gray, slightly glauconitic, with very fine sand Sand, very fine, with gray clay Clay, gray, with very fine sand, with a trace of lignite and siderite T. D.: 192' No. 409. Elevation 169' NW¼, Sec. 3, T. 14 S., R. 14 W. alhoun: J. M. Howard 6/78. Sand, medium, mottled, with orange clay binder Sand, medium to coarse, with pea gravel Gravel, with sand, medium to coarse Silt, dark brown, with a trace of lignite and gray clay Clay, brown, with brown silt stringers Sand, gray, fine, with silt Clay, brown, with very fine sand Clay, gray, with silt and a trace	Location: County: C Logged by 0'- 8' 8'- 45' 45'- 50' 50'- 60' 60'- 70' 70'-120' 120'-123' 123'-140' 140'-150' Drill Hole Location: County: C Logged by 0'- 5' 5'- 25' 25'- 30'	NE¼, Sec. 5, T. 14 S., R. 14 W. Calhoun: Dave Lumbert 6/78. Sand, very fine, with light tan clay Gravel Clay, light brown, with very fine sand Sand, fine, with gray clay Clay, gray, with very fine sand Sand, fine, with gray clay Clay, gray, with fine to very fine sand Siderite Clay, light gray, glauconitic with very fine sand Clay, light gray, slightly micaceous, with very fine sand T. D.: 150' No. 412. Elevation 176' NW¼, Sec. 6, T. 14 S., R. 14 W. Calhoun: J. M. Howard 6/78, Silt, with irony sand concretions Sand, medium, with orange clay Sand, medium to coarse, with pea gravel Gravel, with medium to coarse sand and thin cream clay stringers Silt, dark brown, with lignite	5'- 20' 20'- 40' 40'- 50' 50'-110' 110'-115' 115'-150' 180'-200' Drill Hole Location: County: C Logged by 0'- 5' 5'- 22' 22'- 25'- 45' 45'- 50' 50'-200'	clay Clay, red, with fine sand Gravel Clay, gray, with very fine sand and a trace of lignite Clay, gray, slightly glauconitic, with interbedded very fine sand and a trace of lignite Sand, fine Clay, gray, with very fine sand and silt, and a trace of siderite Clay, gray, slightly glauconitic with very fine sand and silt Clay, gray, with very fine sand and silt T. D.: 200' No. 416. Elevation 124' NW¼, Sec. 32, T. 13 S., R. 15 W. alhoun J. J. M. Howard Gravel Clay, brownish gray, with silt Clay, gray, silty, with a trace of lignite and siderite Silt, gray-brown Clay, gray, silty, with very fine to fine sand and a trace of lignite T. D.: 200' No. 417. Elevation 124'
90'-110' 110'-120' 120'-130' 130'-192' Drill Hole Location: County: C Logged by 0'- 10' 10'- 20' 20'- 32' 32'- 45' 45'- 50' 50'- 60' 60'- 75' 75'-125'	Clay, light gray to light brown, with very fine sand Clay, gray, with very fine sand and a trace of siderite Clay, light gray, slightly glauconitic, with very fine sand Sand, very fine, with gray clay Clay, gray, with very fine sand, with a trace of lignite and siderite T. D.: 192' No. 409. Elevation 169' NW's, Sec. 3, T. 14 S., R. 14 W. alhoun in the sand, with orange clay binder Sand, medium, mottled, with orange clay binder Sand, medium to coarse Silt, dark brown, with a trace of lignite and gray clay Clay, brown, with brown silt stringers Sand, gray, fine, with silt clay, brown, with silt and a trace of siderite Clay, brownish gray, silty	Location: County: C Logged by 0'- 8' 8'- 45' 45'- 50' 50'- 60' 60'- 70' 70'-120' 120'-123' 123'-140' 140'-150' Drill Hole Location: County: C Logged by 0'- 5' 5'- 25' 25'- 30' 30'-100' 100'-120' 120'-150'	NE¼, Sec. 5, T. 14 S., R. 14 W. Palhoun in Dave Lumbert 6/78. Sand, very fine, with light tan clay Gravel Clay, light brown, with very fine sand Clay, gray, with very fine sand Sand, fine, with gray clay Clay, gray, with fine to very fine sand Siderite Clay, light gray, glauconitic with very fine sand Clay, light gray, slightly micaceous, with very fine sand T. D.: 150' No. 412. Elevation 176' NW¼, Sec. 6, T. 14 S., R. 14 W. Palhoun in J. M. Howard 6/78, Silt, with irony sand concretions Sand, medium, with orange clay Sand, medium to coarse, with pea gravel Gravel, with medium to coarse sand and thin cream clay stringers Silt, dark brown, with lignite stringers Clay, gray, with silt	5'- 20' 20'- 40' 40'- 50' 50'-110' 110'-115' 115'-150' 180'-200' Drill Hole Location: County: C Logged by 0'- 5' 5'- 22' 22'- 25'- 45' 45'- 50' 50'-200' Drill Hole Location: County: C	clay Clay, red, with fine sand Gravel Clay, gray, with very fine sand and a trace of lignite Clay, gray, slightly glauconitic, with interbedded very fine sand and a trace of lignite Sand, fine Clay, gray, with very fine sand and silt, and a trace of siderite Clay, gray, with very fine sand and silt, and a trace of siderite Clay, gray, slightly glauconitic with very fine sand and silt Clay, gray, with very fine sand and silt T. D.: 200' No. 416. Elevation 124' NW¼, Sec. 32, T. 13 S., R. 15 W. salhoun Silt, cream, with fine sand Gravel Clay, brownish gray, with silt Clay, gray, silty, with a trace of lignite and siderite Silt, gray-brown Clay, gray, silty, with very fine to fine sand and a trace of lignite T. D.: 200' No. 417. Elevation 124' SW¼, Sec. 30, T. 13 S., R. 15 W. Calhoun
90'-110' 110'-120' 120'-130' 130'-192' Drill Hole Location: County: C Logged by 0'- 10' 10'- 20' 20'- 32' 32'- 45' 45'- 50' 50'- 60' 60'- 75' 75'-125' 125'-185' 185'-190'	Clay, light gray to light brown, with very fine sand Clay, gray, with very fine sand and a trace of siderite Clay, light gray, slightly glauconltic, with very fine sand Sand, very fine, with gray clay Clay, gray, with very fine sand, with a trace of lignite and siderite T. D.: 192' No. 409. Elevation 169' NW¼, Sec. 3, T. 14 S., R. 14 W. alhoun: J. M. Howard 6/78. Sand, medium, mottled, with orange clay binder Sand, medium to coarse, with pea gravel Gravel, with sand, medium to coarse Silt, dark brown, with a trace of lignite and gray clay Clay, brown, with brown silt stringers Sand, gray, fine, with silt Clay, brown, with very fine sand Clay, gray, with silt and a trace of siderite Clay, brownish gray, silty Silt, brownish gray, with clay binder	Location: County: C Logged by 0'- 8' 8'- 45' 45'- 50' 50'- 60' 60'- 70' 70'-120' 120'-123' 140'-150' Drill Hole Location: County: C Logged by 0'- 5' 5'- 25' 25'- 30' 30'-100' 100'-120' 120'-150' 150'-160'	NE¼, Sec. 5, T. 14 S., R. 14 W. Salhoun: Dave Lumbert 6/78. Sand, very fine, with light tan clay Gravel Clay, light brown, with very fine sand Sand, fine, with gray clay Clay, gray, with very fine sand Sand, fine, with gray clay Clay, gray, with fine to very fine sand Siderite Clay, light gray, glauconitic with very fine sand Clay, light gray, slightly micaceous, with very fine sand T. D.: 150' No. 412. Elevation 176' NW¼, Sec. 6, T. 14 S., R. 14 W. Calhoun: J. M. Howard 6/78, Silt, with irony sand concretions Sand, medium, with orange clay Sand, medium, with orange clay Sand, medium to coarse, with pea gravel Gravel, with medium to coarse sand and thin cream clay stringers Silt, dark brown, with lignite stringers Clay, gray, with silt Silt and very fine sand, brown-ish gray	5'- 20' 20'- 40' 40'- 50' 50'-110' 110'-115' 115'-150' 180'-200' Drill Hole Location: County: C Logged by 0'- 5' 5'- 25' 25'- 45' 45'- 50' 50'-200' Drill Hole Location: County: C Logged by	clay Clay, red, with fine sand Gravel Clay, gray, with very fine sand and a trace of lighte Clay, gray, slightly glauconitic, with interbedded very fine sand and a trace of lighte Sand, fine Clay, gray, with very fine sand and slit, and a trace of siderite Clay, gray, slightly glauconitic with very fine sand and slit Clay, gray, with very fine sand and slit T. D.: 200' No. 416. Elevation 124' NW%, Sec. 32, T. 13 S., R. 15 W. salhoun J. M. Howard Gravel Clay, brownish gray, with silt Clay, gray, silty, with a trace of lighte and siderite Silt, gray-brown Clay, gray, silty, with very fine to fine sand and a trace of lighte T. D.: 200' No. 417. Elevation 124' SW%, Sec. 30, T. 13 S., R. 15 W. Calhoun J. M. Howard G/78.
90'-110' 110'-120' 120'-130' 130'-192' Drill Hole Location: County: C Logged by 0'- 10' 10'- 20' 20'- 32' 32'- 45' 45'- 50' 50'- 60' 60'- 75' 75'-125'	Clay, light gray to light brown, with very fine sand Clay, gray, with very fine sand and a trace of siderite Clay, light gray, slightly glauconitic, with very fine sand Sand, very fine, with gray clay Clay, gray, with very fine sand, with a trace of lignite and siderite T. D.: 192' No. 409. Elevation 169' NW¼, Sec. 3, T. 14 S., R. 14 W. alhoun: J. M. Howard 6/78. Sand, medium, mottled, with orange clay binder Sand, medium to coarse, with pea gravel Gravel, with sand, medium to coarse Silt, dark brown, with a trace of lignite and gray clay Clay, brown, with brown silt stringers Sand, gray, fine, with silt Clay, brown, with very fine sand Clay, gray, with silt and a trace of siderite Clay, brownish gray, with Silt, brownish gray, with	Location: County: C Logged by 0'- 8' 8'- 45' 45'- 50' 50'- 60' 60'- 70' 70'-120' 120'-123' 123'-140' 140'-150' Drill Hole Location: County: C Logged by 0'- 5' 5'- 25' 25'- 30' 30'-100' 100'-120' 120'-150'	NE¼, Sec. 5, T. 14 S., R. 14 W. Calhoun: Dave Lumbert 6/78. Sand, very fine, with light tan clay Gravel Clay, light brown, with very fine sand Sand, fine, with gray clay Clay, gray, with very fine sand Sand, fine, with gray clay Clay, gray, with fine to very fine sand Siderite Clay, light gray, glauconitic with very fine sand Clay, light gray, slightly micaceous, with very fine sand T. D.: 150' No. 412. Elevation 176' NW¼, Sec. 6, T. 14 S., R. 14 W. Calhoun: J. M. Howard 6/78, Silt, with irony sand concretions Sand, medium, with orange clay Sand, medium, with orange clay Sand, medium to coarse, with pea gravel Gravel, with medium to coarse sand and thin cream clay stringers Silt, dark brown, with lignite stringers Clay, gray, with silt Silt and very fine sand, brown-	5'- 20' 20'- 40' 40'- 50' 50'-110' 110'-115' 115'-150' 180'-200' Drill Hole Location: County: C Logged by 0'- 5' 5'- 25' 25'- 45' 45'- 50' 50'-200' Drill Hole Location: County: C Logged by	clay Clay, red, with fine sand Gravel Clay, gray, with very fine sand and a trace of lignite Clay, gray, slightly glauconitic, with interbedded very fine sand and a trace of lignite Sand, fine Clay, gray, with very fine sand and silt, and a trace of siderite Clay, gray, with very fine sand and silt, and a trace of siderite Clay, gray, slightly glauconitic with very fine sand and silt Clay, gray, with very fine sand and silt T. D.: 200' No. 416. Elevation 124' NW¼, Sec. 32, T. 13 S., R. 15 W. salhoun Silt, cream, with fine sand Gravel Clay, brownish gray, with silt Clay, gray, silty, with a trace of lignite and siderite Silt, gray-brown Clay, gray, silty, with very fine to fine sand and a trace of lignite T. D.: 200' No. 417. Elevation 124' SW¼, Sec. 30, T. 13 S., R. 15 W. Calhoun

10'- 65' 65'-132'	Gravel with coarse sand	430/435/	sand and a trace of siderite	10'- 15'	Clay, red, with interbedded
	Clay, brownish gray, slity, with a trace of lignite	170′-175′ 175′-200′	Sand, fine, with gray clay Clay, gray, glauconitic, with	15' 50'	gravel Gravel, with interbedded tar
132′- 200 ′	Sand, tan, fine to medium, silty, with a trace of lignite and		very fine sand T. D.: 200'	50'- 60'	clay and coarse sand Clay, gray, with very fine sand
	siderite			60'-130'	Clay, gray, glauconitic, slightly
	T. D.: 200'		No. 421. Elevation 150'		micaceous, with very fine sand
Drill Hole	No. 418. Elevation 125'	County: (SE¼, Sec. 8, T. 13 S., R. 15 W.	130'-160'	and a trace of siderite
Location:	SW¼, Sec. 24, T. 13 S., R. 16 W.		: J. M. Howard 6/78.	130 -160	Clay, gray, with very fine sand slightly micaceous, and a trace
County: C	alhoun				of lignite
Logged by	: Dave Lumbert 6/78.	0'- 5' 5'- 10'	Gravel and sand	160′-180′	Clay, gray to brown, with very
0'- 5'	Clay, light tan, with fine sand	10'- 15'	Silt, gray Silt, mottled	180′-200′	fine sand and a trace of lighter Clay, gray, with interbedded
5'- 25'	Clay, light gray, with inter-	15'- 20'	Silt, light gray	.00 200	fine sand
25'- 40'	bedded tan clay, very fine sand Gravel	20'- 30' 30'- 45'	Gravel		T. D.: 200'
40'- 80'	Clay, gray, with very fine sand,	30 - 45	Clay, gray, silty, with a trace of lignite	Drill Hole	No. 425. Elevation 140'
001.4501	slightly micaceous	45'- 60'	Silt, dark gray, with very fine		NE¼, Sec. 12, T. 13 S., R. 15 W
80′-150′	Clay, gray, slightly glauconitic, with very fine sand and a trace		sand, micaceous, with trace of	County: C	
	of lignite and siderite	60'- 65'	siderite Silt, brown, with very fine	Logged by	: Dave Lumbert 6/78
150′-160′	Sand, fine, with gray clay		sand, micaceous	0'- 5'	Sand, fine to medium, with tar
160′-180′ 180′-182′	Clay, gray, with very fine sand Siderite	65'- 75'	Clay, grayish brown, silty, and		clay
100 102	T. D.: 182'	75'- 95'	a trace of lignite Silt, grayish brown, with sand	5'- 25'	Clay, gray, with fine to very
		95′-110′	Clay, grayish brown, silty, and	25'- 40'	fine sand Gravel with coarse sand
Drill Hole	No. 419. Elevation 125'	440/475/	a trace of lignite	40'- 50'	Clay, gray, with interbedded
Location:	SW¼, Sec. 2, T. 13 S., R. 16 W.	110′-175′	Sand, gray, very fine, silty, and a trace of lignite	FO1 001	medium sand
County: (Calhoun	175′-185′	Sand, gray, very fine	50'- 80'	Clay, gray, slightly glauconition and micaceous, with very fine
Logged by	v: J. M. Howard 6/78.	185′-190′	Lignite 3½' - 4' in sand		sand and a trace of lightie
0'- 5'	Silt, mottled, with medium sand	190′-200′	Sand, gray, very fine, silty T. D.: 200'	80′- 90′	Clay, gray, slightly micaceous
5'- 10'	Clay, gray, with silt		1. b 200	90'-100'	with very fine sand Clay, gray, with a trace of
10'- 20' 20'- 45'	Silt, tan, with tan clay binder	Drill Hole	No. 422. Elevation 165'	30 100	lignite
45'- 55'	Gravel with medium sand Sand, gray, very fine, with	Location:	NE¼, Sec. 9, T. 13 S., R. 15 W.	100′-140′	Clay, gray, slightly micaceous
	silt and a trace of lignite	County: (: Dave Lumbert 6/78,		with interbedded chocolate
55'- 70'	Clay, gray, with very fine sand		3,73,		brown clay, very fine sand and a trace of lignite
70'- 75'	and a trace of lignite Clay, gray, silty	0'- 10' 10'- 25'	Clay, tan, with very fine sand	140′-160′	Clay, gray-brown, very fine sand
75'- 80'	Clay, brownish gray, silty and a	25′-100′	Pea gravel Clay, gray, with very fine sand,	160′-180′	Clay, gray, very fine sand, and
00/ 05/	trace of lignite		slightly micaceous	180'-200'	a trace of lignite Clay, gray-brown, with very fine
80′- 85′	Clay, gray, silty, with lignitic partings	100′-130′	Clay, gray, with very fine sand		sand
85'-100'	Silt, gray, glauconitic, with	130′-200′	and a trace of lignite Clay, gray, slightly glauconitic,		T. D.: 200'
	gray clay and fine lignitic	, 50 200	slightly micaceous, with very	Drill Hole	No. 426. Elevation 199'
100'-115'	sand interbedded Silt, brown, micaceous, with		fine sand and a trace of siderite	Location:	NW¼, Sec. 8, T. 13 S, R. 14 W
	very fine sand		T. D.: 200'	County: C	Calhoun
115′-165′	Clay, brown, micaceous, silty,	Drill Hole	No. 423. Elevation 180'	Logged by	: J. M. Howard 6/78
165'-185'	with a trace of lignite Clay, gray-brown, with fine	Location:	NE¼, Sec. 10, T. 13 S., R. 15 W.	0'- 5'	
	sand and silt	County: (: J. M. Howard 6/78.	5'- 1 0 '	Gravel, with white sandy clay stringers
185′-200′	Clay, gray, silty, and a trace		0,70.	10'- 40'	Gravel with medium sand
	of lignite T. D.: 200'	0'- 5' 5'- 20'	Sand, coarse, with gravel	40'-200'	Sand, tan, medium, with a
		5 - 20	Gravel, with tan to cream clay stringers		trace of lignite T. D.: 200'
Drill Hole	No. 420 Eleveries 125/	20'- 30'	Clay, gray, with silt		1. 5 200
ocation:	No. 420. Elevation 135' NW¼, Sec. 7, T. 13 S., R. 15 W.	30'- 40'	Clay, gray brown, silty, with		No. 427. Elevation 219'
County: C	alhoun	40'- 55'	very fine sand Silt, gray, with very fine sand	County: C	NW¼, Sec. 9, T. 13 S., R. 14 W.
ogged by	: Dave Lumbert 6/78.		and a trace of lignite		: J. M. Howard 6/78,
0'- 5'	Clay, tan to red, with medium	55'- 60' 60'- 70'	Clay, gray, silty		
	sand	00 - 70	Silt, gray, micaceous, with inter- bedded brown lignitic silt	0'- 8' 8'- 45'	Silt, mottled, with clay binder Gravel, with white sandy clay
5'- 10'	Clay, red to white, with very	70′- 80′	Silty, brown, micaceous		stringers
10'- 80'	fine sand Pea gravel with coarse sand	80′-105′	Sand, gray, very fine, silty,	45'- 50'	Clay, gray, silty, with very
80'-100'	Clay, gray, with medium sand	105'-115'	with gray clay binder Silt, gray, with gray clay binder	50'- 80'	fine sand Silt, gray, with very fine sand,
00′-120′	and a trace of lignite	115′-130′	Sand, gray, very fine with silt	00 - 00	carbonaceous
00 120	Clay, gray to chocolate brown, with very fine sand, glauconitic,	130′-133′ 133′-200′	Siderite	80'- 85'	Clay, gray, silty, with very fine
001.100	and a trace of lignite	100 -200	Clay, gray, silty, with a trace of siderite	85'-1 00 '	sand
20'-125' 25'-130'	Clay, chocolate brown to gray Lignite		T. D.: 200'	100'-125'	Silt, gray, with very fine sand Clay, gray, silty, with carbona-
30'-135'	Clay, brown, with lignite and	Drill Hole	No. 424. Elevation 200'		ceous and sandy interbeds
	very fine sand	Location:	NE¼, Sec. 11, T. 13 S., R. 15 W.	125′-170′	Sand, gray, fine to very fine,
35′-160′	Clay, gray, slightly micaceous	County: C	alhoun	170'-175'	silty, with a trace of lignite Clay, gray, silty, with very fine
	and glauconitic, with very fine sand	Logged by	: Dave Lumbert 6/78.		sand
60′-170′	Clay, gray-green, with very fine	0'- 10'	Clay, red to tan, with fine sand	175′-200′	Silt, gray, with very fine sand T. D.: 200'
			January Inio Junu		200

Location: N	io. 428. Elevation 210' NW¼, Sec. 10, T. 13 S., R. 14 W.	40'- 50'	Clay, brown to chocolate brown, with very fine sand		Recovered: Lost:
County: C	alhoun Dave Lumbert 6/78.	5 0 ′- 55′	and a trace of lignite Clay, white to tan, with fine		8
Logged by .	Dave Lumbert 3,70.	00 00	sand		43' - 45'3" Lignite, black, firm
01 51	One de la company de la compan	55'- 6 0 '	Clay, gray, with interbed-		to soft, with silt partings 45'3" - 49'8" Lignite, hard to
0'- 5' 5'- 15'	Sand, coarse, with red clay Sand, coarse, with gravel		ded chocolate brown clay and a trace of lignite		firm, waxy, with a few silt
15'- 20'	Sand, coarse, with a trace of	60'- 80'	Clay, gray, with a trace of		partings
	brown clay and lignite		lignite and brown clay and		49'8" - 51' dark brown to black
20'- 30'	Clay, gray, with interbed-	00/ 100	very fine sand		clay, with very fine sand, slightly micaceous
	ded brown clay, very fine sand and a trace of lignite	80 - 130	Clay, gray, with very fine sand and interbedded choco-		silgitity micaceous
30'- 50'	Clay, gray, with very fine		late brown clay with a		Core Interval 151' - 157'
	sand, slightly micaceous, and		trace of lignite		
50'-140'	a trace of lignite Clay, gray, with very fine	130′-140′	Clay, gray, with sand, very fine, glauconitic		Recovered: Lost:
30 140	sand, glauconitic, and a trace	140'-150'	Clay, gray, with interbed-		5' 1'
	of siderite		ded chocolate brown clay,		
140′-150′	Sand, very fine, with gray		very fine, sand and a trace		151'-156' Clay, gray, with
150'-160'	clay and a trace of lignite Clay, gray, with interbed-	150'-170'	of lignite Clay, gray, slightly glauco-		very fine sand and silt, slight-
	ded brown clay, very fine	100	nitic with very fine sand		ly micaceous
100/105/	sand, and a trace of lignite	170′-190′	Clay, gray, slightly lignitic		156' - 157' not recovered
160′-185′	Clay, gray, with interbed- ded fine to medium glau-	190′-200′	with fine to very fine sand Clay, gray, slightly glauco-		T. D.: 200'
	conitic sand and a trace of	150 200	nitic with very fine sand		7. 5 200
	siderite and lignite		T. D.: 200'	D	100 =
185′-190′	Clay, brown, with very fine sand and a trace of				No. 432. Elevation 228' NE¼, Sec. 18, T. 13 S., R. 13 W.
	lignite	Drill Hole	No. 431. Elevation 255'	County: C	
190'- 200'	Clay, gray, with interbed-		SE¼, Sec. 6, T. 13 S., R. 13 W.	Logged by	: J. M. Howard 6/78.
	ded brown clay and very fine sand	County: (
	T. D.: 200'	Logged by	: Dave Lumbert 6/78.	0'- 15'	Sand, medium, mottled, with
					clay binder
		0'- 10'		15'- 33' 33'- 50'	Pea gravel
Drill Hole I	No. 429. Elevation 224'	10'- 15'	fine sand Clay, light gray, with very	50'- 60'	Clay, gray, micaceous, silty Clay, gray, silty, with inter-
Location:	NW¼, Sec. 11, T. 13 S., R. 14 W.		fine sand and interbedded		bedded brown clay and a
County: C		454 004	tan clay		trace of lignite and glauco-
Logged by	: J. M. Howard 6/78.	15'- 20'	Clay, tan, with interbedded very fine sand	60′- 80′	nite Clay, gray and brown inter-
		20'- 30'	Clay, light gray, with very	00 - 00	bedded, and a trace of
0'- 10'	Clay, mottled, with fine		fine sand		lignite
10'- 33'	sand Pea gravel with medium	30'- 40'	Clay, light gray, with thin	80′-110′	Clay, gray, with very fine
10 30	sand	40'- 48'	interbeds of ironstone Clay, light gray, with very		sand and a trace of lig- nite
33'- 37'	Clay, brown, with sand		fine sand and interbedded	110'-120'	Silt, gray, with a trace of
37'- 50'	Clay, gray, silty, micaceous	40' EE'	brown clay	100/ 105/	gray clay stringers
50'-100'	with very fine sand Silt, grav, with very fine	48'- 55' 55'- 60'	Lignite Clay, light gray, with very	120′-125′	Clay, gray, silty, with very fine sand
	sand and interbedded brown	5 5.0	fine sand	125'-130'	Sand, gray, fine, with gray
100/405/	clay, and a trace of lignite	60′- 80′	Clay, light gray to light		clay
100′-105′	Clay, gray, silty, and a trace of lignite		blue, with very fine sand and silt and a trace of lignite	130′-140′ 140′-170′	No sample Clay, gray, silty, micaceous,
105'-120'	Sand, very fine, silty	80'-100'	Clay, light gray to blue,	140-170	with a trace of lignite
120′-140′	Silt, gray, with very fine		with very fine sand and		T. D. 170'
140'-145'	sand and gray clay binder Clay, brown, silty, with very	100′-120′	silt Clay, gray, slightly glauco-		
	fine sand	100-120	nitic with interbedded choco-	Drill Hole	No. 433. Elevation 220'
145′-200′	Silt, gray, with very fine		late brown clay and a trace		NE¼, Sec. 19, T. 13 S., R. 13 W.
	sand and a trace of lignite T. D.: 200'	100/ 100/	of lignite	County: C	
	1. D 200	120′-130′	Clay, gray, glauconitic, with very fine sand and a trace	Logged by	: Dave Lumbert 6/78.
			of siderite		
Drill Hole !	No. 430. Elevation 230'	130′-150′	Clay, gray, with very fine	0'- 10'	
	NE¼, Sec. 12, T. 13 S., R. 14 W.		sand and interbedded choco- late brown clav	10'- 15'	sand Clay, light gray to tan, with
County: C	alhoun	150'-160'	Clay, gray, with very fine		very fine sand
Logged by	: Dave Lumbert 6/78.	400/470/	sand	15'- 50'	Gravel
		160′-170′	Clay, gray, slightly glauco- nitic with very fine sand and	50'- 55'	Gravel, with gray clay inter- beds
0'- 5'	Clay, tan to red, with fine		a trace of siderite	55'- 65'	Clay, gray, with very fine
F1 10:	sand	170′-190′	Clay, gray, with fine sand,		sand
5'- 10'	Clay, tan to gray, with fine to very fine sand		with interbedded lignite and	65′- 70 ′	Clay, gray, slightly glauco-
10'- 20'	Clay, gray, with tan clay	190′-200′	chocolate brown clay Clay, brown, with very fine	70'- 8 0 '	nitic with very fine sand Clay, gray, slightly glauco-
001	interbeds and very fine sand	200	sand and a trace of lignite		nitic, with very fine sand
20'- 25'	Clay, tan, with medium to coarse sand			80'- 90'	Clay, gray-brown, with very
25'- 40'	Gravel		Core interval 143' - 151'		fine sand and a trace of lignite
					11340

90′-110′	Lignite and lignitic brown clay with very fine sand	80'- 90'	Clay, gray, with fine sand and a trace of lignite		No. 439. Elevation 210' NW4, Sec. 29, T. 13 S., R. 13 W.
110′-120′	Clay, gray, with fine sand, slightly glauconitic and mica-	90′-100′	Clay, gray-brown, with very fine sand	County: 0	
120′-140′	ceous Clay, gray, slightly glauconitic	100′-120′	Clay, gray-brown and red, with medium to coarse sand and a	0'- 5'	Sand, fine
140′-145′	with very fine sand Clay, gray, with lignitic clay	120′-130′	trace of lignite Sand, fine, with gray clay	5'- 5 0 '	Gravel, with tan clay and fine to very fine sand
145'-160'	stringers and very fine sand Clay, gray, glauconitic, with	130′-140′	Clay, gray, with interbedded fine to very fine sand	50'- 55' 55'- 65'	Clay, gray, slightly micaceous Clay, gray, slightly lignitic
160′-165′	very fine sand Siderite	140′-175′	Sand, fine, with gray to light gray clay	65'- 7 0 '	
	Core Interval 84' - 94'	175'-190'		70'- 72' 72'- 75'	Clay, gray Lignite
	Recovered: Lost:	190′-200′		75'- 80' 80'- 85'	Clay, gray, lignitic Clay, gray, micaceous
	7' 3'		T. D.: 200'	85′-100′	Clay, gray, micaceous Clay, dark gray, with very fine sand
	84' - 87' not recovered 87' - 87'8'' clay, light gray-		No. 437. Elevation 205' NW4, Sec. 23, T. 13 S., R. 14 W.	100′-125′	Clay, dark gray to blue, with a trace of lignite
	brown, with very fine sand 87'8'' - 91'4'' Lignite, black,	County: (Calhoun :: J. M. Howard 6/78.	125′-200′	Clay, gray, micaceous, with a trace of siderite and lignite
	soft 91'4" - 92'9" Lignite, black,	0'- 10'			T. D.: 200'
	hard 92'9" - 93'7" Lignite, dark	10′- 19′ 19′-19′6′	Gravel	Drill Hole	No. 440. Elevation 200'
	brown to black 93'7" - 93'9" Clay, dark brown,	19′6′′-30	'Clay, brownish gray, with fine sand and silt		NW¼, Sec. 4, T. 14 S., R. 13 W.
	lignitic, with lignite stringers 93'9'' - 94' Clay, dark gray-	30'- 40'	Clay, dark brown, with a trace of lignite		: J. M. Howard 6/78.
	brown, with a trace of lignite stringers	40'- 55'		0'- 5'	,,
	T. D.: 165'	55'- 65'	Silt, grayish brown, with clay binder	5'- 10' 10'- 20'	clay, cream, with silt
Drill Hole I	No. 434. Elevation 160'	65'- 70' 70'- 75'	Clay, gray, with silt Lignite stringers 2' - 3' in gray	20'- 30' 30'- 40'	Pea gravel, with coarse sand Clay, cream, with silt Clay, light tan, with silt
Location: S County: C	SW¼, Sec. 29, T. 13 S., R. 13 W.	75′- 80′	silty clay Clay, brown, with silt	40'- 45'	Silt, dark brown, with very fine sand
	: J. M. Howard 6/78.	80'- 85' 85'- 92'	Clay, gray, with silt Clay, brown, with lignite	45'- 5 0'	Silt, grayish brown, with very
0'- 5' 5'- 15'	Clay, light gray, with silt Pea gravel	92′-115′	stringers approximately 1'6" Clay, light gray, silty	50'- 55'	fine sand Clay, dark brown, with lignite
15'- 5 0'	Silt, brownish gray, with gray clay binder and very fine sand	115′-130′ 130′-150′	Clay, gray, with silt Clay, brownish gray, silty, with	55′- 60′ 60′- 85′	Silt, light gray, micaceous
50'- 60'	with a trace of lignite Silt, light brown, with clay		very fine sand and a trace of lignite	85′-100′	Clay, grayish brown, with silt and a trace of lignite
60'-2 00'	binder and very fine sand Silt, light brown, with fine sand	150′-160′	Clay, gray, with silt and a trace of lignite	100′-200′	Clay, gray, silty, micaceous, with a trace of lignite
	and a trace of lignite T. D. 200'	160′-200′		100 -200	Silt, gray, with very fine sand and gray clay binder, with a
			T. D.: 200'		trace of lignite Core Interval 49'6" - 54'6"
Location: S	No. 435. Elevation 203' SW¼, Sec. 30, T. 13 S., R. 13 W.	Drill Hole Location:	No. 438. Elevation 200' NW¼, Sec. 15, T. 13 S., R. 14 W.		
County: C	alhoun : J. M. Howard 6/78.	County: C	alhoun : Dave Lumbert 6/78.		Recovered: Lost: 42" 18" 49'6" - 51' not recovered
		0'- 5'	Clay, tan, with fine sand		51' - 53'8" Lignite, black, soft 53'8" - 54'6" Clay, light tan,
0'- 5' 5'- 35'	Silt, brown, with medium sand Gravel	5'- 15' 15'- 20'	Gravel Clay, gray to tan, with inter-		silty T. D.: 200'
35′- 90′	Clay, cream, with white silty interbeds		bedded chocolate brown clay	Drill Hole	No. 441. Elevation 200'
90′-165′	Clay, cream, with silt and very fine sand	20'- 25'	Clay, gray-brown, with very fine sand and a trace of		SW¼, Sec. 3, T. 14 S., R. 13 W.
165′-200′	Sand, fine, with a trace of lignite	25'- 30'	lignite Clay, gray, with very fine sand		: J. M. Howard 6/78,
	T. D. 200'	30'- 40'	and a trace of lignite Clay, gray, with very fine sand	0'- 10' 10'- 20'	Sand, mottled, fine, silty Gravel with coarse sand
Deill Hala N	1- 420	40′- 45′	Clay, gray to light gray, with very fine sand	20'- 30'	Clay, gray and brown inter- bedded, with a trace of lignite
Location: N	lo. 436. Elevation 205' NW¼, Sec. 25, T. 13 S., R. 14 W.	45′- 50′ 50′- 80′	Clay, light gray, silty Clay, gray, with very fine sand,	30'- 40'	Clay, greenish- gray, glauconitic, silty
County: Ca	lhoun Dave Lumbert 6/78.	80'- 90'	slightly micaceous Clay, gray, with very fine sand,	40'- 45' 45'- 65'	Clay, greenish- gray Clay, greenish-gray, with inter-
0'- 20'	Clay, white to light gray, with	90'-120'	slightly glauconitic Clay, gray, with very fine sand	65'- 70'	bedded light brown clay Clay, gray, with brown silt
20'- 45'	fine sand Gravel, with some light gray	120′-140′	Clay, gray, slightly glauconitic, micaceous, with very fine sand	70	interbedded, and a trace of lignite
45'- 60'	clay partings Clay, gray to light gray, with	140′-150′	and a trace of siderite Clay, gray, with very fine sand	70'- 80'	Silt, brownish gray, with gray clay binder and a trace of
60 80,	iron stain and very fine sand Clay, gray to light gray, with	150′-170′	Clay, gray to dark gray, with very fine sand	80′ 95′	glauconite Lignite, dark brown
	very fine sand		T. D. 170'	95′-100′	Clay, dark brown

100'-110'	Clay, greenish-gray, with inter-		143. Elevation 208'		silt and a trace of glauconite
	bedded light brown clay and a trace of glauconite	Location: S County: C	SE¼, Sec. 12, T. 14 S., R. 13 W.	110′-115′	and lignite Clay, greenish-gray, with glau-
110'-115'	Clay, gray, with silt		J. M. Howard 6/78.		conite
115′-120′	Clay, gray and light brown inter- bedded	0'- 10'	Sand, mottled, very fine with	115′-135′	Clay, gray, with silt and a trace of lignite
120'-125'	Silt, light brown, micaceous,	10'- 15'	silt	135′-140′	Clay, gray, with interbedded brown slit
125'-130'	with very fine sand Clay, light brown, with silt	10 - 15	Sand, light gray, very fine, with silt	140'-150'	Silt, brown, with brown clay
130′-135′ 135′- 140 ′	Clay, light brownish gray Lignite, with light brown clay	15'- 30' 30'- 35'	Pea gravel Sand, dark brown, fine, with	150′-155′	binder and a trace of glauconite Clay, brown, with a trace of
140'-145'	Clay, light brown		silt		glauconite and lignite
145′-150′ 150′-160′	Clay, light gray Sand, very fine, with silt	35'- 45'	Clay, greenish-gray, with a trace of glauconite and lignite	155′-1 60 ′	Clay, gray, with interbedded dark brown, lignitic slit
100 100		45'- 50'	Silt, dark brown, with fine sand	160'-165'	Silt, dark brown, lignitic
	Core Interval 80' - 90'	50'- 55'	and a trace of lignite Clay, gray, with interbedded	165′-170′	Clay, gray, with silt and a trace of lignite
	Recovered: Lost: 10'		light brown silt and a trace of lignite	170′-180′	Clay, gray, with a trace of dark brown clay interbedded, slightly
		55'- 70'	Clay, gray, with silt	100/ 000/	glauconitic
	80'- 84' sand, light gray, very fine, with clay binder, with thin	70'- 75'	Clay, greenish-gray, with a few brown clay interbeds	180′-200′	Clay, light brown, with silt T. D.: 200'
	lignite partings 84'- 90' clay, light gray, with	75'- 80' 80'- 89'	Clay, gray, with silt Silt, gray, with gray clay binder	Drill Hole	No. 446. Elevation 212'
	very fine sand and silt slightly	89'- 89'6	" Siderite	Location:	NE¼, Sec. 4, T. 14 S., R. 12 W.
	micaceous and carbonaceous	89'6''-110 110'-140'	O' Silt, gray, with very fine sand Clay, gray, silty, very fine sand	County: County	ainoun : W. V. Bush 6/78.
	Core Interval 90'-100'		and a trace of lignite	0'- 5'	Clay, brown, sandy, with
	Recovered: Lost:	140′-145′ 145′-150′	Silt, gray, with very fine sand Clay, gray and brown inter-		gravel
	7′ 3′	150'-160'	bedded, with silt Clay, brownish gray, with a	5′- 35′ 35′- 40 ′	Gravel and fine sand Clay, gray, with very fine
	90'-93' not recovered 93'-94'2'' clay, light greenish-	160′-190′	trace of lignite Clay, brown, with a trace of	40'- 45'	sand Clay, gray to tan, with a trace
	gray 94'2" - 99'10" lignite, black,	190′-200′	lignite Clay, gray, with silt	45'- 55'	of lignite Clay, greenish-gray, with a trace
	hard 99'10" - 100' clay, dark brown,	190 -200	T. D.: 200'	43 - 33	of tan to brown clay, very fine sand, iron stained
	lignitic, with lignite		No. 444. Elevation 213'	55'- 60' 60'- 70'	Clay, gray, with very fine sand
	Core Interval 100'-106'6"	County: C		70'- 75'	Clay, gray, with gravel Clay, gray, with very fine sand,
	Recovered: Lost:	Logged by	: W. V. Bush 6/78.	75'- 95'	glauconitic Clay, gray, with very fine sand
	0′ 6′6″	0'- 10'	Clay, tan, sandy, with iron stain	95′-100′ 100′-150′	Clay, gray, with fine sand Clay, gray-brown to tan, with
	Approximately 2' of lignite penetrated according to drillers'	10′- 18′	Clay, gray and tan, with fine sand and silt	150′- 160 ′	fine sand, iron stained Clay, greenish-gray, with very
	log. Bottomed in gray clay.	18'- 67'	Gravel, with gray clay and fine		fine sand
	T. D.: 160'	67'-125'	sand Clay, gray, with very fine	160′-165′	Clay, greenish-gray, with very fine sand and a trace of lignite
		125′-150′	sand, slightly micaceous Clay, gray, with very fine	165′-185′ 185′-200′	Clay, gray, with fine sand Clay, gray to tan, with fine
			sand and a trace of lignite	185 -200	sand
	No. 442. Elevation 208' NW¼, Sec. 11, T. !4 S., R. 13 W.	150′-175′ 175′-190′	Clay, gray, with very fine sand Clay, gray, with fine sand		T. D.: 200'
County: C		190′-200′	Clay, gray to tan, with sand		No. 447. Elevation 205' SW4, Sec. 18, T. 14 S., R. 12 W.
Logged by	. W. V. Busii 6/76.		stringers T. D. 200'	County: 0	Calhoun
0'- 5'	Clay, sandy, with gravel	Drill Hole	No. 445. Elevation 216'	Logged by	: J. M. Howard 6/78.
5'- 32'	Gravel, with tan to gray clay, micaceous, with fine sand	Location:	NW¼, Sec. 9, T. 14 S., R. 12 W.	0'- 10'	Sand, mottled, medium to fine,
32'- 35'	Clay, gray	County: 0 Logged by	: J. M. Howard 6/78.		
35'- 50'	Clay, gray to light tan, mica- ceous, with a trace of lignite	0'- 10'		29'- 35' 35'- 40 '	Clay, light brown, with silt Sand, very fine, with silt
50'- 70'	Clay, gray, glauconitic with	5 10	silty, with a trace of light gray	40'- 50'	Clay, light brown, silty, with a
	very fine sand and a trace of lignite	10'- 30'	clay Pea gravel	5 0' - 55'	trace of lignite Sand, light brownish-gray, very
70′-100′	Clay, gray, with sand stringers and a trace of lignite	30′- 35′	Clay, light gray to cream, with silt	55'- 60'	fine, with silt Clay, light brownish-gray, with
100'-110'	Clay, gray, micaceous	35′- 50′	Clay, brownish-gray, with silt		a trace of lignite
110′-115′	Clay, gray-brown, with approxi- mately 1' of lignite	50'- 60'	Clay, gray, with silt and a trace of glauconite and lignite	60'- 65'	Clay, dark brown, with lignite approximately 1' - 2' thick
115′-125′	Clay, gray, with sand stringers and a trace of lignite	60'- 65' 65'- 70'	Clay, brown, with silt Clay, brown and gray inter-	65'- 70' 70'- 75'	Clay, light gray, with silt Clay, greenish-gray, with silt
125′-135′	Clay, gray-brown to tan, mica-	00 - 70	bedded, with a few brown	75'- 8 0 '	Clay, greenish-gray and brown
135′-150′	ceous, with very fine sand Clay, greenish-gray, with a trace of lignite	70′- 90′	sand interbeds Clay, greenish-gray, with a trace of glauconite	80'- 85'	interbedded, with a trace of lignite
150'-165'	Clay, gray, micaceous	90′-100′	Clay, brown, with a trace of		Clay, brown, with a trace of lignite
165′-200′	Clay, gray to tan, with fine sand and a trace of lignite	100′-105′	glauconite and lignite Clay, greenish-gray	85′- 100′	Silt, greenish-gray, with gray clay binder and a trace of
	T. D.: 200'	105′-110′	Clay, brown, with dark brown		glauconite and lignite

100′-110′	Sand, greenish-gray, very fine micaceous, silty, with a trace		No. 449. Elevation 201' NE¼, Sec. 29, T. 14 S., R. 12 W.	115′-120′	Clay, dark brown, with lighte approximately 2'
110′-125′	of glauconite and lignite Sand, light brown, fine, inter-	County:		120′-130′	Silt, brown, with very fine sand and a trace of lignite
	bedded with dark brown lignitic silt	0'- 20'	Sand, orange, medium to fine	130′-200′	Clay, light gray with very fine sand, silty, and a trace
125′-130′ 130′-135′	Clay, gray, with silt Clay, dark brown, with a trace	20'- 55'	with silt Pea gravel, with coarse sand		of lignite T. D.: 200'
135′-145′	of lignite Clay, brown, with silt and a trace of glauconite and lignite	55'- 65' 65'- 90'			No. 452. Elevation 205'
145′-150′	Silt, brown, with very fine sand and a trace of lignite	90′-125′	medium to fine, with a trace of lignite Sand, fine to very fine, with silt,	County: 0	SE¼, Sec. 21, T. 13 S., R. 13 W. Calhoun 6/78.
150'-155'	Clay, brown, silty, with a trace of lignite	125′-130′	micaceous Sand, orange, fine to very fine,	0'- 10'	
155′-167′	Clay, greenish-gray, silty, with a trace of lignite	130′-180′	with silt Sand, gray, fine to very fine	10'- 30'	with pea gravel Gravel, with tan to brown
167-169′ 169′- 180 ′	Siderite Clay, gray, with silt, and a	180′-200′	Clay, gray, silty, with a trace of lignite	30'- 35'	clay and fine sand Clay, gray, with very fine sand
180′- 190′	trace of lignite Silt, gray, with a gray clay binder		T. D.: 200'	35′- 50′	Clay, gray to tan, with very fine sand
190′-195′	Silt, brown, with brown clay binder	Drill Hole	No. 450. Elevation 175' NW¼, Sec. 33, T. 14 S., R. 12 W.	50'- 55' 55'- 60'	Clay, greenish-gray, with a trace of lignite
195′-2 0 0′	Clay, brown, with silt T. D.: 200'	County:	Calhoun y: W. V. Bush 6/78.	00 - 00	Clay, greenish gray, with very fine sand, with approximately 1'6" lignite
Drill Hole	No. 449 - Florida 4054	0'- 5'	Clay, reddish brown, with fine	60'- 65'	Clay, gray to tan, with sait and pepper sand, and a trace of
Location: County: 0	No. 448. Elevation 195' SE¼, Sec. 19, T. 14 S., R. 12 W.	5′- 13′	sand Gravel, with gray clay and fine	65'- 85'	lignite Clay, gray, with very fine sand
	: W. V. Bush 6/78.	13′- 30′	sand Clay, light gray, with very fine sand	85′- 90′	Clay, gray, with a trace of dark brown clay and lignite
0'- 5'	Clay, light brown, silty, with sand	30'- 35'	Clay, light gray to gray, with very fine sand and approximate-	90′-100′	Clay, gray to dark brown, with very fine sand and a trace of tan clay
5′- 8′	Clay, light brown to tan, with fine sand and gravel	35'- 40'	ly 2' of lignite	100′-115′	Clay, gray and dark brown inter- bedded, and a trace of lignite
8'- 28' 28'- 35'	Gravel with clay, light brown to tan, and fine sand		very fine sand and a trace of lignite	115′-150′	Clay, gray, with dark brown stain
35'- 50'	Clay, gray Clay, gray, with fine to very fine sand and a trace of lignite	40′- 50′	Clay, gray to light tan, with very fine sand, with a trace	150′-165′	Clay, gray, with light tan clay and very fine sand
50′- 55′	Clay, tan to brown, iron stained with very fine sand and a trace	50′- 60′	of siderite and lignite Clay, greenish-gray, glauconitic, with very fine sand	165′-180′	Clay, light gray, with fine sand and a trace of lignite T. D.: 180'
55′- 6 0 ′	of lignite Clay, greenish-gray, glauconitic	60′-100′	Clay, greenish-gray, with very fine sand	Drill Hole	No. 453. Elevation 229'
60'- 70'	with a trace of lignite Clay, greenish-gray, with very fine sand	100′-105′ 105′-120′	Clay, greenish-gray, glauconitic Clay, dark greenish-gray, with	Location: County: C	SW¼, Sec. 15, T. 13 S., R. 13 W.
70′- 75′	Clay, tan to light brown, with fine sand	120′-125′	very fine sand, glauconitic Clay, gray, with very fine		: J. M. Howard 6/78.
75′- 8 0′	Clay, gray to greenish-gray, glauconitic, with very fine sand	125′-145′	sand and a trace of lignite Clay, greenish-gray, with very fine sand	0'- 12'	to fine sand
80'- 90'	and a trace of lignite Clay, greenish-gray, with fine	145′-185′ 185′-195′	Clay, gray, with fine sand Clay, greenish-gray, with very	12'- 30' 30'- 40'	Pea gravel with medium to coarse sand Sand, tan to white, salt and
90'-105'	clay, gray-brown to tan,	195′-200′	fine sand, glauconitic Clay, greenish-gray, with fine	40′- 80′	pepper, medium to coarse Sand, salt and pepper, fine
105′-115′	with fine sand and a trace of lignite Clay, gray, with very fine sand		sand T. D.: 200 '		to medium, with a trace of lignite
115'-125'	Clay, gray to tan, with very fine sand and a trace of	Drill Hole	No. 451. Elevation 218'	80′-105′	Clay, gray, silty, with a trace of siderite and lignite
125'-140'	lignite Clay, gray, with very fine sand	Location: County: (NW¼, Sec. 33, T. 13 S., R. 13 W.	105′-110′ 110′-125′	Silt, gray, with gray clay binder Sand, salt and pepper, fine to medium
140′-145′ 145′-1 50 ′	Clay, greenish-gray, with very fine sand	Logged by	: J. M. Howard 6/78.	125′-130′	Clay, brown, with approximate- ly 2' of lignite
140 100	Clay, gray to dark brown, with very fine sand and a trace of lignite	0′- 10′ 10′- 37′	binder	130′-135′ 135′-180′	Clay, brown Clay, gray
150'-155'	Clay, dark gray, with very fine sand	37'- 60' 60'- 75'	Gravel Clay, cream, with silt	180′-200′	Sand, gray, medium to fine
155′-165′ 165′-170′	Clay, gray, with very fine sand Clay, gray to dark brown, with	75'- 85'	Sand, cream, silty, with a trace of gray clay binder Clay, dark brown to black,		Core Interval 135' - 145' Recovered: Lost:
170′-175′	very fine sand and a trace of lignite		with approximately 2' of lignite		136" - 139'6" sand, light greenish-gray, with thin lignite part-
175′-190′	Clay, reddish brown to dark brown, with very fine sand Clay, greenish-gray, with very	85′- 95′	Clay, gray, with gray silt interbeds		ings 139'6" - 140' clay, dark green-
190′-200′	fine sand and a trace of lignite	95′- 10 5′	Silt, gray, micaceous, with very fine sand and a trace of		ish-gray, with very fine sand and silt, slightly lignitic
755 200	Clay, gray, with very fine sand T. D.: 200'	105′-115′	lignite Sand, gray, silty, with approxi-		140' - 142' lignite, black, hard 142' - 145' not recovered
			mately 1' of lignite		T. D.: 200'

Location: County: 0	No. 454. Elevation 218' SE¼, Sec. 10, T. 13 S., R. 13 W. Zalhoun :: W. V. Bush 6/78.	Location: County: C	No. 456. Elevation 235' NW¼, Sec. 1, T. 13 S., R. 13 W. alhoun : W. V. Bush 6/78.	Location: County: (No. 459. Elevation 158' NW¼, Sec. 21, T. 12 S., R. 12 W. Calhoun : J. M. Howard 6/78.
		0'. 5'	Sand and clay, light gray to	0'- 10'	Clay, light gray, with silt and
0'- 5'	Clay, cream to tan, with Iron	0. 5	reddish brown, iron stained	0 - 10	fine sand
5'· 15'	stain and a trace of gravel Clay, tan to reddish brown,	5'- 1 5'	Clay, light gray to reddish brown, with fine sand	10'- 15'	Sand, gray, medium to fine, with a trace of gravel
15'-30'	with fine sand Clay, tan to light gray, sandy	15′- 20′	Clay, light gray, with brown lignitic clay	15'- 30 ' 30'- 35'	Clay, gray, with silt Clay, light brown, with silt
30'- 50'	Sand, salt and pepper, with gray	20'- 35'	Clay, bluish-gray, with brown	35'- 45'	Clay, brownish-gray, with silt
50'- 70'	clay Clay, tan to reddish brown,	35′- 90′		45'- 50'	Clay, gray, silty, with a trace of dark brown, lignitic clay
70'- 75'	with fine sand Clay, light greenish-gray, glau-		T. D.: 90'	50'- 65' 65'- 70'	Clay, gray, with silt Clay, brown
75'- 90 '	conitic, with very fine sand Clay, light greenish-gray, with		No. 457. Elevation 201' SW¼, Sec. 32, T. 12 S., R. 12 W.	70'- 95'	Clay, brownish gray, with a trace of lignite
90′-110′	very fine sand Clay, light gray, with a trace of	County: (Calhoun	95′-100′	Sand, gray, fine, with silt Clay, dark brown, with very
	lignite			100′-105′	fine sand and silt, with approxi-
110′-115′ 115′-150′	Clay, dark brown, silty, lignitic Clay, gray, with fine sand	0'- 25'	Clay, light gray, with silt and very fine sand	105′-114′	mately 1'6" of lignite Clay, brownish gray, with fine
150'-165'	Sand, with gray clay	25'- 30'	Clay, light brown, with silt	100 - 114	sand
165′-175′	Clay, tan to gray, with fine sand	30'- 35' 35'- 50'	Clay, gray, with silt Clay, light brown, with silt	114′-120′	Clay, gray, with a trace of siderite and lignite
175′-180′	Sand, and gray clay, with a	50 '- 55'	Clay, greenish-gray, glauconitic	120'-125'	Clay, brown
180′-200′	trace of lignite	55′- 75′	Clay, greenish-gray, micaceous,	125′-130′	Clay, dark brown, with a trace
180 -200	Clay, dark brown, lignitic, with sand	75′- 90′	silty, with a trace of lignite Clay, brownish-gray, with silt	130′-135′	of lignite Clay, brown and gray inter-
	T. D.: 200'	90'- 95'	Clay, gray, with silt		bedded
		95′-100′	Clay, dark brown, with approximately 1' - 1'6'' of lignite	135′-140′	Sand, gray, fine, silty, with approximately 6" - 1' of lignite
	No. 455. Elevation 280' SW¼, Sec. 2, T. 13 S., R. 13 W.	100'-105' 105'-110'	Silt, lignitic Clay, brownish-gray	140′-145′	Clay, brown, with a trace of lignite
County: C	alhoun	110'-115'	Clay, gray	145′-160′	Clay, brownish-gray, with silt
Logged by	: J. M. Howard 6/78.	115′-120′	Clay, dark brown, with approximately 1' - 2' of lignite	160'-200'	and a trace of lignite Sand, gray, fine to very fine,
0'- 5'	Sand, brown, with silt	120'-125'	Clay, dark brown and gray inter-		silty, with a trace of lignite
5'- 25'	Pea gravel	125'-140'	bedded Clay, gray, with silt		T. D.: 200'
25'- 35'	Clay, mottled pink and white	140'-155'	Silt, dark brown, with approxi-		No. 460. Elevation 170'
35'- 40' 40'- 45'	Clay, cream , Clay, light gray	155'-170'	2'6" of lignite		NW1/4, Sec. 16, T. 12 S., R. 12 W.
45'- 50'	Clay, brownish gray, with silt	155 -170	Sand, gray, with silt and a trace of lignite	County: C	ainoun : W. V. Bush 6/78.
50'- 55'	Clay, brown, with a trace of lignite	170′-175′	Clay, gray, with silt and a trace		
55'- 6 0'	Clay, gray and brown, with	175′-200′	of lignite Sand, tan, with silt and a trace	0'- 5' 5'- 10'	Sand, with gray clay and gravel Gravel, with sand
60'- 65'	silt Clay, dark brown, with a trace		of lignite	10'- 15'	Clay, tan to gray, with fine sand and gravel
65'- 70'	of lignite Clay, light greenish gray		Core Interval 114' - 118'	15'- 20' 20'- 50'	Clay, light gray, with fine sand
70'- 75' 75'- 80'	Clay, greenish-gray, glauconitic		Recovered: Lost:	50'- 65'	Clay, gray, with very fine sand Clay, gray, with brown, silty
80'- 85'	Clay, light brown Silt, greenish-gray, micaceous,		38'' 10'' 114' - 114'6'' lignite, black,	65'- 70'	lignitic clay Clay, gray, with silty, brown,
85'- 9 0 '	with greenish-gray clay binder Clay, dark brown	Ţ	hard 114'6'' - 114'7'' clay, black,		lignitic clay and approximately
90'- 95'	Clay, gray and brow interbed-		lignitic	70'- 80'	1' - 2' of lignite Clay, gray, with silty brown,
95'-105'	ded Clay, gray, with silt		114'7" - 117'2" clay, greenish- gray, with very fine sand,		lignitic clay and a trace of lignite
105′-110′	Clay, dark brown, with approximately 1' of lignite		slightly micaceous 117'2" - 118' not recovered	80′-100′	Clay, greenish-gray, with very
110′-117′	Silt, greenish-gray, micaceous with clay binder		T. D.: 200'	100'-125'	fine sand Clay, gray to light blue, with
117′-135′	Clay, gray, silty, glauconitic,		No. 458. Elevation 165'	125′-140′	fine sand Clay, gray, sandy
	with a trace of siderite and lignite	Location: County: C	SW¼, Sec. 28, T. 12 S., R. 12 W.	140′-150′	Clay, gray, with fine sand
135′-150′	Clay, brown, with a trace of lignite		: W. V. Bush 6/78.	150′-160′	Clay, gray and brown inter- bedded, with very fine sand and
150'-155'	Clay, light gray	0'- 5'	Sand, with cream clay		silt T. D.: 160'
155′-160′ 160′-165′	Clay, light brown, silty	5'- 15'	Sand and clay, tan, with a		
100-100	Sand, fine, silty, with brown clay binder and approximately	15'- 20'	trace of gravel Clay, tan to light gray, with	Drill Hole Location:	No. 461. Elevation 219' NE¼, Sec. 8, T. 12 S., R. 12 W.
165′-170′	6" - 1' of lignite Clay, brown, micaceous, with	20'- 50'	fine sand Clay, medium gray, with fine	County: C	Calhoun: J. M. Howard 6/78.
170′-180′	a trace of lignite Clay, dark brown, with lignitic	50'- 65'	sand and a trace of siderite		
180′-185′	silt		Clay, gray, with brown lignitic clay, silty, with very fine sand	0′- 15′ 15′- 40′	Clay,gray,with fine sand and silt Pea gravel, with fine sand
	Clay, brown, glauconitic with approximately 6" - 1' of lignite	65′-100′ 100′-120′	Clay, gray, with very fine sand Clay, gray	40′-113′	Sand, tan, salt and pepper, fine to very fine
185′-200′	Clay, dark brown, with approximately 6" - 1' of lignite	120′-200′	Clay, gray, with fine to very fine sand	113'-200'	Clay, gray, with very fine
	T. D.: 200'		T. D.: 200'		sand and silt T. D.: 200'

Drill Hole					
	No. 462. Elevation 195'	30'- 35'	Clay, brown, with silt		fine sand
	NE¼, Sec. 5, T. 12 S. R. 12 W.	35'- 40'	Clay, greenish gray	110'-115:	Clay, gray, glauconitic, with
County: C		40'- 55'	Clay, gray and brown, inter-		interbedded lignitic clay and
Logged by	v: W. V. Bush 6/78.		bedded		very fine sand
0/ 5/	0 1 1111	55′- 65′	Clay, green, glauconitic	115′-125′	Clay, gray, glauconitic, with fine
0'- 5'		65'- 90'	Clay, light brown, with a trace		sand
5'- 25'	sand and tan clay	00/440/	of greenish-gray clay and lignite	125′-135′	Clay, gray, slightly glauconitic,
5 - 25	Sand and clay, light gray to tan, with a trace of gravel	90′-110′	Clay, light gray, with a trace of	4051 4501	with very fine sand
25'- 45'	Clay, tan, with fine sand	110'-115'	lignite	135′-150′	Clay, gray, with fine to very
45'- 55'	Clay and sand, salt and pepper	110 -115	Silt, dark brown, lignitic, with approximately 6" of lignite	150'-170'	fine sand interbedded
55'- 60'	Clay, tan to light gray, with	115′-120′	Clay, light brown	150-170	Clay, gray, slightly glauconitic,
	interbedded brown clay	120′-130′	Clay, hight brown Clay, brown and greenish gray	170'-185'	with very fine sand
60'- 65'	Clay, tan, with salt and pepper	120 100	interbedded	170-165	Clay, gray, slightly glauconitic,
	sand	130'-170'	Clay, greenish brown		with brown clay and very fine sand interbedded
65'- 70'	Clay, light gray to tan, with	170′-200′	Clay, greenish brown, with very	185'-200'	Clay, gray, with very fine sand
	brown lignitic clay interbeds		fine sand and silt, micaceous	100 200	T. D.: 200'
	and a trace of lignite		T. D.: 200'		1, 5 200
70′- 75′	Clay, gray, with very fine			Drill Hole	No. 468. Elevation 260'
	sand	Drill Hole	No. 466. Elevation 343'		SW¼, Sec. 19, T. 11 S., R. 13 W.
75′-1 10 ′	Clay, gray, sticky	Location:	NW¼, Sec. 7, T. 11 S., R. 13 W.	County: C	
	T. D.: 110'	County: (Calhoun		: Dave Lumbert 6/78.
		Logged by	: J. M. Howard 6/78.		
				0'- 5'	Clay, light gray to tan, with
Duill Hale	N= 462 51 11 0051	0'- 28'	Clay, tan, with a trace of silt		very fine sand
Location:	No. 463. Elevation 225'	28'- 40'		5'- 25'	Clay, light tan, with fine to
County: (NW¼, Sec. 32, T. 11 S., R. 12 W.	40/ 50/	bedded		very fine sand
	v: J. M. Howard 6/78,	40'- 50'	Silt, greenish-gray and brown,	25'- 35'	Clay, light tan to light gray,
Logged by	7. J. W. Howard 6/78,	50'- 65'	with clay binder		with very fine sand
0'- 10'	Clay, mottled, with fine sand	50 - 65	Clay, brown, silty, with a trace	35'- 40'	Clay, red, with very fine sand
10'- 20'	Clay, cream	65'- 75'	of lignite	40'- 45'	Clay, light gray, with inter-
20'- 28'	Clay, mottled, with silt	05 - 75	Silt, green, glauconitic, with		bedded red clay, and very fine
28'- 35'	Clay, gray, with silt	75'- 9 5'	very fine sand Clay, greenish-gray, glauconitic	45' 50'	sand
35'- 45'	Clay, dark brown, with approxi-	95'-115'	Clay, greenish-brown, glauconi-	45′- 5 0 ′	Clay, light tan to light gray,
	mately 1' to 2' of lignite	00 110	tic, with a trace of lignite	50'-55'	with very fine sand
45'- 55'	Clay, light greenish-gray, with	115'-120'	Clay, gray	30 -33	Clay, light tan, with inter- bedded gray clay and very fine
	glauconite	120'-130'	Clay, brown, with approximate-		sand
55'- 60'	Clay, gray, with silt		ly 1' of lignite	55'- 80'	Clay, gray, slightly glauconitic,
60′- 65′	Clay, dark brown	130'-145'	Clay, gray	00 00	with very fine sand
65'- 70'	Clay, brownish gray	145'-160'	Clay, light brown, with a trace	80'- 90'	Clay, gray, glauconitic, mica-
70′- 75′	Clay, chocolate brown, with		of lignite		ceous, with very fine sand
	a trace of lignite	160'-165'	Clay, greenish-gray	90'-100'	Clay, gray, glauconitic, with
75′- 8 0 ′	Clay, brownish gray, with	165′-170′	Clay, dark brown, with approxi-		interbedded very fine sand
201 251	silt		mately 1' of lignite	100'-200'	Clay, gray, slightly glauconitic,
80′- 85′	Silt, with brownish gray clay	170′-175′	Clay, brownish gray		with very fine sand
85'- 95'	binder	175′-185′	Clay, brownish gray, silty, with		T. D.: 200'
95'-115'	Clay, brownish gray, with silt	405/ 000/	approximately 1' of lignitic silt		
115'-120'	Clay, gray, with silt Silt, gray, with gray clay binder	185′-200′	Silt, brown, micaceous, with		
			brown clay binder		No. 469. Elevation 265'
120 - 125					
120′-125′ 125′-135′	Clay, gray, with silt		T. D.: 200'	Location:	NW¼, Sec. 31, T. 11 S., R. 13 W.
120'-125' 125'-135' 135'-185'	Clay, gray, with silt Clay, greenish-gray, with silt	Drill Hole	T. D.: 200'	Location: County: C	NW¼, Sec. 31, T. 11 S., R. 13 W. alhoun
125'-135'	Clay, gray, with silt Clay, greenish-gray, with silt Clay, brownish gray, with silt		T. D.: 200' No. 467. Elevation 301'	Location: County: C	NW¼, Sec. 31, T. 11 S., R. 13 W.
125′-135′ 135′-185′	Clay, gray, with silt Clay, greenish-gray, with silt	Location:	T. D.: 200' No. 467. Elevation 301' SE¼, Sec. 13, T. 11 S., R. 14 W.	Location: County: C Logged by	NW¼, Sec. 31, T. 11 S., R. 13 W. alhoun : J. M. Howard 6/78.
125′-135′ 135′-185′	Clay, gray, with silt Clay, greenish-gray, with silt Clay, brownish gray, with silt Clay, brown, with silt	Location: County: C	T. D.: 200' No. 467. Elevation 301' SE¼, Sec. 13, T. 11 S., R. 14 W. alhoun	Location: County: C	NW%, Sec. 31, T. 11 S., R. 13 W. alhoun: J. M. Howard 6/78. Sand, mottled, very fine with
125'-135' 135'-185' 185'- 200 '	Clay, gray, with silt Clay, greenish-gray, with silt Clay, brownish gray, with silt Clay, brown, with silt T. D.: 200'	Location: County: C	T. D.: 200' No. 467. Elevation 301' SE¼, Sec. 13, T. 11 S., R. 14 W.	Location: County: C Logged by O'- 5'	NW¼, Sec. 31, T. 11 S., R. 13 W. alhoun: J. M. Howard 6/78. Sand, mottled, very fine with silt
125'-135' 135'-185' 185'-200' Drill Hole	Clay, gray, with silt Clay, greenish-gray, with silt Clay, brownish gray, with silt Clay, brown, with silt T. D.: 200'	Location: County: C Logged by	T. D.: 200' No. 467. Elevation 301' SE¼, Sec. 13, T. 11 S., R. 14 W. alhoun : Dave Lumbert 6/78.	Location: County: C Logged by	NW¼, Sec. 31, T. 11 S., R. 13 W. alhoun : J. M. Howard 6/78. Sand, mottled, very fine with silt Clay, cream to light gray, with
125'-135' 135'-185' 185'-200' Drill Hole Location:	Clay, gray, with silt Clay, greenish-gray, with silt Clay, brownish gray, with silt Clay, brown, with silt T. D.: 200' No. 464. Elevation 191' SW'4, Sec 20, T. 11 S., B. 12 W.	Location: County: C Logged by	T. D.: 200' No. 467. Elevation 301' SE¼, Sec. 13, T. 11 S., R. 14 W. alhoun	Location: County: C Logged by O'- 5'	NW%, Sec. 31, T. 11 S., R. 13 W. alhoun: J. M. Howard 6/78. Sand, mottled, very fine with silt Clay, cream to light gray, with silt
125'-135' 135'-185' 185'-200' Drill Hole Location: County: C	Clay, gray, with silt Clay, greenish-gray, with silt Clay, brownish gray, with silt Clay, brown, with silt T. D.: 200' No. 464. Elevation 191' SW¼, Sec 20, T. 11 S., R. 12 W. Calhoun	Location: County: C Logged by 0'- 10' 10'- 15'	T. D.: 200' No. 467. Elevation 301' SE¼, Sec. 13, T. 11 S., R. 14 W. alhoun : Dave Lumbert 6/78. Clay, gray, with very fine sand Clay, light gray, with very fine sand sand	Location: County: C Logged by 0'- 5' 5'- 25'	NW%, Sec. 31, T. 11 S., R. 13 W. alhoun: J. M. Howard 6/78. Sand, mottled, very fine with silt Clay, cream to light gray, with silt Clay, light brown, with silt
125'-135' 135'-185' 185'-200' Drill Hole Location: County: C	Clay, gray, with silt Clay, greenish-gray, with silt Clay, brownish gray, with silt Clay, brown, with silt T. D.: 200' No. 464. Elevation 191' SW'4, Sec 20, T. 11 S., B. 12 W.	Location: County: C Logged by	T. D.: 200' No. 467. Elevation 301' SE½, Sec. 13, T. 11 S., R. 14 W. alhoun : Dave Lumbert 6/78. Clay, gray, with very fine sand Clay, light gray, with very fine sand Clay, light gray to tan, with	Location: County: C Logged by 0'- 5' 5'- 25'	NW%, Sec. 31, T. 11 S., R. 13 W. alhoun : J. M. Howard 6/78. Sand, mottled, very fine with silt Clay, cream to light gray, with silt Clay, light brown, with silt Clay, greenish-gray, with silt
125'-135' 135'-185' 185'-200' Drill Hole Location: County: C Logged by	Clay, gray, with silt Clay, greenish-gray, with silt Clay, brownish gray, with silt Clay, brown, with silt T. D.: 200' No. 464. Elevation 191' SW'4, Sec 20, T. 11 S., R. 12 W. Calhoun : J. M. Howard 6/78.	Location: County: C Logged by 0'- 10' 10'- 15'	T. D.: 200' No. 467. Elevation 301' SE'A, Sec. 13, T. 11 S., R. 14 W. alhoun: Dave Lumbert 6/78. Clay, gray, with very fine sand Clay, light gray, with very fine sand Clay, light gray to tan, with very fine sand, iron stained	Location: County: C Logged by 0'- 5' 5'- 25' 25'- 40' 40'- 80'	NW%, Sec. 31, T. 11 S., R. 13 W. alhoun J. M. Howard 6/78. Sand, mottled, very fine with silt Clay, cream to light gray, with silt Clay, light brown, with silt Clay, greenish-gray, with silt Clay, greenish-gray, with silt
125'-135' 135'-185' 185'-200' Drill Hole Location: County: C Logged by	Clay, gray, with silt Clay, greenish-gray, with silt Clay, brownish gray, with silt Clay, brown, with silt T. D.: 200' No. 464. Elevation 191' SW¼, Sec 20, T. 11 S., R. 12 W. Calhoun : J. M. Howard 6/78. Sand, tan, medium, with a	Location: County: C Logged by 0'- 10' 10'- 15'	T. D.: 200' No. 467. Elevation 301' SE¼, Sec. 13, T. 11 S., R. 14 W. alhoun : Dave Lumbert 6/78. Clay, gray, with very fine sand Clay, light gray, with very fine sand Clay, light gray to tan, with very fine sand, iron stained Clay, light brown, with very	Location: County: C Logged by 0'- 5' 5'- 25' 25'- 40' 40'- 80'	NW%, Sec. 31, T. 11 S., R. 13 W. alhoun : J. M. Howard 6/78. Sand, mottled, very fine with silt Clay, cream to light gray, with silt Clay, light brown, with silt Clay, greenish-gray, with silt
125'-135' 135'-185' 185'-200' Drill Hole Location: County: C Logged by	Clay, gray, with silt Clay, greenish-gray, with silt Clay, brownish gray, with silt Clay, brown, with silt T. D.: 200' No. 464. Elevation 191' SW4, Sec 20, T. 11 S., R. 12 W. Zalhoun J. M. Howard 6/78. Sand, tan, medium, with a trace of pea gravel	Location: County: C Logged by 0'- 10' 10'- 15' 15'- 20' 20'- 35'	T. D.: 200' No. 467. Elevation 301' SE¼, Sec. 13, T. 11 S., R. 14 W. alhoun : Dave Lumbert 6/78. Clay, gray, with very fine sand Clay, light gray, with very fine sand Clay, light gray to tan, with very fine sand, iron stained Clay, light brown, with very fine sand	Location: County: C Logged by 0'- 5' 5'- 25' 25'- 40' 40'- 80'	NW%, Sec. 31, T. 11 S., R. 13 W. alhoun: J. M. Howard 6/78. Sand, mottled, very fine with silt Clay, cream to light gray, with silt Clay, light brown, with silt Clay, greenish-gray, with silt and interbedded hard, glau-
125'-135' 135'-185' 185'-200' Drill Hole Location: County: C Logged by	Clay, gray, with silt Clay, greenish-gray, with silt Clay, brownish gray, with silt Clay, brown, with silt T. D.: 200' No. 464. Elevation 191' SW'A, Sec 20, T. 11 S., R. 12 W. Calhoun: J. M. Howard 6/78. Sand, tan, medium, with a trace of pea gravel Silt, gray, with very fine sand,	Location: County: C Logged by 0'- 10' 10'- 15'	T. D.: 200' No. 467. Elevation 301' SE½, Sec. 13, T. 11 S., R. 14 W. alhoun : Dave Lumbert 6/78. Clay, gray, with very fine sand Clay, light gray, with very fine sand Clay, light gray to tan, with very fine sand, iron stained Clay, light brown, with very fine sand Clay, chocolate brown, lignitic,	Location: County: Cy 0'- 5' 5'- 25' 25'- 40' 40'- 80' 80'-135'	NW%, Sec. 31, T. 11 S., R. 13 W. alhoun: J. M. Howard 6/78. Sand, mottled, very fine with silt Clay, cream to light gray, with silt Clay, light brown, with silt Clay, greenish-gray, with silt clay, greenish-gray, with silt and interbedded hard, glau- conitic fine sand
125'-135' 135'-185' 185'-200' Drill Hole Location: County: C Logged by 0'- 13' 13'- 30'	Clay, gray, with silt Clay, greenish-gray, with silt Clay, brownish gray, with silt Clay, brown, with silt T. D.: 200' No. 464. Elevation 191' SW'4, Sec 20, T. 11 S., R. 12 W. Calhoun : J. M. Howard 6/78. Sand, tan, medium, with a trace of pea gravel Silt, gray, with very fine sand, micaceous, with clay binder	Location: County: C Logged by 0'- 10' 10'- 15' 15'- 20' 20'- 35' 35'- 40'	T. D.: 200' No. 467. Elevation 301' SE¼, Sec. 13, T. 11 S., R. 14 W. alhoun : Dave Lumbert 6/78. Clay, gray, with very fine sand Clay, light gray, with very fine sand Clay, light gray to tan, with very fine sand, iron stained Clay, light brown, with very fine sand Clay, chocolate brown, lignitic, with very fine sand	Location: County: County: O'- 5' 5'- 25' 25'- 40' 40'- 80' 80'-135'	NW¼, Sec. 31, T. 11 S., R. 13 W. alhoun: J. M. Howard 6/78. Sand, mottled, very fine with silt Clay, cream to light gray, with silt Clay, light brown, with silt Clay, greenish-gray, with silt Clay, greenish-gray, with silt and interbedded hard, glauconitic fine sand Sand, fine, micaceous, glauconitic, with greenish-gray clay binder
125'-135' 135'-185' 185'-200' Drill Hole Location: County: C Logged by	Clay, gray, with silt Clay, greenish-gray, with silt Clay, brownish gray, with silt Clay, brown, with silt T. D.: 200' No. 464. Elevation 191' SW'4, Sec 20, T. 11 S., R. 12 W. Calhoun J. M. Howard 6/78. Sand, tan, medium, with a trace of pea gravel Silt, gray, with very fine sand, micaceous, with clay binder Clay, gray, with very fine sand	Location: County: C Logged by 0'- 10' 10'- 15' 15'- 20' 20'- 35' 35'- 40' 40'- 45'	T. D.: 200' No. 467. Elevation 301' SE½, Sec. 13, T. 11 S., R. 14 W. alhoun Dave Lumbert 6/78. Clay, gray, with very fine sand Clay, light gray, with very fine sand Clay, light gray to tan, with very fine sand, iron stained Clay, light brown, with very fine sand Clay, light brown, with very fine sand Clay, chocolate brown, lignitic, with very fine sand Clay, gray, with very fine sand Clay, gray, with very fine sand	Location: County: Cy 0'- 5' 5'- 25' 25'- 40' 40'- 80' 80'-135'	NW%, Sec. 31, T. 11 S., R. 13 W. alhoun: J. M. Howard 6/78. Sand, mottled, very fine with silt Clay, cream to light gray, with silt Clay, light brown, with silt Clay, greenish-gray, with silt clay, greenish-gray, with silt and interbedded hard, glauconitic fine sand Sand, fine, micaceous, glauconitic, with greenish-gray clay binder Clay, greenish-gray, micaceous,
125'-135' 135'-185' 185'-200' Drill Hole Location: County: C Logged by 0'- 13' 13'- 30'	Clay, gray, with silt Clay, greenish-gray, with silt Clay, brownish gray, with silt Clay, brown, with silt T. D.: 200' No. 464. Elevation 191' SW'A, Sec 20, T. 11 S., R. 12 W. Zalhoun J. M. Howard 6/78. Sand, tan, medium, with a trace of pea gravel Silt, gray, with very fine sand, micaceous, with clay binder Clay, gray, with very fine sand and silt	Location: County: C Logged by 0'- 10' 10'- 15' 15'- 20' 20'- 35' 35'- 40' 40'- 45' 45'- 50'	T. D.: 200' No. 467. Elevation 301' SE½, Sec. 13, T. 11 S., R. 14 W. alhoun : Dave Lumbert 6/78. Clay, gray, with very fine sand Clay, light gray, with very fine sand Clay, light gray to tan, with very fine sand, iron stained Clay, light brown, with very fine sand Clay, light brown, with very fine sand Clay, chocolate brown, lignitic, with very fine sand Clay, gray, with very fine sand Clay, green, with very fine sand Clay, green, with very fine sand	Location: County: C Logged by 0'- 5' 5'- 25' 25'- 40' 40'- 80' 80'-135'	NW%, Sec. 31, T. 11 S., R. 13 W. alhoun: J. M. Howard 6/78. Sand, mottled, very fine with silt Clay, cream to light gray, with silt Clay, greenish-gray, with silt Clay, greenish-gray, with silt and interbedded hard, glauconitic fine sand Sand, fine, micaceous, glauconitic, with greenish-gray clay binder Clay, greenish-gray, micaceous, glauconitic, with fine sand
125'-135' 135'-185' 185'-200' Drill Hole Location: County: County: County: 13' 13'- 30' 30'- 85'	Clay, gray, with silt Clay, greenish-gray, with silt Clay, brownish gray, with silt Clay, brown, with silt T. D.: 200' No. 464. Elevation 191' SW'4, Sec 20, T. 11 S., R. 12 W. Calhoun : J. M. Howard 6/78. Sand, tan, medium, with a trace of pea gravel Silt, gray, with very fine sand, micaceous, with clay binder Clay, gray, with very fine sand and silt Clay, light brown, with silt and	Location: County: C Logged by 0'- 10' 10'- 15' 15'- 20' 20'- 35' 35'- 40' 40'- 45'	T. D.: 200' No. 467. Elevation 301' SE¼, Sec. 13, T. 11 S., R. 14 W. alhoun : Dave Lumbert 6/78. Clay, gray, with very fine sand Clay, light gray, with very fine sand Clay, light gray to tan, with very fine sand, iron stained Clay, light brown, with very fine sand Clay, chocolate brown, lignitic, with very fine sand Clay, gray, with very fine sand Clay, green, with very fine sand Clay, green, with very fine sand Clay, greenish-blue, with very	Location: County: County: O'- 5' 5'- 25' 25'- 40' 40'- 80' 80'-135'	NW¼, Sec. 31, T. 11 S., R. 13 W. alhoun: J. M. Howard 6/78. Sand, mottled, very fine with silt Clay, cream to light gray, with silt Clay, light brown, with silt Clay, greenish-gray, with silt Clay, greenish-gray, with silt and interbedded hard, glau- conitic fine sand Sand, fine, micaceous, glauconitic, with greenish-gray clay binder Clay, greenish-gray, micaceous, glauconitic, with fine sand Clay, brown, with silt
125'-135' 135'-185' 185'-200' Drill Hole Location: County: County: County: 13' 13'- 30' 30'- 85'	Clay, gray, with silt Clay, greenish-gray, with silt Clay, brownish gray, with silt Clay, brown, with silt T. D.: 200' No. 464. Elevation 191' SW'A, Sec 20, T. 11 S., R. 12 W. Zalhoun J. M. Howard 6/78. Sand, tan, medium, with a trace of pea gravel Silt, gray, with very fine sand, micaceous, with clay binder Clay, gray, with very fine sand and silt	Location: County: Cy 0'- 10' 10'- 15' 15'- 20' 20'- 35' 35'- 40' 40'- 45' 45'- 50' 50'- 55'	T. D.: 200' No. 467. Elevation 301' SE½, Sec. 13, T. 11 S., R. 14 W. alhoun : Dave Lumbert 6/78. Clay, gray, with very fine sand Clay, light gray, with very fine sand Clay, light gray to tan, with very fine sand, iron stained Clay, light brown, with very fine sand Clay, light brown, with very fine sand Clay, chocolate brown, lignitic, with very fine sand Clay, green, with very fine sand Clay, greenish-blue, with very fine sand	Location: County: C Logged by 0'- 5' 5'- 25' 25'- 40' 40'- 80' 80'-135'	NW%, Sec. 31, T. 11 S., R. 13 W. alhoun: J. M. Howard 6/78. Sand, mottled, very fine with silt Clay, cream to light gray, with silt Clay, greenish-gray, with silt Clay, greenish-gray, with silt and interbedded hard, glauconitic fine sand Sand, fine, micaceous, glauconitic, with greenish-gray clay binder Clay, greenish-gray, micaceous, glauconitic, with fine sand
125'-135' 135'-185' 185'-200' Drill Hole Location: County: County: County: 13' 13'- 30' 30'- 85'	Clay, gray, with silt Clay, greenish-gray, with silt Clay, brownish gray, with silt Clay, brown, with silt T. D.: 200' No. 464. Elevation 191' SW4, Sec 20, T. 11 S., R. 12 W. Calhoun J. M. Howard 6/78. Sand, tan, medium, with a trace of pea gravel Silt, gray, with very fine sand, micaceous, with clay binder Clay, gray, with very fine sand and silt Clay, light brown, with silt and a trace of dark brown clay inter- beds	Location: County: C Logged by 0'- 10' 10'- 15' 15'- 20' 20'- 35' 35'- 40' 40'- 45' 45'- 50'	T. D.: 200' No. 467. Elevation 301' SE¼, Sec. 13, T. 11 S., R. 14 W. alhoun : Dave Lumbert 6/78. Clay, gray, with very fine sand Clay, light gray, with very fine sand Clay, light gray to tan, with very fine sand, iron stained Clay, light brown, with very fine sand Clay, light brown, with very fine sand Clay, chocolate brown, lignitic, with very fine sand Clay, gray, with very fine sand Clay, green, with very fine sand Clay, greenish-blue, with very fine sand Clay, green, with interbedded	Location: County: C Logged by 0'- 5' 5'- 25' 25'- 40' 40'- 80' 80'-135'	NW¼, Sec. 31, T. 11 S., R. 13 W. alhoun: J. M. Howard 6/78. Sand, mottled, very fine with silt Clay, cream to light gray, with silt Clay, light brown, with silt Clay, greenish-gray, with silt Clay, greenish-gray, with silt and interbedded hard, glau- conitic fine sand Sand, fine, micaceous, glauconitic, with greenish-gray clay binder Clay, greenish-gray, micaceous, glauconitic, with fine sand Clay, brown, with silt
Drill Hole Location: County: C	Clay, gray, with silt Clay, greenish-gray, with silt Clay, brownish gray, with silt Clay, brown, with silt T. D.: 200' No. 464. Elevation 191' SW¼, Sec 20, T. 11 S., R. 12 W. Calhoun : J. M. Howard 6/78. Sand, tan, medium, with a trace of pea gravel Silt, gray, with very fine sand, micaceous, with clay binder Clay, gray, with very fine sand and silt Clay, light brown, with silt and a trace of dark brown clay inter-	Location: County: C Logged by 0'- 10' 10'- 15' 15'- 20' 20'- 35' 35'- 40' 40'- 45' 45'- 50' 50'- 55'	T. D.: 200' No. 467. Elevation 301' SE¼, Sec. 13, T. 11 S., R. 14 W. alhoun: Dave Lumbert 6/78. Clay, gray, with very fine sand Clay, light gray, with very fine sand Clay, light gray to tan, with very fine sand, iron stained Clay, light brown, with very fine sand Clay, chocolate brown, lightic, with very fine sand Clay, gray, with very fine sand Clay, green, with very fine sand Clay, green, with very fine sand Clay, green, with interbedded gray clay and very fine sand	Location: County: C Logged by 0'- 5' 5'- 25' 25'- 40' 40'- 80' 80'-135' 135'-180' 180'-188' 188'-200'	NW%, Sec. 31, T. 11 S., R. 13 W. alhoun: J. M. Howard 6/78. Sand, mottled, very fine with silt Clay, cream to light gray, with silt Clay, light brown, with silt Clay, greenish-gray, with silt clay, greenish-gray, with silt and interbedded hard, glau- conitic fine sand Sand, fine, micaceous, glauconitic, with greenish-gray clay binder Clay, greenish-gray, micaceous, glauconitic, with fine sand Clay, brown, with silt T. D.: 200'
Drill Hole Location: County: C	Clay, gray, with silt Clay, greenish-gray, with silt Clay, brownish gray, with silt Clay, brown, with silt T. D.: 200' No. 464. Elevation 191' SW'4, Sec 20, T. 11 S., R. 12 W. Calhoun : J. M. Howard 6/78. Sand, tan, medium, with a trace of pea gravel Silt, gray, with very fine sand, micaceous, with clay binder Clay, gray, with very fine sand and silt Clay, light brown, with silt and a trace of dark brown clay interbeds Clay, brownish to greenish gray,	Location: County: Cy 0'- 10' 10'- 15' 15'- 20' 20'- 35' 35'- 40' 40'- 45' 45'- 50' 50'- 55'	T. D.: 200' No. 467. Elevation 301' SE¼, Sec. 13, T. 11 S., R. 14 W. alhoun : Dave Lumbert 6/78. Clay, gray, with very fine sand Clay, light gray, with very fine sand clay, light gray to tan, with very fine sand, iron stained Clay, light brown, with very fine sand Clay, chocolate brown, lignitic, with very fine sand Clay, gray, with very fine sand Clay, greenish-blue, with very fine sand Clay, green, with interbedded gray clay and very fine sand Clay, dark gray, with very fine sand Clay, dark gray, with very fine	Location: County: C Logged by 0'- 5' 5'- 25' 25'- 40' 40'- 80' 80'-135' 135'-180' 180'-188' 188'-200' Drill Hole I	NW¼, Sec. 31, T. 11 S., R. 13 W. alhoun: J. M. Howard 6/78. Sand, mottled, very fine with silt Clay, cream to light gray, with silt Clay, light brown, with silt Clay, greenish-gray, with silt clay, greenish-gray, with silt and interbedded hard, glauconitic fine sand Sand, fine, micaceous, glauconitic, with greenish-gray clay binder Clay, greenish-gray, micaceous, glauconitic, with fine sand Clay, brown, with silt T. D.: 200'
Drill Hole Location: County: C	Clay, gray, with silt Clay, greenish-gray, with silt Clay, brownish gray, with silt Clay, brown, with silt T. D.: 200' No. 464. Elevation 191' SW¼, Sec 20, T. 11 S., R. 12 W. Calhoun : J. M. Howard 6/78. Sand, tan, medium, with a trace of pea gravel Silt, gray, with very fine sand, micaceous, with clay binder Clay, gray, with very fine sand and silt Clay, light brown, with silt and a trace of dark brown clay interbeds Clay, brownish to greenish gray, silty, micaceous	Location: County: C Logged by 0'- 10' 10'- 15' 15'- 20' 20'- 35' 35'- 40' 40'- 45' 45'- 50' 50'- 55'	T. D.: 200' No. 467. Elevation 301' SE½, Sec. 13, T. 11 S., R. 14 W. alhoun : Dave Lumbert 6/78. Clay, gray, with very fine sand Clay, light gray, with very fine sand Clay, light gray to tan, with very fine sand, iron stained Clay, light brown, with very fine sand Clay, light brown, lignitic, with very fine sand Clay, gray, with very fine sand Clay, green, with very fine sand Clay, green, with very fine sand Clay, green, with interbedded gray clay and very fine sand Clay, dark gray, with very fine sand Clay, dark gray, with very fine sand Clay, dark gray, with very fine sand	Location: County: C Logged by 0'- 5' 5'- 25' 25'- 40' 40'- 80' 80'-135' 135'-180' 180'-188' 188'-200' Drill Hole I Location:	NW%, Sec. 31, T. 11 S., R. 13 W. alhoun: J. M. Howard 6/78. Sand, mottled, very fine with silt Clay, cream to light gray, with silt Clay, greenish-gray, with silt Clay, greenish-gray, with silt and interbedded hard, glauconitic fine sand Sand, fine, micaceous, glauconitic, with greenish-gray clay binder Clay, greenish-gray, micaceous, glauconitic, with fine sand Clay, brown, with silt T. D.: 200' No. 470. Elevation 257' NE%, Sec. 6, T. 12 S., R. 13 W.
125'-135' 135'-185' 135'-200' Drill Hole Location: County: CLogged by 0'- 13' 13'- 30' 30'- 85' 85'-114'	Clay, gray, with silt Clay, greenish-gray, with silt Clay, brownish gray, with silt Clay, brown, with silt T. D.: 200' No. 464. Elevation 191' SW¼, Sec 20, T. 11 S., R. 12 W. Calhoun : J. M. Howard 6/78. Sand, tan, medium, with a trace of pea gravel Silt, gray, with very fine sand, micaceous, with clay binder Clay, gray, with very fine sand and silt Clay, light brown, with silt and a trace of dark brown clay interbeds Clay, brownish to greenish gray, silty, micaceous T. D.: 200'	Location: County: C Logged by 0'- 10' 10'- 15' 15'- 20' 20'- 35' 35'- 40' 40'- 45' 45'- 50' 50'- 55' 55'- 60'	T. D.: 200' No. 467. Elevation 301' SE¼, Sec. 13, T. 11 S., R. 14 W. alhoun: Dave Lumbert 6/78. Clay, gray, with very fine sand Clay, light gray, with very fine sand Clay, light gray to tan, with very fine sand, iron stained Clay, light brown, with very fine sand Clay, chocolate brown, lignitic, with very fine sand Clay, grey, with very fine sand Clay, green, with very fine sand Clay, green, with very fine sand Clay, green, with interbedded gray clay and very fine sand Clay, dark gray, with very fine sand Clay, dark gray, with very fine sand Clay, light gray, with interbedded gray clay and very fine sand Clay, light gray, with interbed-	Location: County: C Logged by 0'- 5' 5'- 25' 25'- 40' 40'- 80' 80'-135' 135'-180' 180'-188' 188'-200' Drill Hole I Location: County: C	NW¼, Sec. 31, T. 11 S., R. 13 W. alhoun I J. M. Howard Sand, mottled, very fine with silt Clay, cream to light gray, with silt Clay, light brown, with silt Clay, greenish-gray, with silt Clay, greenish-gray, with silt and interbedded hard, glau- conitic fine sand Sand, fine, micaceous, glauconitic, with greenish-gray clay binder Clay, greenish-gray, micaceous, glauconitic, with fine sand Clay, brown, with silt T. D.: 200' No. 470. Elevation 257' NE¼, Sec. 6, T. 12 S., R. 13 W. alhoun
125'-135' 135'-185' 185'-200' Drill Hole Location: County: CLogged by 0'- 13' 13'- 30' 30'- 85' 85'-114' 114'-200' Drill Hole I	Clay, gray, with silt Clay, greenish-gray, with silt Clay, brownish gray, with silt Clay, brown, with silt T. D.: 200' No. 464. Elevation 191' SW¼, Sec 20, T. 11 S., R. 12 W. Calhoun : J. M. Howard 6/78. Sand, tan, medium, with a trace of pea gravel Silt, gray, with very fine sand, micaceous, with clay binder Clay, gray, with very fine sand and silt Clay, light brown, with silt and a trace of dark brown clay interbeds Clay, brownish to greenish gray, silty, micaceous T. D.: 200' No. 465. Elevation 318'	Location: County: Cy 0'- 10' 10'- 15' 15'- 20' 20'- 35' 35'- 40' 40'- 45' 45'- 50' 50'- 55' 55'- 60' 60'- 65'	T. D.: 200' No. 467. Elevation 301' SE½, Sec. 13, T. 11 S., R. 14 W. alhoun : Dave Lumbert 6/78. Clay, gray, with very fine sand Clay, light gray, with very fine sand Clay, light gray to tan, with very fine sand, iron stained Clay, light brown, with very fine sand Clay, light brown, lignitic, with very fine sand Clay, gray, with very fine sand Clay, green, with very fine sand Clay, green, with very fine sand Clay, green, with interbedded gray clay and very fine sand Clay, dark gray, with very fine sand Clay, dark gray, with very fine sand Clay, dark gray, with very fine sand	Location: County: C Logged by 0'- 5' 5'- 25' 25'- 40' 40'- 80' 80'-135' 135'-180' 180'-188' 188'-200' Drill Hole I Location: County: C	NW%, Sec. 31, T. 11 S., R. 13 W. alhoun: J. M. Howard 6/78. Sand, mottled, very fine with silt Clay, cream to light gray, with silt Clay, greenish-gray, with silt Clay, greenish-gray, with silt and interbedded hard, glauconitic fine sand Sand, fine, micaceous, glauconitic, with greenish-gray clay binder Clay, greenish-gray, micaceous, glauconitic, with fine sand Clay, brown, with silt T. D.: 200' No. 470. Elevation 257' NE%, Sec. 6, T. 12 S., R. 13 W.
125'-135' 135'-185' 135'-185' 185'-200' Drill Hole Location: County:	Clay, gray, with silt Clay, greenish-gray, with silt Clay, brownish gray, with silt Clay, brown, with silt T. D.: 200' No. 464. Elevation 191' SW'4, Sec 20, T. 11 S., R. 12 W. Calhoun : J. M. Howard 6/78. Sand, tan, medium, with a trace of pea gravel Silt, gray, with very fine sand, micaceous, with clay binder Clay, gray, with very fine sand and silt Clay, light brown, with silt and a trace of dark brown clay interbeds Clay, brownish to greenish gray, silty, micaceous T. D.: 200' No. 465. Elevation 318' NW'4, Sec. 5, T. 11 S., R. 13 W.	Location: County: C Logged by 0'- 10' 10'- 15' 15'- 20' 20'- 35' 35'- 40' 40'- 45' 45'- 50' 50'- 55' 55'- 60'	T. D.: 200' No. 467. Elevation 301' SE½, Sec. 13, T. 11 S., R. 14 W. alhoun : Dave Lumbert 6/78. Clay, gray, with very fine sand Clay, light gray, with very fine sand Clay, light gray to tan, with very fine sand, iron stained Clay, light brown, with very fine sand Clay, chocolate brown, lignitic, with very fine sand Clay, green, with interbedded gray clay and very fine sand Clay, dark gray, with very fine sand Clay, light gray, with interbedded light brown clay and very fine sand	Location: County: C Logged by 0'- 5' 5'- 25' 25'- 40' 40'- 80' 80'-135' 135'-180' Drill Hole I Location: County: C Logged by:	NW¼, Sec. 31, T. 11 S., R. 13 W. alhoun: J. M. Howard 6/78. Sand, mottled, very fine with silt Clay, cream to light gray, with silt Clay, greenish-gray, with silt Clay, greenish-gray, with silt Clay, greenish-gray, with silt and interbedded hard, glauconitic fine sand Sand, fine, micaceous, glauconitic, with greenish-gray clay binder Clay, greenish-gray, micaceous, glauconitic, with fine sand Clay, brown, with silt T. D.: 200' No. 470. Elevation 257' NE¼, Sec. 6, T. 12 S., R. 13 W. alhoun Dave Lumbert 6/78.
125'-135' 135'-185' 185'-200' Drill Hole Location: County: Co	Clay, gray, with silt Clay, greenish-gray, with silt Clay, brownish gray, with silt Clay, brown, with silt T. D.: 200' No. 464. Elevation 191' SW'4, Sec 20, T. 11 S., R. 12 W. Calhoun : J. M. Howard 6/78. Sand, tan, medium, with a trace of pea gravel Silt, gray, with very fine sand, micaceous, with clay binder Clay, gray, with very fine sand and silt Clay, light brown, with silt and a trace of dark brown clay interbeds Clay, brownish to greenish gray, silty, micaceous T. D.: 200' No. 465. Elevation 318' NW'4, Sec. 5, T. 11 S., R. 13 W. alhoun	Location: County: C Logged by 0'- 10' 10'- 15' 15'- 20' 20'- 35' 35'- 40' 40'- 45' 45'- 50' 50'- 55' 65'- 70' 70'- 80'	T. D.: 200' No. 467. Elevation 301' SE¼, Sec. 13, T. 11 S., R. 14 W. alhoun: Dave Lumbert 6/78. Clay, gray, with very fine sand Clay, light gray, with very fine sand clay, light gray to tan, with very fine sand, iron stained Clay, light brown, with very fine sand Clay, chocolate brown, lignitic, with very fine sand Clay, gray, with very fine sand Clay, green, with very fine sand Clay, green, with very fine sand Clay, green, with interbedded gray clay and very fine sand Clay, dark gray, with interbedded gray clay and very fine sand Clay, light gray, with interbedded light brown clay and very	Location: County: C Logged by 0'- 5' 5'- 25' 25'- 40' 40'- 80' 80'-135' 135'-180' 180'-188' 188'-200' Drill Hole I Location: County: C	NW¼, Sec. 31, T. 11 S., R. 13 W. alhoun Sand, mottled, very fine with silt Clay, cream to light gray, with silt Clay, light brown, with silt Clay, greenish-gray, with silt Clay, greenish-gray, with silt and interbedded hard, glau- conitic fine sand Sand, fine, micaceous, glauconitic, with greenish-gray clay binder Clay, greenish-gray, micaceous, glauconitic, with fine sand Clay, greenish-gray, micaceous, glauconitic, with fine sand Clay, brown, with silt T. D.: 200' No. 470. Elevation 257' No. 470. Elev
125'-135' 135'-185' 185'-200' Drill Hole Location: County: Co	Clay, gray, with silt Clay, greenish-gray, with silt Clay, brownish gray, with silt Clay, brown, with silt T. D.: 200' No. 464. Elevation 191' SW'4, Sec 20, T. 11 S., R. 12 W. Calhoun : J. M. Howard 6/78. Sand, tan, medium, with a trace of pea gravel Silt, gray, with very fine sand, micaceous, with clay binder Clay, gray, with very fine sand and silt Clay, light brown, with silt and a trace of dark brown clay interbeds Clay, brownish to greenish gray, silty, micaceous T. D.: 200' No. 465. Elevation 318' NW'4, Sec. 5, T. 11 S., R. 13 W.	Location: County: Cy 0'- 10' 10'- 15' 15'- 20' 20'- 35' 35'- 40' 40'- 45' 45'- 50' 50'- 55' 55'- 60' 60'- 65'	No. 467. Elevation 301' SE¼, Sec. 13, T. 11 S., R. 14 W. alhoun: Dave Lumbert 6/78. Clay, gray, with very fine sand Clay, light gray, with very fine sand Clay, light gray to tan, with very fine sand, iron stained Clay, light brown, with very fine sand Clay, chocolate brown, lignitic, with very fine sand Clay, green, with interbedded gray clay and very fine sand Clay, light gray, with interbedded gray clay and very fine sand Clay, light gray, with interbedded light brown clay and very fine sand Clay, gray-brown, with very fine sand Clay, gray-brown, with very fine sand	Location: County: C Logged by: 0'- 5' 25'- 40' 40'- 80' 80'-135' 135'-180' Drill Hole I Location: County: C Logged by: 0'- 20'	NW', Sec. 31, T. 11 S., R. 13 W. alhoun J. M. Howard 6/78. Sand, mottled, very fine with silt Clay, cream to light gray, with silt Clay, light brown, with silt Clay, greenish-gray, with silt clay, greenish-gray, with silt and interbedded hard, glau- conitic fine sand Sand, fine, micaceous, glauconitic, with greenish-gray clay binder Clay, greenish-gray, micaceous, glauconitic, with fine sand Clay, brown, with silt T. D.: 200' No. 470. Elevation 257' NE'&, Sec. 6, T. 12 S., R. 13 W. alhoun Dave Lumbert 6/78. Clay, light gray, with fine to very fine sand, iron stained
125'-135' 135'-185' 135'-185' 185'-200' Drill Hole Location: County:	Clay, gray, with silt Clay, greenish-gray, with silt Clay, brownish gray, with silt Clay, brown, with silt T. D.: 200' No. 464. Elevation 191' SW¼, Sec 20, T. 11 S., R. 12 W. Calhoun : J. M. Howard 6/78. Sand, tan, medium, with a trace of pea gravel Silt, gray, with very fine sand, micaceous, with clay binder Clay, gray, with very fine sand and silt Clay, light brown, with silt and a trace of dark brown clay interbeds Clay, brownish to greenish gray, silty, micaceous T. D.: 200' No. 465. Elevation 318' NW¼, Sec. 5, T. 11 S., R. 13 W. alhoun J. M. Howard 6/78.	Location: County: C Logged by 0'- 10' 10'- 15' 15'- 20' 20'- 35' 35'- 40' 40'- 45' 45'- 50' 50'- 55' 55'- 60' 60'- 65' 70'- 80' 80'- 90'	T. D.: 200' No. 467. Elevation 301' SE¼, Sec. 13, T. 11 S., R. 14 W. alhoun: Dave Lumbert 6/78. Clay, gray, with very fine sand Clay, light gray, with very fine sand Clay, light gray to tan, with very fine sand, iron stained Clay, light brown, with very fine sand Clay, chocolate brown, lignitic, with very fine sand Clay, grey, with very fine sand Clay, green, with interbedded gray clay and very fine sand Clay, light gray, with interbedded light brown clay and very fine sand Clay, gray-brown, with very fine sand Clay, gray-brown, with very fine sand Clay, light brown to brown, with very fine sand	Location: County: C Logged by 0'- 5' 5'- 25' 25'- 40' 40'- 80' 80'-135' 135'-180' Drill Hole I Location: County: C Logged by:	NW¼, Sec. 31, T. 11 S., R. 13 W. alhoun: J. M. Howard 6/78. Sand, mottled, very fine with silt Clay, cream to light gray, with silt Clay, greenish-gray, with silt Clay, greenish-gray, with silt clay, greenish-gray, with silt and interbedded hard, glauconitic fine sand Sand, fine, micaceous, glauconitic, with greenish-gray clay binder Clay, greenish-gray, micaceous, glauconitic, with greenish-gray clay binder Clay, greenish-gray, micaceous, glauconitic, with fine sand Clay, brown, with fine sand Clay, brown, with silt T. D.: 200' No. 470. Elevation 257' NE¼, Sec. 6, T. 12 S., R. 13 W. alhoun Dave Lumbert 6/78. Clay, light gray, with fine to very fine sand, iron stained Clay, light gray to light brown,
125'-135' 135'-185' 185'-200' Drill Hole Location: County: Co	Clay, gray, with silt Clay, greenish-gray, with silt Clay, brownish gray, with silt Clay, brown, with silt T. D.: 200' No. 464. Elevation 191' SW'4, Sec 20, T. 11 S., R. 12 W. Calhoun : J. M. Howard 6/78. Sand, tan, medium, with a trace of pea gravel Silt, gray, with very fine sand, micaceous, with clay binder Clay, gray, with very fine sand and silt Clay, light brown, with silt and a trace of dark brown clay interbeds Clay, brownish to greenish gray, silty, micaceous T. D.: 200' No. 465. Elevation 318' NW'4, Sec. 5, T. 11 S., R. 13 W. alhoun : J. M. Howard 6/78. Clay, mottled, with silt	Location: County: C Logged by 0'- 10' 10'- 15' 15'- 20' 20'- 35' 35'- 40' 40'- 45' 45'- 50' 50'- 55' 65'- 70' 70'- 80'	T. D.: 200' No. 467. Elevation 301' SE¼, Sec. 13, T. 11 S., R. 14 W. alhoun: Dave Lumbert 6/78. Clay, gray, with very fine sand Clay, light gray, with very fine sand Clay, light gray to tan, with very fine sand, iron stained Clay, light brown, with very fine sand Clay, chocolate brown, lignitic, with very fine sand Clay, gray, with very fine sand Clay, green, with very fine sand Clay, green, with very fine sand Clay, green, with interbedded gray clay and very fine sand Clay, light gray, with interbedded gray clay and very fine sand Clay, light gray, with interbedded light brown clay and very fine sand Clay, gray-brown, with very fine sand Clay, light brown to brown, with very fine sand Clay, light brown to brown, with very fine sand Clay, light brown to brown, with very fine sand Clay, gray, slightly glauconitic.	Location: County: C Logged by: 0'- 5' 25'- 40' 40'- 80' 80'-135' 135'-180' Drill Hole I Location: County: C Logged by: 0'- 20'	NW', Sec. 31, T. 11 S., R. 13 W. alhoun J. M. Howard Sand, mottled, very fine with silt Clay, cream to light gray, with silt Clay, light brown, with silt Clay, greenish-gray, with silt clay, greenish-gray, with silt and interbedded hard, glau- conitic fine sand Sand, fine, micaceous, glauconitic, with greenish-gray clay binder Clay, greenish-gray, micaceous, glauconitic, with fine sand Clay, greenish-gray, micaceous, glauconitic, with fine sand Clay, brown, with silt T. D.: 200' No. 470. Elevation 257' No. 470. Elevation 257' No. 470. Elevation 257' Clay, light gray, with fine to very fine sand, iron stained Clay, light gray to light brown, with very fine sand
125'-135' 135'-185' 135'-185' 185'-200' Drill Hole Location: County:	Clay, gray, with silt Clay, greenish-gray, with silt Clay, brownish gray, with silt Clay, brown, with silt T. D.: 200' No. 464. Elevation 191' SW¼, Sec 20, T. 11 S., R. 12 W. Calhoun : J. M. Howard 6/78. Sand, tan, medium, with a trace of pea gravel Silt, gray, with very fine sand, micaceous, with clay binder Clay, gray, with very fine sand and silt Clay, light brown, with silt and a trace of dark brown clay interbeds Clay, brownish to greenish gray, silty, micaceous T. D.: 200' No. 465. Elevation 318' NW¼, Sec. 5, T. 11 S., R. 13 W. alhoun J. M. Howard 6/78.	Location: County: C Logged by 0'- 10' 10'- 15' 15'- 20' 20'- 35' 35'- 40' 40'- 45' 45'- 50' 50'- 55' 55'- 60' 60'- 65' 70'- 80' 80'- 90'	T. D.: 200' No. 467. Elevation 301' SE¼, Sec. 13, T. 11 S., R. 14 W. alhoun: Dave Lumbert 6/78. Clay, gray, with very fine sand Clay, light gray, with very fine sand Clay, light gray to tan, with very fine sand, iron stained Clay, light brown, with very fine sand Clay, chocolate brown, lignitic, with very fine sand Clay, grey, with very fine sand Clay, green, with interbedded gray clay and very fine sand Clay, light gray, with interbedded light brown clay and very fine sand Clay, gray-brown, with very fine sand Clay, gray-brown, with very fine sand Clay, light brown to brown, with very fine sand	Location: County: C Logged by 0'- 5' 25'- 40' 40'- 80' 80'-135' 135'-180' 180'-188' 188'-200' Drill Hole I Location: County: C Logged by: 0'- 20' 20'- 30'	NW¼, Sec. 31, T. 11 S., R. 13 W. alhoun: J. M. Howard 6/78. Sand, mottled, very fine with silt Clay, cream to light gray, with silt Clay, greenish-gray, with silt Clay, greenish-gray, with silt clay, greenish-gray, with silt and interbedded hard, glauconitic fine sand Sand, fine, micaceous, glauconitic, with greenish-gray clay binder Clay, greenish-gray, micaceous, glauconitic, with greenish-gray clay binder Clay, greenish-gray, micaceous, glauconitic, with fine sand Clay, brown, with fine sand Clay, brown, with silt T. D.: 200' No. 470. Elevation 257' NE¼, Sec. 6, T. 12 S., R. 13 W. alhoun Dave Lumbert 6/78. Clay, light gray, with fine to very fine sand, iron stained Clay, light gray to light brown,

		ARKANSAS LIGNITE INVESTIGATIONS	
40'- 5 0 '	Clay, light gray, with inter-	Drill Hole No. 473. Elevation 262'	125'-135' Clay, gray to brown, with very
50'- 55'	bedded very fine sand Clay, light gray, with very fine	Location: SW¼, Sec. 20, T. 12 S., R. 13 W. County: Calhoun	fine sand and a trace of lignite 135'-150' Clay, gray to brown, slightly
55'- 6 5 '	sand Clay, light gray, with inter-	Logged by: Dave Lumbert 6/78.	glauconitic, with very fine sand 150'-170' Sand, fine, with gray clay,
	bedded orange clay and very fine sand	0'- 5' Clay, light gray, with very fine sand, iron stained	slightly glauconitic 170'-175' Clay, gray, with very fine sand
65'- 90' 90'-1 00 '	Clay, gray, with very fine sand Clay, gray, slightly glauconitic	5'- 10' Sand, fine, with gray clay 10'- 20' Clay, gray, with chocolate	175'-200' Clay, gray to brown, inter- bedded, with very fine sand
100'-140'	with interbedded, very fine sand Clay, gray, glauconitic, mica-	brown clay interbedded, and very fine sand	Core Interval 23' - 29'6"
	ceous, with fine to very fine sand	20'- 25' Lignite and chocolate brown clay, with fine sand	Recovered: Lost:
140'-145'	Clay, gray, glauconitic, with interbedded very fine sand	25'- 30' Clay, gray, with very fine sand 30'- 35' Clay, gray to chocolate brown,	78" 0"
145'-150'	Sand, very fine to fine, with gray clay, slightly glauconitic	with a trace of lignite 35'- 40' Clay, gray to brown, with	23,'0'' - 24' clay, gray-brown,
150'-200'	Clay, gray, slightly glauconitic	very fine sand	with very fine sand and silt,
	with very fine sand and a trace of siderite	80'- 90' Clay, gray, slightly glauconitic,	slightly carbonaceous 24' - 24'2' lignite, black, hard
	T. D.: 200'	with very fine sand 90'-100' Clay, gray, slightly glauconitic	24'2" - 24'9" clay, brown to dark brown, with very fine sand
D.::!! !	NI- 474 E 0404	with interbedded fine to very fine sand	24'9'' - 25'8'' lignite, black, firm 25'8'' - 26'4'' clay, dark brown,
Location:	No. 471. Elevation 240' NE%, Sec. 7, T. 12 S., R. 13 W.	100'-105' Lignite and chocolate brown clay, with very fine sand	lignitic, with a trace of lignit e 26'4'' - 26'8'' clay, lignitic
County: C Logged by	: Dave Lumbert 6/78.	105'-110' Clay, gray, glauconitic, with very fine sand	26'8'' - 29'6'' clay, gray-brown, with very fine sand and silt,
		110'-125' Clay, gray-brown, slightly glau- conitic, with very fine sand	slightly micaceous T. D.: 200'
0'- 5' 5'- 10 '	Sand, fine, with light tan clay Clay, tan to gray, with very	125'-130' Clay, gray to brown, with very fine sand and a trace of lignite	
10'- 15'	fine sand Pea gravel	130'-135' Clay, gray, with very fine sand 135'-145' Sand, fine, with gray clay	Drill Hole No. 475. Elevation 250' Location: SW4, Sec. 32, T. 12 S., R. 13 W.
15'- 20'	Clay, light brown, with very fine sand	145'-150' Clay, gray to brown, with very fine sand	County: Calhoun Logged by: J. M. Howard 6/78.
20'- 25'	Clay, light brown, with inter- bedded gray clay and very fine	150'-160' Clay, brown, with fine sand 160'-170' Clay, gray to brown, with very	0'- 15' Clay, tan, with silt and very
25'- 30' 30'- 50'	Clay, green, with very fine sand	fine sand 170'-180' Clay, gray, with very fine sand	fine sand 15'- 25' Clay, cream to tan, with silt
50'- 55'	Clay, gray-green, with very fine sand and silt	180'-190' Sand, fine, with gray clay 190'-200' Clay, gray to brown, with fine	25'- 30' Clay, light brown 30'- 35' Clay, dark brown, with approxi-
55′-100′	Sand, fine, with gray clay Clay, gray, with very fine sand and silt	to very fine sand	mately 1' - 2' of lignite 35'- 40' Clay, brownish gray, with silt
100'-110'	Clay, gray, with interbedded fine to very fine sand	Core Interval 24' - 30' Recovered: Lost:	40'- 50' Clay, greenish-gray, glauconitic 50'- 60' Clay, brownish gray
110'-120' 120'-180'	Clay, gray, slightly micaceous Sand, fine	50" 22" 24' - 28'2" lignite, black, firm	60'- 70' Clay, brown and gray inter- bedded, with approximately
180'-200'	Clay, gray, slightly glauconitic,	to hard 28'2'' - 30' not recovered	1' - 1'6'' of lignite 70'- 75' Clay, greenish-brown
	slightly micaceous with a trace of siderite and very fine sand T. D.: 200'	T. D.: 200'	75'- 80' Silt, with greenish-brown clay binder
	7. 5 200		80'- 90' Clay, gray, with silt and a trace of siderite
Drill Hole	No. 472 Fig. 1000	5	90'-145' Clay, light brown, with a trace of lignite
Location:	No. 472. Elevation 230' NE¼, Sec. 18, T. 12 S., R. 13 W.	Drill Hole No. 474. Elevation 248' Location: SE¼, Sec. 30, T. 12S. R. 13 W.	145'-155' Clay, brown, with approximate- ly 3' - 4' of lignite
County: C Logged by	: J. M. Howard 6/78.	County: Calhoun Logged by: Dave Lumbert 6/78.	155'-175' Clay, light brown 175'-200' Clay, light brown to gray
0'- 20'	Clay, gray to tan, with silt	0'- 5' Clay, gray to tan, very fine sand	Core Interval 143' - 150'
20'- 45' 45'- 50'	and very fine sand Clay, gray, with silt Clay, dark brown, with approxi-	5'- 10' Clay, tan to white, with very fine sand 10'- 20' Clay, white to light tan with	Recovered: Lost:
50'- 60'	ately 1' to 2' of lignite Clay, gray, with silt	very fine sand	45" 39"
60'-102'	Clay, gray and brown, inter- bedded, silty	white clay and fine sand	143' - 144' clay, gray-brown
102'-110'	Clay, brown, with approximate- ly 3' of lignite	30'- 45' Clay, gray, with very fine sand 45'- 50' Clay, gray, with very fine sand and a trace of lignite	144'- 146' lignite, black, hard 146' - 146'9'' clay, brown to
110'-115' 115'-125'	Clay, brown Clay, gray, with silt	50'- 70' Clay, gray, glauconitic, with	dark brown, with thin lignite stringers
125′-130′	Clay, dark brown, with approximately 1' to 2' of lignite	very fine sand and a trace of lignite 70'- 95' Clay, gray, slightly glauconitic.	146'9" - 150' sand (not recovered)
130′-140′ 140′-145′	Clay, gray, with silt Silt, gray, with very fine sand	with very fine sand	T. D.: 200′
145′-155′	Clay, brown, with lignite (possibly caved from above	and a trace of lignite	Drill Hole No. 476. Elevation 142'
155′-18 0′	lignite zone) Clay, gray	110'-115' Clay, gray, with very fine sand	Location: SE¼, Sec. 33, T. 14 S., R. 13 W. County: Calhoun
180′-200′	Clay, gray Clay, brown T. D.: 200'	and a trace of lignite 115'-125' Clay, gray, slightly glauconitic,	Logged by: Dave Lumbert 6/78.
		with very fine sand	0'- 10' Clay, tan, with fine sand

		ARKAN	SAS LIGNITE INVESTIGATIONS		
10'- 15' 15'- 45' 45'- 62'	Clay, tan, with fine sand and pea gravel Gravel and fine sand Clay, gray, with fine sand	Location: County:	No. 479. Elevation 150' NW¼, Sec. 1, T. 15 S., R. 13 W. Calhoun ∴ Dave Lumbert 6/78.	Location: County: C	No. 482. Elevation 120' NW¼, Sec. 4, T. 15 S., R. 12 W. Calhoun : Dave Lumbert 6/78.
62'- 65' 65'- 75'	Lignite and brown lignitic clay with fine sand Clay, brown, with very fine sand	0'- 5' 5'- 10'	Sand, fine, with tan clay	0'- 5'	Clay, red, with fine sand
75′- 80′	and a trace of lignite Clay, chocolate brown, with fine sand	10'- 25'	Clay, tan, with fine sand Clay, light gray, with very fine sand, iron stained	5'- 15' 15'- 20' 20'- 25'	Clay, tan, with very fine sand Sand, fine, with tan clay Clay, tan, with very fine sand
80′- 85′ 85′- 9 0′	Pea gravel, with fine sand Clay, gray-brown, with very fine	25'- 30' 30'- 40'	fine sand and a trace of lignite	25'- 35' 35'- 40 '	Gravel Clay, gray to brown, with very fine sand and a trace of lignite
90'- 95'	to fine sand Sand, fine, with gray-brown clay and a trace of lignite	40'- 50' 50'- 90'	Clay, gray, with very fine sand, slightly glauconitic Clay, gray to blue-green, with	40'- 60' 60'- 65'	Clay, gray, slightly glauconitic, with very fine sand Sand, fine, with gray clay
95′-100′ 100′-110′ 110′-130′	Clay, brown, with very fine sand Sand, fine, with brown clay Gravel and coarse sand	90′-100′	very fine sand Clay, gray to light gray, with very fine sand	65'- 80' 80'- 85'	Clay, gray, slightly glauconitic, with very fine sand Clay, gray to brown, with very
130′-140′ 140′-150′	Clay, gray-brown, with fine sand Sand, fine, with a trace of brown clay	100′-105′ 105′-110′	Clay, gray, with very fine sand Clay, blue-green, with very fine sand	85′-100′ 100′-110′	fine sand, slightly glauconitic Clay, gray, with very fine sand Clay, gray, with interbedded
150′-170′ 170′-200′	Clay, brown, with interbedded very fine sand Sand, very fine, with brown to	110′-120′ 120′-150′		110′-120′	brown clay and very fine sand Clay, gray, with fine to very fine sand
	gray clay T. D.: 200'	150′-165′ 165′-180′	Clay, brown, with very fine sand Clay, brown, with interbedded, fine to very fine sand	120′-130′ 130′-140′	Clay, gray to brown, with fine sand
Drill Hole	No. 477. Elevation 135' SW¼, Sec. 34, T. 14 S., R. 13 W.	180′-185′ 185′-200′	Sand, fine, with brown to gray clay		Clay, light gray to light brown, slightly micaceous, with very fine sand
County: C	alhoun 6/78.	183 -200	Clay, gray, with very fine sand T. D.: 200'	140′-154′	Clay, light gray to dark gray, with very fine sand, slightly glauconitic and micaceous
0'- 5' 5'- 8' 8'- 25'	Clay, light brown, with silt Clay, light gray, with fine sand Pea gravel, with medium sand	Drill Hole	No. 480. Elevation 151' NW4, Sec. 6, T. 15 S., R. 12 W.	154'-156' 156'- 1 60'	Siderite Clay, gray, with very fine sand, slightly glauconitic and mica-
25'- 39' 39'- 45'	Silt, greenish-gray, with clay binder, micaceous Clay, brown, with a trace of	County: (Calhoun 6/78.	160′-165′ 165′-170′	ceous Sand, fine, with gray clay Clay, light gray, with very fine
45'- 55'	lignite Silt, gray-brown, micaceous, with clay binder	0'- 18'	7.	170′-180′	sand Clay, brown to gray, with very fine sand
55'- 6 0' 60'- 65' 65'- 70'	Clay, grayish-brown Clay, greenish-gray, with silt Clay, dark brown, with approxi-	18'- 25' 25'- 30' 30'- 38'	sand and silt Sand, tan, medium to fine Sand, tan, coarse to medium Pea gravei	180′-190′ 190′-200′	Clay, brown to light brown, with very fine sand Clay, brown, with interbedded fine to very fine sand
70'- 75' 75'- 9 0'	mately 1' to 1'6" of lignite Clay, brown Clay, brownish-gray	38′-100′ 100′-180′	Clay, gray, with fine sand and silt, and a trace of lignite Clay, gray, with fine sand		T. D.: 200'
90'- 95' 95'-1 00' 100'-110'	Clay, gray, with silt Clay, brown, with silt Clay, brown, with silt and a trace of lignite	180′-200′	Clay, gray, with fine sand and approximately 1' of lignite T.D.: 200'	Location: County: E	
110′-115′ 115′-125′	Clay, brown, with very fine sand, micaceous				: Dave Lumbert 6/78. Clay, light brown, with very
125′-140′ 140′-150′	Clay, brown, micaceous, with silt Sand, very fine, with gray silt Clay, gray, with silt	Location: County: (No. 481. Elevation 155' NW¼, Sec. 5, T. 15 S., R. 12 W. Calhoun : Dave Lumbert 6/78,	10'- 25' 25'- 55'	fine sand Pea gravel, with medium sand Clay, gray, glauconitic, with interbedded fine to medium
150'-165' 165'-170' 170'-200'	Clay, brownish-gray, with silt Clay, brown, with silt Clay, brownish-gray, with very fine sand and silt	0'- 5'	Clay, gray-brown, fine sand Clay, gray, fine sand, iron	55'- 65'	sand and a trace of lignite Clay, gray, glauconitic, fine to very fine sand
	T. D.: 200'	10′- 15′ 15′- 20′	stained Clay, gray to tan, with very fine sand Clay, gray, with interbedded	65'- 70' 70'-100'	Clay, gray, slightly glauconitic with fine sand Clay, gray, slightly glauconitic,
Drill Hole I Location: S County: C	No. 478. Elevation 133' SW¼, Sec. 35, T. 14 S., R. 13 W. alhoun	20'- 50' 50'- 55'	tan clay and very fine sand Gravel	100'-120'	slightly micaceous, with very fine sand Clay, gray-brown, with fine
Logged by	J. M. Howard 6/78, Clay, gray, with fine sand and	55'- 60' 60'- 90'	Clay, brown to gray, fine sand Clay, gray, with very fine sand, iron stained	120'-200'	sand and a trace of lignite Clay, gray, slightly glauconitic and micaceous, with fine to very
5'- 38' 38'- 50'	silt Pea gravel, with coarse sand Clay, gray, with silt and a trace	90′-110′	Clay, gray to brown, with fine to very fine sand Clay, gray-brown, slightly mica- ceous and glauconitic with very		fine sand T. D.: 200'
50'- 90' 90'-125'	of lignite Silt with gray, very fine sand Clay, gray, with very fine sand	110′-150′	fine sand Clay, gray, with fine to very fine sand		No. 484. Elevation 163' SE¼, Sec. 11, T. 15 S., R. 12 W.
125′-155′	and silt Clay, gray, silty, with inter- bedded fine sand	150′-180′ 180′-200′	Clay, light gray to light tan, with very fine sand	Logged by	: J. M. Howard 6/78.
155′-200′	Sand, gray, fine, with interbedded gray, silty clay T. D.: 200'	160 -200	Clay, gray to light brown, slightly glauconitic, with very fine sand T. D.: 200'	0'- 5' 5'- 20' 20'- 25'	Clay, mottled, with silt and very fine sand Pea gravel, with red clay binder Clay light brown with all
				20 - 20	Clay, light brown, with silt

25'- 30'	Sand, greenish-gray, very fine,	110'-130'	Clay, light brown Clay, brown, with silt and a	6'- 13	fine, slightly micaceous '6'' Clay, light brown, with very
30'- 65'	glauconitic, silty Clay, grayish-brown, silty, with	130′-135′	trace of lignite		fine sand and silt
65′ 70 ′	a trace of siderite and lignite Clay, brown	135′-150′ 150′-170′	Clay, gray Sand, medium to fine, salt and		'Lignite, black, firm S''Clay, brown to dark brown
70'- 75'	Clay, greenish gray		pepper	16'6''-19	' Lignite, black, firm
75′ 8 0′	Clay, brownish-gray, with inter- bedded glauconitic, fine sand	170′-180′ 180′-200′	Clay, grayish-tan Sand, gray, medium to fine	19'- 28'	Clay, light gray-brown, with very fine sand and silt, slightly
	and silt		with a trace of lignite	001 051	micaceous and carbonaceous
80'- 85'	Sand, greenish-gray, very fine, silty		T. D.: 200'	28'- 35'	Clay, brown, with a trace of lignite
85'- 86' 86'- 95'	Lignite, with dark brown silt	Duill Hala	No. 497 Elevenier 460/	35'- 51' 51'- 57'	Clay, gray-brown, silty Clay, greenish-gray, slightly
95'-1 00 '	Clay, dark brown Clay, brown		No. 487. Elevation 168' SE'4, Sec. 5, T. 15 S., R. 11 W.	51 - 57	Clay, greenish-gray, slightly glauconitic and micaceous
100′-105′ 105′-110′	Clay, greenish-gray, with silt Silt, with gray clay	County: I	Bradley v: J. M. Howard 6/78.	57'- 7 0 '	Sand, light gray-green, very fine, slightly glauconitic and
110'-125'	Clay, brown, with silt	Logged by	7. J. M. Howard 6/76.		micaceous
125′-150′ 150′-160′	Clay, light grayish-brown Clay, gray	0'- 5'	Clay, gray, with silt and fine sand	70′-132′	Clay, light gray-green, silty, slightly glauconitic, with siderite
160′-170′	Clay, gray, with very fine sand	5'- 10'	Pea gravel, with coarse sand	132′-150′	Clay, light brown, with very fine
170′-200′	and silt Sand, very fine, with silt and	10'- 15' 15'- 20'	Clay, gray, with silt Silt, brown, with clay binder		sand, slightly micaceous and carbonaceous
	gray clay binder		and a trace of lignite		
	T. D.: 200'	20'- 25' 25'- 30'	Clay, gray Clay, greenish-gray		Core Interval 10'6" - 14'1"
Drill Hole	No. 485. Elevation 190'	30'- 45'	Clay, brownish-gray, with		Recovered: Lost:
Location:	NE¼, Sec. 12, T. 15 S., R. 12 W.	45'- 55'	silt and a trace of lignite Clay, greenish-gray		
County: E	Bradley:: Dave Lumbert 6/78.	55'- 60' 60'- 65'	Clay, brownish-gray, with silt Clay, brown, micaceous, with		10'6'' - 12'11'' lignite, black, soft, with numerous silt partings
0'- 5'			silt		12'11" - 13'2" clay, brown to
5'- 10'	Sand, brown to red, Clay, brown to red, with fine	65'- 75'	Sand, fine, silty, with glau- conite		dark brown, with very fine sand and thin lignite stringers
10'- 15'	sand Sand, medium to coarse, with	75′- 80′	Clay, dark brown, with a trace of lignite		13'2'' - 14'1'' sand, gray, very fine, with a trace of clay
	red clay	80'- 85'	Lignite, approximately 4', with		T. D.: 150'
15′- 50′ 50′- 65′	Gravel, with coarse sand Clay, gray, with very fine to	85′- 10 5′	a trace of brown clay Clay, greenish-gray and brown		
65'-1 00 '	fine sand		interbedded, with glauconite		No. 490. Elevation 241'
03-100	Clay, gray, slightly glauconitic with very fine sand and a trace	105′-115′	Silt, with brownish-gray clay binder	County: (SE¼, Sec. 36, T. 10 S., R. 12 W. Cleveland
100′-110′	of siderite Clay, gray to blue, with very	115′-150′	Clay, light brownish-gray, silty with a trace of lignite	Logged by	/: G. L. Delevan 6/78.
	fine sand	150'-155'	Clay, light brown, with silt	0'- 21'	Clay, buff, slightly micaceous
110′-120′	Clay, gray to brown, with very fine sand and a trace of	155′-175′	Sand, very fine, with light brownish silt and clay binder	21′-100′	Clay, gray, with very fine sand and silt, slightly micaceous
120′-150′	lignite	175′-200′	Clay, light brown, with very fine	100′-120′	Sand, gray, very fine, with a
120 -150	Clay, gray to blue, with very fine sand and a trace of lignitic		sand and silt T. D.: 200'	120′-138′	trace of gray clay Sand and clay, gray, very fine,
150′-160′	clay Clay, light gray to light brown,			138′-140′	slightly micaceous
	with very fine sand		No. 488. Elevation 187'		Clay, lignitic, with a trace of lignite
160′-170′	Clay, light gray interbedded with gray to blue clay, very	Location: County:	NW¼, Sec. 4 , T. 11 S., R. 12 W. Calhoun	140′-150′	Clay, gray, with a trace of lignite
170′-180′	fine sand and silt Clay, light gray, with very fine		y: G. L. Delevan 6/78.		T. D.: 150'
	sand and silt	0'- 27'	Sand, light brown, very fine,		
180′-190′	Clay, light gray, with interbed- ded fine sand	27'- 34'	silty Pea gravel, with very fine		No. 491. Elevation 280' SW¼, Sec. 5, T. 11 S., R. 11 W.
190′-200′	Sand, fine, with gray clay T. D.: 200'		sand and a trace of lignite	County: (Cleveland
		34'- 70'	sand and silt, micaceous	∟ogged by	/: G. L. Delevan 6/78.
Drill Hole	No. 486. Elevation 184'	70′- 71′	Clay, dark brown, with a trace of lignite	0'- 37'	Class Bloke brown to buff
Location:	NE¼, Sec. 7, T. 15 S., R. 11 W.	71′- 84′	Clay, light gray, silty, slightly		Clay, light brown to buff, slightly micaceous
County: E Logged by	sradiey : J. M. Howard 6/78,	84'- 91'	micaceous Clay, light gray-brown, with	37'- 42' 42'- 8 0'	Siderite Clay, dark gray-brown, with
0'- 10'	Clay, mottled, with fine sand	04/ 400/	interbedded dark brown clay	00	very fine sand, slightly mica-
	and silt	91′-120′	very fine sand and silt	80′-100′	ceous and carbonaceous Clay, gray-brown, with very
10′- 20′ 20′- 45′	Pea gravel, with coarse sand Clay, gray, with silt	120′-138′	Silt, light brown, with a trace of clay and lignite	100′-110′	fine sand, slightly micaceous Sand, gray-brown, very fine,
45'- 50'	Clay, brown, silty, with approximately 1'6" of lignite	138′-150′	Sand, brown, very fine		slightly micaceous
50'- 60'	Clay, gray		T. D.: 150'	110′-122′	Clay, brown, slightly micaceous with a trace of lignite
60'- 65' 65'- 70'	Clay, chocolate brown Clay, light brown	Drill Hole	No. 489. Elevation 228'	122′-145′	Clay, light gray-brown, with
70'- 80'	Silt, greenish-gray, with very	Location:	NW¼, Sec. 36, T. 10 S., R. 13 W.		very fine sand, slightly mica- ceous
80'- 85'	fine sand and glauconite Clay , light brown	County: 1	Dallas v: G. L. Delevan 6/78.	145′-15 0 ′	Clay, brown, with very fine sand and silt, slightly mica-
85′-1 10′	Clay, greenish-gray, with a trace of brown clay				ceous and a trace of lignite
	S. Drown clay	U'- 6'	Sand, light gray- brown, very		T. D.: 150'

	No. 492. Elevation 271'		slightly micaceous	90'-110'	Clay, brown, very fine sand and
Location: County:	NW¼, Sec. 9, T. 11 S., R. 11 W.	137′-150′	, 5, ,,,	440/405/	silt, slightly meaceous
	y: G. L. Delevan 6/78.		ceous T. D.: 150'	110′-125′	Clay and sand, brown, very fine, slightly micaceous
0'- 5'	Class and disk to the state of			125′-15 0 ′	Clay, brown, with very fine
0 - 5	Clay, reddish brown, with iron cemented sand and a trace of	Drill Hole	No. 495. Elevation 232'		sand, slightly micaceous T. D.: 150'
	gravel		NW¼, Sec. 24, T. 11 S., R. 11 W.		1. D.: 150
5′- 16′	Carbonate, dark green, fossilfer- ous, hard, with interbedded	County: (D-31 H-1-	N 400 T
	green sand	Logged by	v: G. L. Delevan 6/78.		No. 498. Elevation 223' SW¼, Sec. 33, T. 11 S., R. 10 W.
16′- 35′	gray areting digitaly	0'- 5'	Sand, light brown, very fine,	County: C	Cleveland
35'- 40'	micaceous Clay, brown, with very fine sand	5'- 13'	silty, with buff clay Sand and clay, light brown to	Logged by	: G. L. Delevan 6/78.
40'- 65'	and silt, and a trace of lignite		buff, very fine, silty, slightly	0'- 4'	Sand, reddish brown, very fine
40 - 65	Clay and sand, gray-brown, very fine, slightly micaceous	13'- 35'	micaceous	4'- 15'	Clay, buff, slightly micaceous,
65'- 73'	Clay, brown, with very fine	10 - 33	Clay and sand, gray-brown, very fine, silty, slightly micaceous	15'- 18'	with interbedded very fine sand Clay, chocolate brown, with
	sand and a trace of lignite and lignitic clay	251 201	and carbonaceous		very fine sand, slightly mica-
73'-120'		35'- 39'	Clay and sand, chocolate brown, very fine, slightly micaceous	18'- 32'	ceous Clay, dark gray-brown, with
	brown, very fine, slightly mica-	39'- 61'	Clay, light gray-brown, with	10 - 52	very fine sand and silt, slightly
120'-140'	ceous Clay, dark gray-brown, slightly		very fine sand, slightly mica-	221 201	micaceous
	micaceous	61'- 63'	ceous Clay, lignitic, dark chocolate	32′- 80′	Clay, gray-brown, with very fine sand and silt, slightly micaceous
140′-150′	Sand, gray-brown, very fine, silty, slightly micaceous		brown to black, with a trace	80′-150′	Clay and sand, gray-brown, very
	T. D.: 150'	63'-110'	of lignite Clay and sand, gray, very fine,		fine, slightly micaceous T. D.: 150'
			slightly micaceous, with a trace		1. D 150
Drill Hole	No. 493. Elevation 294'	110′-122′	of lignite Clay, gray-brown, with very	Duill Hala	No 400 Fig. 1704
Location:	NE¼, Sec. 16, T. 11 S., R. 11 W.	110 122	fine sand, slightly micaceous	Location:	No. 499. Elevation 176' SW¼, Sec. 3, T. 12 S., R. 10 W.
County: (Logged by	zieveland v: G. L. Delevan 6/78.	122′-123′	Clay, lignitic, with a trace of lignite	County: E	Bradley
		123'-150'	Clay, light brown, slightly mica-	Logged by	: G. L. Delevan 6/78.
0'- 13'	very fine		ceous, with very fine sand T. D.: 150'	0'- 5'	Sand, reddish brown, silty, very fine
13′- 29′	very fine sand, slightly mica-			5′- 18′	Clay, buff, with interbedded very fine sand
29'- 57'	ceous Clay, gray-brown, with very fine	Drill Hole	No. 496. Elevation 268'	18'- 21'	Clay, brown, with very fine
	sand, slightly micaceous and	County: (NW¼, Sec. 30, T. 11 S., R. 10 W. Cleveland		sand and silt, slightly mica- ceous
57'- 64'	carbonaceous Sand, gray-brown, very fine,	Logged by	: G. L. Delevan 6/78.	21'- 35'	Sand, gray-brown, silty, very
	slightly micaceous and carbon-	0'- 6'	Sand, reddish brown, very fine,	35'- 42'	fine, slightly micaceous Clay, gray-brown
64'- 85'	aceous Clay, gray-brown to brown,		silty	42'- 45'	Clay, dark chocolate brown
	with very fine sand, slightly	6'- 37'	Clay and sand, buff, fine to very fine, slightly micaceous		to black, with a trace of lig- nite
85'- 87'	micaceous	37'- 70'	Clay, gray to gray-brown, with	45'- 60'	Clay, greenish gray, slightly
	Clay, lignitic, dark brown to black, with a trace of lignite		very fine sand and silt, slightly micaceous	60'- 95'	silty
87'- 89'	Lignite, black, firm, with a	70'- 71'	Lignite and lignitic clay, black	60 95.	Sand, gray, fine to very fine, slightly micaceous, with a trace
89'- 91'	trace of dark brown clay Clay, dark chocolate brown,	71'- 96'	Clay, gray-brown, with very fine		of clay
	with a trace of lignite	96'-121'	sand, slightly micaceous Clay, brown, silty, slightly mica-	95′-121′	Clay, gray-brown, slightly slity and micaceous, with very fine
91'- 95'	Clay, brown, with thin lignite stringers	454/405/	ceous		sand
95'-108'	Sand and silt, brown, very	121′-135′	Sand and clay, gray-brown, very fine, slightly micaceous	121′-128′	Clay, brown, slightly silty and micaceous
108'-150'	fine, with thin lignite stringers	135′-150′	Clay, gray-brown, with very	128'-150'	Clay, gray to gray-brown,
100 100	Clay, brown, silty, slightly micaceous		fine sand, slightly micaceous T. D.: 150'		slightly micaceous
	T. D.: 150'		1. 5 100		T. D.: 150'
				Drill Hole I	No. 500. Elevation 183'
Drill Hole	No. 494. Elevation 273'	Drill Hole	No. 497. Elevation 228'	County: Br	SW¼, Sec. 11, T. 12 S., R. 10 W.
County: C	NW¼, Sec. 23, T. 11 S., R. 11 W. Sleveland	Location:	SW¼, Sec. 29, T. 11 S., R. 10 W.		G. L. Delevan 6/78.
	: G. L. Delevan 6/78.	County: C Logged by	: G. L. Delevan 6/78.	0'- 13'	Clay light brown to
0'- 5'	Sand, reddish brown, very fine				Clay, light brown to orange- brown, slightly micaceous
5'- 27' 27'- 55'	Clay, buff, slightly micaceous	0'- 9'	Sand, reddish brown, with a trace of buff clay	13'- 25'	Clay and sand, light gray-brown, very fine, slightly micaceous
	Clay and sand, buff, very fine, silty, slightly micaceous	9'- 35'	Clay, brown, with very fine sand and silt, slightly mica-	25'- 39'	Sand, light gray-brown, fine to
55′- 8 0′	Sand, light orange to brown, silty, very fine	05:	ceous	39'- 46'	very fine, slightly micaceous Clay, light gray-brown, with
80'-105'	Clay, gray, with very fine sand	35′- 6 0 ′	Clay, gray-brown, with very fine sand, slightly micaceous	461 401	very fine sand
	slightly micaceous, with a trace	6 0 ′- 75′	Clay, brown, with very fine	46'- 49'	Clay, brown, with very fine sand, slightly micaceous
105'-107'	of lignite Clay, light blue-gray, with very		sand, slightly micaceous, with a trace of lignite and	49'- 61'	Clay and sand, light gray-brown,
	fine sand and silt, slithtly mica-		black clay	61'- 65'	very fine Clay, chocolate brown, with
107′-137′	ceous Clay, dark gray-brown, silty,	75′- 9 0 ′	Clay and sand, brown, silty, very fine		very fine sand and a trace of
			voi y Title		lignite

65'- 90	' Clay, gray, with very fine sand	Drill Hole No. 504. Elevation 240'	70'-150' Clay, gray-brown, with very
90'-103'	and silt, slightly micaceous Clay, gray, with dark brown	Location: NW¼, Sec. 31, T. 13 S., R. 9 W. County: Bradley	fine sand, slightly micaceous T. D.: 150'
102/ 105/	clay, silty, slightly micaceous	Logged by: G. L. Delevan 7/78.	
103′-125′	Clay, gray-brown, with very fine sand and silt, slightly micaceous	0'- 27' Clay, light orange, with very	Drill Hole No. 508. Elevation 270'
125′-15 0 ′	Clay, gray-brown to brown,	fine sand, slightly micaceous	Location: NW¼, Sec. 10, T. 13 S., R. 10 W
	with very fine sand and silt, slightly micaceous	27'- 31' Sand, light orange to brown, very fine, silty, slightly mica-	County: Bradley Logged by G. L. Delevan 7/78
	T. D.: 150'	ceous	Logged by G. L. Delevan 7770
		31'- 40' Clay, light brown, with very	0'- 6' Sand, light orange-brown, very fine, silty
	No. 501. Elevation 161'	fine sand, slightly micaceous 40'- 45' Clay, dark gray-brown, with	6'- 29' Clay, buff, silty, slightly mica
Location: County: B	SE¼, Sec. 14, T. 12 S., R. 10 W.	very fine sand and silt, slightly	ceous 29'- 36' Clay, gray, with very find
	/: G. L. Delevan 6/78.	micaceous 45'- 60' Clay, brown, with very fine	29'- 36' Clay, gray, with very fine sand, slightly micaceous
0'- 13'	Sand raddish brown years fine	sand and silt, slightly mica-	36'- 90' Clay, brown, with interbedded
13'- 35'	Sand, reddish brown, very fine Clay and sand, gray-brown, very	ceous 60'-150' Clay, gray to gray-brown,	very fine sand, slightly mica ceous with a trace of lignite
35'- 70 '	fine, slightly micaceous	slightly micaceous, with a trace	90'-103' Clay and sand, gray-brown
35 - 70	Clay, gray-brown, with very fine sand, slightly micaceous	of lignite T. D.: 150'	very fine 103'-114' Sand, gray-brown, very fine
70'- 85'	Clay and sand, gray-brown, very		slightly micaceous
85′-1 00 ′	fine, slightly micaceous Clay, gray-brown, with very	Drill Hole No. 505. Elevation 220'	114'-122' Clay, gray-brown, with very fine sand and silt, slightly
100/115/	fine sand, slightly micaceous	Location: SE¼, Sec. 19, T. 13 S., R. 9 W.	micaceous
100′-115′	Clay and sand, gray-brown, slightly micaceous	County: Bradley Logged by: G. L. Delevan 7/78.	122'-123'6'' Clay, black, lignitic, with black, soft lignite
115′-140′	Clay, gray-brown, with very		123'6"-125' Clay, brown, silty, slightly
	fine sand, slightly micaceous with a trace of dark brown	0'- 24' Clay, light orange, with very fine sand and silt	micaceous, with a trace o lignite
140/150/	clay	24'- 28' Clay, light brown, with a	125'-142' Clay, light gray, slightly mica
140′-150′	Clay, gray-brown, with very fine sand, slightly micaceous	trace of light brown, very fine sand	ceous 142'-145' Sand, light brown, very fine
	T. D.: 150'	28'- 34' Clay, gray-brown, with very	145'-150' Clay, brown, with very fine
		fine sand, slightly micaceous 34'- 37' Clay, brown, with very fine	sand, slightly micaceous T. D.: 150'
	No. 502. Elevation 220'	sand, slightly micaceous	1. D 130
County: E	SE¼, Sec. 24, T. 12 S., R. 10 W. Bradley	37'-110' Clay, light brown, with very fine sand and silt, slightly	Drill Hole No. 509. Elevation 255'
Logged by	7: G. L. Delevan 6/78.	micaceous	Location: SW4, Sec. 9, T. 13 S., R. 10 W
		110'-114' Clay, brown, with very fine sand and silt, slightly mica-	County: Bradley Logged by: G. L. Delevan 7/78
0'- 37' 37'- 39'	Clay, buff, slightly micaceous	ceous with a trace of lignite	
	Clay, light gray, silty, slightly carbonaceous	T. D.: 114'	0'- 11' Sand, light brown, fine to very fine
39'- 6 0'	Clay, gray-brown, with very	D. 111.1. 1. 1. 110.0	11'- 19' Clay, buff, with very fine
60'-13 0 '	fine sand, slightly micaceous Clay, gray-brown, with very	Drill Hole No. 506. Elevation 229' Location: SW¼, Sec. 18, T. 13 S., R. 9 W.	sand and silt, slightly mica
130′-15 0 ′	fine sand, slightly micaceous	County: Bradley	ceous 19'- 24' Clay, brown, with very find
130 -130	Clay, gray-brown, with inter- bedded, very fine sand, slightly	Logged by: G. L. Delevan 7/78.	sand, slightly micaceous
	micaceous	0'- 3' Sand, light reddish brown, very	24'- 30'6'' Clay, gray-brown, with very fine sand, slightly micaceou
	T. D.: 150'	fine, silty, slightly micaceous	30'6"-31'6" Lignite, black, firm
Daill Hala	N - 500 -	ceous	31'6''-36' Clay, gray-brown to light gray with very fine sand
	No. 503. Elevation 162' SW¼, Sec. 30, T. 12 S., R. 9 W.	23'- 75' Clay, gray-brown, with very	36'- 44' Clay and sand, light gray, fine
County: B	radley	fine sand and silt, slightly micaceous	to very fine, slightly micaceous 44'- 54' Clay, gray-brown, with very fine
Logged by	: G. L. Delevan 7/78.	75'-100' Clay, brown, with very fine	sand and silt, slightly micaceous
0'- 15'	Sand and clay, light reddish	sand, slightly micaceous and a trace of siderite	54'- 56' Clay, dark brown, with a trace of dark brown lignite
15'- 30'	brown, very fine, silty Clay, gray-brown, with very	100'-150' Clay, gray-brown, with very	56'- 72' Clay, gray-brown, with very
	fine sand and silt, slightly	fine sand and silt, slightly micaceous	fine sand and silt, slightly micaceous
30'- 40'	micaceous . Clay, brown, with very fine	T. D.: 150'	72'- 90' Sand and clay, gray-brown, very
	sand and silt, slightly mica-		fine 90'- 92'6'' Lignite, black, firm, with black
40'- 64'	ceous	Drill Hole 507. Elevation 232'	lignitic clay
40 04	Clay, gray-brown, with very fine sand and silt, slightly	Location: SW¼, Sec. 1, T. 13 S., R. 10 W. County: Bradley	92'6"-125' Clay, very light gray
64'- 65'	micaceous	Logged by: G. L. Delevan 7/78.	125'-150' Clay, gray, with very fine sand silt, slightly micaceous
65'- 75'	Clay, dark brown, lignitic Clay, light brown, with very	0'- 4' Sand, light brown, very fine	and a trace of siderite
	fine sand and silt, slightly	4'- 21' Clay, buff, with very fine sand	T. D.: 150'
75'- 96'	micaceous Clay, dark brown to black,	21'- 24' Clay, brown, with very fine	Drill Hole No. 510. Elevation 263'
06/450	lignitic, with a trace of lignite	sand, slightly micaceous 24'- 44' Clay, gray, with very fine	Location: NW¼, Sec. 8, T. 13 S., R. 10 W. County: Bradley
96′-15 0 ′	Clay, light brown, with very fine sand and silt, slightly	sand and silt and a trace of	Logged by: G. L. Delevan 7/78.
	micaceous	lignite 44'- 70' Clay and sand, gray-brown,	0'- 9' Sand, light reddish brown, very
	T. D.: 150'	very fine, slightly micaceous	fine, silty

					*
9'- 22'	Clay and sand, buff, very fine,		very fine sand, slightly mica-	Drill Hole	No. 517. Elevation 225'
22'- 23'	silty, slightly micaceous Lignite and lignitic clay		ceous with a trace of siderite Clay, gray-brown, with very	Location: County: [SE¼, Sec. 30, T. 12 S., R. 7 W.
23'- 52'	Clay, gray to gray-brown, with		fine sand, slightly micaceous		c: G. L. Delavan 7/78.
	very fine sand, slightly mica- ceous	128′-130′	Sand, gray-brown, very fine, with gray-brown clay		
52'- 53' 53'- 72 '	Lignite, black, soft	130′-135′	Clay, gray-brown, with very	0'- 5'	Sand, light brown, very fine,
	Sand and clay, brown, very fine, with a trace of lignite	135′-138′	fine sand, slightly micaceous Clay, brown to chocolate	5'- 22'	silty Clay, light brown, with very
72'- 74' 74'- 76'	Clay, light brown, slightly silty Lignite and lignitic clay, black		brown, with very fine sand and		fine sand and silt, slightly
	to dark brown, firm	138′-150′	silt Clay, gray-brown, slightly mica-	22'- 50'	micaceous Clay, gray-brown, slightly silty
76′- 80′ 80′- 87′	Clay, light brown Clay, light gray-green, with very		ceous T. D.: 150'	50′-150′	and micaceous
87′-133′	fine sand and silt		1. 5 130	50 -150	Clay, gray-brown, with very fine sand and silt, slightly
07-133	Sand and clay, gray-brown, very fine, slightly micaceous				micaceous with a trace of siderite
133′-150′	Clay, gray-brown, slightly silty and micaceous		No. 514. Elevation 145'		T. D.: 150'
	T. D.: 150'	County: [NW¼, Sec. 33, T. 12 S., R. 8 W. Drew		
		Logged by	/: G. L. Delevan 7/78.	Daill Hala	BI - E40 E1 11 2001
Drill Hole	No. 511. Elevation 228'	0'- 8'	Sand, light orange-brown, very		No. 518. Elevation 233' SW¼, Sec. 28, T. 12 S., R. 7 W.
Location: County: B	SW¼, Sec. 6, T. 13 S., R. 10 W. radley	8'- 19'	fine with buff clay	County: [Drew
	: G. L. Delavan 7/78.	0 - 19	Clay, light orange-brown, with very fine sand and silt, slightly	Logged by	: G. L. Delavan 7/78.
0'- 30'	Clay, light brown, with very	19'- 30'	micaceous Clay, gray-brown, with very fine	0'- 8'	Sand, light brown, very fine
	fine sand and silt, slightly		sand and a trace of siderite	8'- 37'	slightly micaceous Clay, brown to light brown
30'- 36'	micaceous Clay and sand, light brown,	30'- 64'	Clay, dark gray-brown, with very fine sand, slightly mica-	37′-100′	Clay, gray-brown, slightly silty and micaceous
36'- 89'	very fine Sand, gray, fine to very fine	644 654	ceous	100′-150′	Clay, gray, slightly silty and
89'- 90'	Clay, dark chocolate brown to	64'- 65' 65'- 69'	Clay, dark chocolate brown Clay, brown, with very fine		micaceous T. D.: 150'
	black, lignitic, with very fine sand	69'1 0 5'	sand, slightly micaceous		
90'-104'	Sand, gray, fine to very fine,		Clay, gray, with very fine sand, slightly micaceous		
104'-130'	slightly micaceous Clay, gray, slightly micaceous	105′-108′ 108′-150′	Clay, brown, silty		No. 519. Elevation 270'
130′-137′	Sand, gray, fine to very fine,	100 -100	Clay, gray-brown, with very fine sand and silt, slightly	County: [SW¼, Sec. 11, T. 13 S., R. 7 W. Drew
	slightly micaceous, with a trace of gray clay		micaceous T. D.: 150'	Logged by	: G. L. Delavan 8/78.
137′-150′	Clay, gray, with fine sand, slightly micaceous and a trace			0'- 9'	Sand, light reddish brown, very
	of siderite				fine, silty, with a trace of light brown clay
	T. D.: 150'		No. 515. Elevation 186'	9'- 27'	Clay and sand, light brown to
D-31 11-1-	N 540 -	County: [SE¼, Sec. 27, T. 12 S., R. 8 W. Drew		buff, very fine, slightly mica- ceous
Location:	No. 512. Elevation 150' SE¼, Sec. 4, T. 13 S., R. 9 W.	Logged by	: G. L. Delavan 7/78.	27'- 80'	Clay, dark gray-brown, slightly
County: E	Bradley	0'- 7'	, , , , , , , , , , , , , , , , , , , ,	80'-150'	micaceous Clay, light gray-brown, silty
		7'- 22'	fine, silty Clay, light brown, with very		with a trace of siderite T. D.: 150'
0'- 12'	Clay, gray-brown, with very fine sand, slightly micaceous		fine sand and silt		1. 5 130
12'- 40'	Clay, gray, with very fine sand	22'- 98'	Clay, brown to gray-brown, with very fine sand and silt,		
40'- 50'	and silt, slightly micaceous Clay, dark gray-brown	98′-100′	slightly micaceous Clay, gray-brown, with a trace	Drill Hole	No. 520. Elevation 270'
50'-132'	Clay, gray, with very fine		of siderite	Location: County: E	SE¼, Sec. 15, T. 13 S., R. 7 W. Drew
	sand and silt, slightly mica- ceous	100′-150′	Clay, brown, with very fine sand, slightly micaceous		: G. L. Delavan 8/78.
132′-139′	Clay and sand, gray-brown, very fine, silty		T. D.: 150'	0'- 10'	Clay, light brown, with very
139'-150'	Clay, gray-brown, with very			10'- 27'	fine sand and silt Clay, buff, with very fine
	fine sand and silt, slightly micaceous	Deill Hala	No. 516. Elevation 211'		sand and silt
	T. D.: 150'	Location:	SW¼, Sec. 25, T. 12 S., R. 8 W.	27′-150′	Clay, dark gray-brown, slightly silty and micaceous with a trace
		County: D	rew	1.0	of siderite
Drill Hole I	No. 513. Elevation 137' NW¼, Sec. 5, T. 13 S., R. 8 W.				T. D.: 150'
County: D	rew	0′ 7′	Sand, light brown, very fine, silty		
Logged by	: G. L. Delavan 7/78.	7'- 30'	Clay, light brown, with very	Drill Hole I	No. 521. Elevation 256'
0'- 12'	Sand, light orange-brown,		fine sand and silt, slightly micaceous	Location: County: D	NW¼, Sec. 26, T. 13 S., R. 7 W.
12'- 17'	very fine Pea gravel	30′-120′	Clay, dark gray-brown, with		G. L. Delavan 8/78.
17'- 30'	Clay, gray-brown, silty, slightly		very fine sand and silt, slightly micaceous with a trace of	0'- 8'	Clay, light buff
30'- 40 '	micaceous Clay and sand, gray-brown, very	120′-180′	siderite Clay, gray-brown, with very	8'- 22'	Clay, light gray-brown
40' 61'	tine	120-100	fine sand	22′-150′	Clay, dark gray-brown, slightly silty and micaceous
01	Clay, chocolate brown, with		T. D.: 180'		T. D.: 150'

	ATTRIATO	AO EIGHTE IN VESTIGATIONS	
Drill Hole No. 522. Elevation 245' Location: SW%, Sec. 26, T. 12 S., R. 7 W. County: Drew	24'- 26'	sand and silt, slightly micaceous Clay, light brown to gray- brown with very fine sand and	Drill Hole No. 529. Elevation 240' Location: NE¼, Sec. 27, T. 8 S., R. 13 W. County: Cleveland
Logged by: G. L. Delavan 8/78.	26'- 36'	silt, slightly micaceous Clay, brown, with very fine	Logged by: G. L. Delavan 8/78.
0'- 8' Sand, light brown, very fine, silty	36'- 75'	sand and silt, slightly micaceous Clay, gray, with very fine sand	0'- 4' Sand, light reddish brown, very fine, silty
8'- 19' Clay, light brown, with very fine sand, slightly micaceous		and silt, slightly micaceous with a trace of siderite	4'- 12' Clay, light tan to buff, silty 12'- 14' Clay, brown to dark chocolate
19'-150' Clay, gray-brown, slightly silty and micaceous	75′-100′	Clay, gray-brown, silty, with a trace of lignite and lignitic clay	brown, silty 14'- 24' Clay, gray-brown, with inter-
T. D.: 150'	100′-130′	Clay, gray, with very fine sand and silt, and a trace of lignite	bedded dark brown clay
Drill Hole No. 523. Elevation 283'	130′-150′	and lignitic clay	ceous
Location: NE¼, Sec. 22, T. 12 S., R. 7 W. County: Drew	130 - 150	slightly micaceous, with a trace	micaceous
Logged by: G. L. Delavan 8/78.		of lignite T. D.: 150'	55'- 72' Clay, gray-brown, with very fine sand, slightly micaceous
0'- 22' Clay, light brown, silty, slightly micaceous	Drill Holo	No. E27 Clausian 040/	72'- 83' Clay, gray-brown 83'-100' Clay, gray-brown, with very
22'- 39' Clay, gray-brown, with very fine sand, slightly micaceous	Location:	No. 527. Elevation 240' SW¼, Sec. 3, T. 9 S., R. 13 W.	fine sand, slightly micaceous 100'-115' Clay, gray-brown
39'-150' Clay, gray-brown, silty, slightly	County: C Logged by	rieveland v: G. L. Delavan 8/78.	115'-150' Clay, gray-brown, with very fine sand, slightly micaceous
micaceous T. D.: 150'			T. D.: 150'
Drill Hole No. 524. Elevation 0001	0'- 4'	silty	Drill Hole No. 530. Elevation 233' Location: NW¼, Sec. 22, T. 8 S., R. 13 W.
Drill Hole No. 524. Elevation 268' Location: SE%, Sec. 10, T. 12 S., R. 7 W.	4'- 19'	Clay, light brown, silty, slightly micaceous	County: Cleveland Logged by: G. L. Delavan 8/78.
County: Drew Logged by: G. L. Delavan 8/78.	19'- 22' 22'- 24'	Lignite, black, firm Clay, brown to dark brown,	0'- 18' Clay, buff, with very fine
0'- 4' Sand, light brown, very fine,	24'- 65'	with a trace of lignite Clay, gray, silty, slightly mica-	sand, slightly micaceous 18'- 26' Clay, gray-brown, with a trace
silty 4'- 30' Sand and pea gravel, light	65′-125′	ceous Clay, gray-brown, silty, slightly	of silty brown clay 26'- 32' Clay, gray to gray-brown, silty
brown, very fine, silty 30'-150' Clay, gray-brown, silty, slightly		micaceous, with a trace of lignite and siderite	32'- 39' Clay, brown, with very fine sand, slightly micaceous with
micaceous T. D.: 150'	125′-150′	Clay, light gray, slightly silty,	a trace of lignite 39'- 64' Clay, gray-brown, silty
Drill Hole No. 525 Standard CON		Core Interval 16'6'' - 21'	64'- 66'6'' Clay, black to dark choco- late brown, lignitic, with a
Drill Hole No. 525. Elevation 208' Location: SW%, Sec. 14, T. 10 S., R. 13 W.		Recovered: Lost:	trace of lignite 66'6''-82' Clay, light gray, with very
County: Dallas Logged by: G. L. Delavan 8/78.		30" 24"	fine sand and silt, slightly micaceous
0'- 7' Sand, light brown, fine to		16'6" - 18'6" lignite, black, soft	82'-125' Sand, light gray, very fine, silty
very fine, slightly micaceous 7'- 16' Clay, light gray, with very fine		with numerous silt partings 18'6" - 19' lignite, black, firm	125'-150' Clay, light gray-brown, sllty T. D.: 150'
sand 16'- 18' Gravel, large pebble to small		to hard 19' - 21' not recovered	Drill Hole No. 531. Elevation 220'
pea 18'- 38' Clay, gray-brown, with very fine		T. D.: 150'	Location: NW¼, Sec. 15, T. 8 S., R. 13 W. County: Cleveland
sand, silty 38'- 47' Clay, very light gray, slightly			Logged by: G. L. Delavan 8/78.
micaceous 47'- 48' Clay, dark gray-brown to	Drill Hole	No. 528. Elevation 247'	0'- 4' Sand, light brown, very fine, silty 4'- 22' Clay, light brown, with very
brown, with a trace of lignite 48'-53' Clay, gray-brown, slightly mica-	Location: County: C	NE¼, Sec. 34, T. 8 S., R. 13 W.	fine sand and silt, slightly micaceous
ceous 53'- 69' Clay, very light gray, slightly	Logged by	: G. L. Delavan 8/78.	22'- 45' Clay, brown, with very fine sand and silt, slightly mica-
micaceous 69'- 81' Clay, light gray-brown, with	0′- 17′	Sand, very light brown, very fine, silty, slightly micaceous	ceous 45'- 60' Clay and sand, gray-brown,
very fine sand, slightly mica- ceous	17′- 19′	Clay, very light brown, with very fine sand and silt	very fine, silty, slightly mica- ceous
81'-116' Clay, gray-brown, with very fine sand and silt, slightly mica-	19'- 23' 23'- 30'	Clay, light brown, and lignite Clay, dark chocolate brown,	60'- 68' Clay, dark gray-brown 68'-109' Clay, gray, with interbedded
ceous 116′-12 0′ Sand, gray-brown, fine		with very fine sand and silt, and a trace of lignite	very fine sand, slightly mica- ceous
120'-150' Clay, gray-brown, with very fine sand, slightly micaceous	30'- 40'	Clay and sand, light brown to buff, very fine, and a trace	109'-121' Sand, gray, fine to very fine
and a trace of ald-at-		of lignite	121'-150' Clay, gray-brown to brown, slightly micaceous
and a trace of siderite T. D.: 150'	40'- 52'		
T. D.: 150′		Silt and clay, gray-brown, slight- ly micaceous	T. D.:150'
T. D.: 150' Drill Hole No. 526. Elevation 237' Location: NE¼, Sec. 15, T. 9 S B. 13 W	52'- 90'	Silt and clay, gray-brown, slight- ly micaceous Clay, gray-brown, silty, slightly micaceous	T. D.:150' Drill Hole No. 532. Elevation 250' Location: SW¼, Sec. 3, T. 8 S., R. 13 W.
T. D.: 150' Drill Hole No. 526. Elevation 237'	52′- 90′ 90′-110′	Silt and clay, gray-brown, slightly micaceous Clay, gray-brown, silty, slightly micaceous Silt and sand, gray-brown, with a trace of gray-brown clay	T. D.:150' Drill Hole No. 532. Elevation 250'
T. D.: 150' Drill Hole No. 526. Elevation 237' Location: NE¼, Sec. 15, T. 9 S., R. 13 W. County: Cleveland	52'- 90'	Silt and clay, gray-brown, slight- ly micaceous Clay, gray-brown, silty, slightly micaceous Silt and sand, gray-brown, with	T. D.:150' Drill Hole No. 532. Elevation 250' Location: SW¼, Sec. 3, T. 8 S., R. 13 W. County: Cleveland

		AHKANS	AS LIGNITE INVESTIGATIONS		
8'- 18'	Clay, light brown, silty, slightly	94'-100'	Sand, greenish-gray, very fine,		fine sand, slightly micaceous
18'- 28'	micaceous Clay, gray-brown, with very fine	100′-113′	silty, slightly micaceous Clay, greenish-gray, with very	70'- 75'	Clay and sand, gray, very fine, slightly micaceous
28'- 33'	sand and silt, slightly micaceous	100 110	fine sand and silt, slightly	75'- 92'	Clay, gray-green, with very fine
20 - 33	Clay, gray-brown, with very fine sand and silt, and interbedded	113'-127'	micaceous Clay, gray-brown, with very fine		sand and silt, slightly micaceous with a trace of dark chocolate
	dark brown clay, with a trace of lignite		sand and silt and a trace of chocolate brown clay	92′-107′	brown clay Sand, gray, very fine, slightly
33'- 43'	Clay and sand, gray, very fine,	127'-150'	Clay, light brown, with dark		micaceous
43'- 50'	silty Clay, gray to gray-brown, with		chocolate brown lignitic clay interbedded and a trace of	107′-108′ 108′-135′	Lignite, black, soft Clay, chocolate brown, silty,
	very fine sand and silt, slightly micaceous		lignite T. D: 150'	135′-143′	with a trace of lignite
50'- 57'	Clay, gray, with very fine sand,		1. 0. 150	135 -143	Sand, gray-brown, very fine, slightly micaceous
57'- 69'	slightly micaceous Clay, gray-brown, with very fine	Drill Hole	No. 535. Elevation 236'	143′-150′	Clay, gray-brown, with very fine sand, slightly micaceous
69′- 7 0 ′	sand and silt, slightly micaceous	Location:	NW¼, Sec. 19, T. 7 S., R. 13 W.		T. D.: 150'
05 - 70	Clay, gray-brown, with inter- bedded dark brown clay and a	County: [Logged by	Jailas /: G. L. Delavan 8/78.		
70'- 85'	trace of lignite Sand, very fine, with a trace of	0'- 5'	Sand, light brown, very fine,		No. 538. Elevation 345' NE¼, Sec. 36, T. 7 S., R. 15 W.
85′- 104 ′	gray clay		silty	County: E	Dallas
	Clay, gray-brown, with a trace of dark brown clay	5′- 10′	Clay, light brown, with very fine sand and silt, slightly	Logged by	: G. L. Delavan 8/78.
104′-109′	Clay, greenish-gray, silty, slightly micaceous	10'- 15'	micaceous	0'- 5'	Sand, light reddish brown, very
109'-119'	Clay, brown, with very fine	10 - 15	Clay, brown, with very fine sand and silt, slightly mica-	5'- 55'	fine, silty, slightly micaceous Clay and sand, buff, very fine,
	sand and silt, slightly mica- ceous with a trace of lignite		ceous with a trace of dark brown lignitic clay	55′- 96′	with small pea gravel Clay and sand, gray-brown, very
119′-150′	Clay, gray, with very fine sand	15'- 30'	Clay, gray-green, with very	33 - 30	fine, with small pea gravel,
	and silt, slightly micaceous T. D.: 150'	30'- 70'	fine sand, slightly micaceous Clay, gray-brown, with very	96′-101′	slightly micaceous and silty Sand, light brown, very fine
			fine sand and silt, slightly micaceous with a trace of	101′-130′	Clay and sand, gray-brown, very
	No. 533. Elevation 182'		dark brown clay and lignite		fine, with a trace of lignite T. D.: 130'
County: E			T. D.: 70'		
Logged by	: G. L. Delavan 8/78.	Daill Hala	No. 520 51		No. 539. Elevation 380'
0'- 15'	Clay, light tan, with very fine	Location:	No. 536. Elevation 266' NE¼, Sec. 26, T. 7 S., R. 14 W.	County: D	NW¼, Sec. 35, T. 7 S., R. 15 W.
15'- 20'	sand and silt Clay, light brown	County: E	Dallas 7: G. L. Delavan 8/78.		: T. Y. Suen 8/78.
20'- 30'	Clay, brown, slightly micaceous and slity			0'- 12'	Clay, buff, slightly silty and
30'- 40'	Pea gravel		Sand, light gray, very fine, slightly micaceous	12'- 45'	micaceous Sand, light gray, fine, slightly
40'- 75'	Clay, gray-brown, slightly micaceous	3'- 10'	Clay, light brown, with very fine sand and silt, slightly	45′-103′	carbonaceous
75'- 77'	Lignite, black, firm, with a	404 604	micaceous	45-105	Clay, gray, with fine sand and silt, slightly carbonaceous
	trace of dark chocolate brown clay	10'- 20' 20'- 34'	Pea gravel Clay, light brown, with very	103'-150'	with a trace of siderite Clay, gray, with very fine
77'- 87'	Clay, gray-brown, slightly mica- ceous with a trace of light tan		fine sand and silt, slightly		sand and silt, slightly mica-
07/110/	clay and lignite	34'- 65'	micaceous Clay, dark brown, with very		ceous T. D.: 150'
87′-110′	Sand and clay, light gray-brown, very fine, silty, slightly mica-		fine sand and silt, slightly micaceous		
110'-150'	ceous Sand, light brown to brown,	65'- 76'	Clay, greenish-gray, with very		No. 540. Elevation 430'
	very fine, silty		fine sand, slightly silty and micaceous	Location: County: D	NW¼, Sec. 34, T. 7 S., R. 15 W.
	T. D.: 150'	76'- 77' 77'- 85'	Lignite, black, hard Sand, greenish-gray, very fine,	Logged by	: T. Y. Suen 8/78.
Location:	No. 534. Elevation 211' NE¼, Sec. 19, T. 7 S., R. 13 W.	85′-142′	slightly micaceous Clay, gray-brown, slightly silty,	0'- 25'	Clay, light buff, slightly silty
County: D	Pallas		carbonaceous	25'- 46'	and micaceous Sand, very fine, silty
	: G. L. Delavan 8/78.	142′-150′	Clay, greenish-gray, with very fine sand and silt, slightly	46'- 78'	Clay, gray-brown, with very fine sand and silt, slightly
0'- 17'	Sand, light gray, very fine with light gray clay		micaceous, with a trace of		micaceous with a trace of
17'- 19' 19'- 33'	Clay, buff, slightly micaceous		lignite T. D.: 150'	78'- 93'	siderite Clay, buff, with very fine sand
	Clay, gray-brown, slighlty silty and micaceous			93′-150′	and silt, slightly micaceous
33'- 34'	Lignite and dark chocolate brown lignitic clay	Drill Hole	No. 537. Elevation 330'	30 -130	Sand, buff, very fine, silty, slightly carbonaceous
34'- 54'	Clay, greenish-gray, slightly	County: D	SE¼, Sec. 30, T. 7 S., R. 14 W. Dallas		T. D.: 150'
54'- 56'	micaceous, sandy Clay, chocolate brown, lignitic	Logged by	: G. L. Delavan 8/78.	Delli Hale !	No 541 Flouris 470
56'- 66'	Clay, light gray-brown, slighltly	0/ 0=			No. 541. Elevation 470' SE¼, Sec. 33, T. 7 S., R. 15 W.
66'- 72'	micaceous Sand, light gray-brown, very	0′- 35′	Sand, light brown, very fine, silty, slightly micaceous	County: D	
72'- 94'	fine, silty Clay, greenish-gray, with very	35'- 55'	Clay, light brown, with very		
	fine sand and silt, slightly mica-		fine sand and silt, slightly micaceous	0'- 35' 35'- 43 '	Pea gravel Clay, purple-red, with very fine
	ceous	55'- 7 0 '	Clay, gray-brown, with very		sand and silt

	ARKAN	SAS LIGNITE INVESTIGATIONS		
43'- 82' Sand, light orange-brown, 82'-103' Silt, light brown 103'-105' Clay, chocolate brown, very fine sand and silt, a	with Location:	No. 544. Elevation 285' NE½, Sec. 21, T. 8 S., R. 15 W. Dallas y: T. Y. Suen 8/78.	Drill Hole No. 548. E Location: SW¼, Sec County: Dallas Logged by: T. Y. S	. 11, T. 9 S., R. 15 W.
trace of lignite 105'-108' Clay, light brown, with fine sand and silt, and a		Sand and clay, light gray, very fine, silty, slightly mica-	red, wi	ottled buff to light ith very fine sand
of lignite 108'-123' Clay, greenish-gray, with fine sand and silt, and app	roxi-	interbedded chocolate brown	fine, sli	ght gray, fine to very ghtly micaceous, with
mately 6" of black, hard li 123'-126' Silt, light brown, with a of siderite	trace 23'- 26' 26'- 58'		stained	uff to yellow, iron
126'-137' Clay and silt, greenish- micaceous, with a trace of lignite	gray,	fine, with a trace of lignite and siderite T.D.: 58'	23'- 29' Clay, ligh 29'- 32' Sand, li 32'- 59' Clay, gra	ight gray, very fine
137'-155' Clay, gray, with very sand and silt, slightly ceous			fine sand	ght buff, with very and silt lght gray, very fine
155'-170' Clay, gray-brown, with fine sand and silt, sli micaceous T. D.: 170'	ghtly Location: County:	No. 545. Elevation 270' SE¼, Sec. 27, T. 8 S., R. 15 W. Dallas y: T. Y. Suen 8/78.	sand and 68'- 74' Sand, li slightly n	ray, with very fine silt ight gray, very fine, micaceous ark gray, with very
Drill Hole No. 542. Elevation 460'		Sand and clay, buff-gray, very fine, silty	fine sand 120'-144' Clay, ch	d and a trace of lignite ocolate brown, slightly
Location: NW¼, Sec. 3, T. 8 S., R. 1 County: Dallas	5 W.	Clay, gray-brown, with very fine sand and silt, slightly micaceous	a trace o	ht greenish-brown, with f glauconite
0'- 18' Gravel and sand, large p		Sand, very fine, silty, with a trace of lignite T. D.: 150'	T. D.: 15	
to large pea T. D.: 18'		No.546. Elevation 265'		Elevation 348' c. 13, T. 9 S., R. 15 W.
Drill Hole No. 543. Elevation 345' Location: SW¼, Sec. 10, T. 8 S., R. 1	Location: County:	SW¼, Sec. 34, T. 8 S., R. 15 W.	County: Dallas Logged by: T. Y. S	Suen 8/78.
County: Dallas Logged by: T.Y.Suen	8/78.	Clay, buff to brown, with	4'- 8' Pea grave 8'- 15' Clay, b	el, large ouff to light brown
0' 7' Clay, gray-brown, with fine sand and silt		Clay, buff to brown, with very fine sand and silt Clay, buff, with very fine sand and silt	fine san 35'- 44' Clay, ligh	ark buff, with very nd, slightly micaceous ht gray, with very fine
7'- 19' Sand, very fine, silty 19'- 24' Lignite, black, hard 24'- 26' Clay, chocolate brown	15′- 20′ 20′-149′	Clay, gray, with small pea gravel and very fine sand	44'- 47' Sand, li slightly n	silt, slightly micaceous ight gray, very fine, nicaceous
26'- 30' Lignite, black, hard 30'- 32' Clay, chocolate brown, lig 32'- 42' Clay, gray-brown		with a trace of lignite Clay, gray, with very fine	fine, sligh 85'-100' Clay, ligh	d clay, light gray, very htly micaceous ht gray, with very fine
42'- 48' Sand 48'- 60' Clay, buff to light br with very fine sand and		sand and silt T. D.: 150'	100'-150' Clay, da very fin	phtly micaceous ark greenish-gray, with e sand, slightly mica- nd a trace of siderite
Core Interval 20' - 26'6"		No. 547. Elevation 280' SE¼, Sec. 3, T. 9 S., R. 15 W.	T. D.: 15	
Recovered:	Lost: County:	Dallas y: T. Y. Suen 8/78.	Drill Hole No. 550. Location: SW¼, Sec County: Dallas	Elevation 340' :. 24, T. 9 S., R. 15 W.
20' - 20'2" clay, buff		Sand, reddish brown, very fine, slightly micaceous	Logged by: T.Y.S	uen 9/78.
20'2'' - 21'2'' lignite, soft 21'2'' - 22'1'' clay, choc brown, lignitic		fine sand and silt, slightly micaceous		ray-brown, with very nd and silt, slightly us
22'1'' - 23'1'' lignite, b hard 23'1'' - 26'6'' not reco		Sand, light gray, very fine, slightly micaceous, slightly car- bonaceous	6'- 26' Clay, b with ver	uff to light brown, ry fine sand and silt, micaceous and a trace
Core Interval 26'6" - 30'	80′-144′		of lignite 26'- 30' Clay, da	
Recovered:	Lost: 144'-144' 144'10''-1 9''	10" Lignite, black, hard 155' Sand, light gray, very fine, slightly micaceous	micaceou 30'- 63' Clay, gro	us eenish-gray, with very
26'6" - 27'4" clay, choc brown	155'-156' olate 156'-165'	Lignite, black, hard Sand, light gray, very fine,	micaceou 63'- 66' Sand, Ii	ight gray, very fine
27'4" - 29'11" lignite, b hard 29'11" - 30' clay, lig		very fine, and a trace of lignite	fine sand 86'-115' Sand, Ii	ray-brown, with very , micaceous ight gray, very fine
T. D.: 60'	nitic 177′-180′	Silt, with very fine sand, and a trace of lignite T. D.: 180'	115'-127' Clay an	d silt, greenish-gray, micaceous and a trace

127'-128'	Sand, light gray, very fine		lignite	129'-136'	Cile Habe brane
128'-139'	Clay and silt, greenish gray,	18' 20'		136'-140'	Silt, light brown Clay, light gray brown, with
	with very fine sand, mica-		with very fine sand and silt,		a trace of very fine sand and
139'-150'	ceous, with a trace of lignite	201 201	slightly micaceous		slit
139 - 150	Clay, light greenish-gray, with very fine sand, slightly mica-	20' 29'	Clay, dark gray, with very fine sand and slit, micaceous	140′ 148′	Clay, light greenish gray, with
	ceous and a trace of lignite	29'- 39'	Clay, light green, with very		a trace of very fine sand and silt
	T. D.: 150'		fine sand and silt, slightly	148'-150'	Clay, light chocolate brown,
		00/ 40/	micaceous		lignitic
Drill Hole	No. 551. Elevation 360'	39'- 43' 43'- 47'	Clay, light gray, slightly silty Clay, very light green, slightly	150′-156′ 156′-160′	Silt, light brown
Location:	NW¼, Sec. 30, T. 9 S., R. 14 W.		silty	150 -100	Clay, medium greenish-gray, with a trace of very fine sand
County: E		47'- 54'	Clay, light gray		and silt
Logged by	: T. Y. Suen 9/78.	54'- 56'	Clay, chocolate brown, with a		T. D.: 160'
0'- 6'	Clay, mottled, sandy, fine to	56'- 64'	trace of lignite Clay, light greenish-gray		
	very fine	64'- 67'	Clay, dark greenish-gray, with		
6'- 8' 8'- 12'	Gravel, small to large pea Clay, mottled light gray, with		very fine sand and silt, mica-		No. 557. Elevation 300'
0 - 12	fine to very fine sand	67′-150′	ceous Clay, dark gray, with very fine	Location: County: E	SW¼, Sec. 18, T. 10 S., R. 13 W.
12'- 40'	Sand, salt and pepper, fine,	0, 100	sand and silt, micaceous, with		: T. Y. Suen 9/78.
	slightly micaceous with minor		a trace of lignite throughout	,	
40'- 55'	limonite and hemotite stringers Clay, gray, silty		T. D.: 150'	0'- 15'	,,,
55'- 64'	Clay, light greenish-gray, with			15'- 25'	ceous, with a trace of limonite Clay and sand, light buff, very
	very fine sand and silt, slightly	Drill Hole	No. 555. Elevation 310'	13 - 23	fine, micaceous
64'-125'	micaceous	Location:	SE¼, Sec. 10, T. 10 S., R. 14 W.	25'- 80'	Clay and sand, dark gray, very
64 -125	Clay, dark gray, with very fine sand and silt, slightly micaceous	County: E		00/445/	fine, micaceous
	and a trace of lignite	Logged by	: T. Y. Suen 9/78.	80'-115'	Clay and sand, dark greenish-
125′-150′	Sand, very fine, with a trace of			115'-130'	gray, very fine, micaceous Clay, dark gray, silty, mica-
	lignite	0'- 3'	Sand and clay, mottled		ceous, with very fine sand
	T. D.: 150'	3'- 4' 4'- 8'	- Targo pou	130′-146′	Clay, light gray-brown, silty,
		4 - 0	Clay, light brown, with very fine sand and silt, micaceous		slightly micaceous, with a trace of lignite
	No. 552. Elevation 350'	8'- 10'	Clay, dark gray-brown, with	146'-150'	Clay, gray, slightly silty
Location: County: D	NW¼, Sec. 32, T. 9 S., R. 14 W.		very fine sand and silt, mica-		T. D.: 150'
	: T. Y. Suen 9/78.	10'- 29'	Clay and send deals are		
		10 - 29	Clay and sand, dark gray, very fine, micaceous	Drill Hole	No. 558. Elevation 245'
0'- 5'	,, , ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	29'- 36'	Clay, dark gray, with very fine	Location:	SE¼, Sec. 17, T. 10 S., R. 13 W.
5'- 6'	Gravel small to large	001 771	sand and silt, micaceous	County: D	Dallas
6'- 10'	Gravel, small to large pea Clay, light buff, with very fine	36'- 77'	Sand, greenish-gray, very fine,	Logged by	: T. Y. Suen 9/78.
	sand		micaceous, with a trace of lignite		
10'- 16' 16'- 20'	Clay, light brown	77'- 87'	Clay, light buff to dark green,	0'- 25'	Sand, white, medium to fine
20'- 27'	Clay, dark brown, lignitic Clay, greenish-gray, slightly silty		with very fine sand, micaceous	25'- 28'	Clay, orange, with very fine
27'- 34'	Sand, very fine	87'-150'	and a trace of lignite Clay, dark gray-brown, with	28'- 30'	sand and silt, slightly micaceous
34'- 37'	Clay, greenish-gray	-,	very fine sand and silt, slightly	20 - 30	Clay, dark gray, with very fine sand and silt
	T. D.: 37'		micaceous	30'- 32'	Clay, dark gray-brown
			T. D.: 150'	32'- 34'	Clay, chocolate brown, lignitic
Drill Hole I	No. 553. Elevation 320'			34'- 37'	with a trace of lignite Clay, light green, with very
Location: County: B	SE¼, Sec. 5, T. 10 S., R. 14 W.	Drill Hole	No. 556. Elevation 345'	0. 0,	fine sand and silt, slightly
	: T. Y. Suen 9/78.	Location: County: E	SE¼, Sec. 14, T. 10 S., R. 14 W.		micaceous
	3,7.3.		: T. Y. Suen 9/78.	37'- 70'	Silt, light buff to light brown,
0'- 34'	Clay and sand, mottled light				with very fine sand and a trace of lignite
	brown, very fine, slightly mica- ceous, with a trace of pea gravel	0'- 5'	Clay, dark buff, with very	70'- 92'	Clay, light green, with a trace
34'-115'	Clay, dark gray, with light huff	5'- 15'	fine sand, slightly slity Clay, dark buff, with very	92'- 93'	of very fine sand and silt
	clay stringers, slightly silty and a		fine sand and silt	93'-107'	Clay, chocolate brown, lignitic Clay, light greenish-gray
115′-118′	trace of siderite	15'- 20'	Clay, medium gray	107'-120'	Clay, light brown, with a trace
110 -110	Clay, greenish-gray, slighlty silty and micaceous	20'- 25' 25'- 40'	Clay, dark gray-brown		of very fine sand and silt,
118'-150'	Clay, dark gray, slightly silty	25 - 40	Clay, light greenish-gray, with very fine sand and silt	120'-123'	slightly micaceous
	and micaceous	40'- 46'	Clay, dark gray	120-125	Clay, light green, with very fine sand and silt, slightly
	T. D.: 150'	46'- 48'	Clay, dark chocolate brown,		micaceous
		48'- 80'	lignitic Clay, medium greenish-gray,	123′-130′	Clay, chocolate brown, lignitic
Drill Hole P	No. 554. Elevation 330'	40 00	slightly silty	130′-150′	with a trace of lignite Silt, light brown, with a trace
Location: I County: D	NE¼, Sec. 9, T. 10 S., R. 14 W.	80'- 96'	Clay, gray, with a trace of very		of very fine sand
	T. Y. Suen 9/78.	96'- 98'	fine sand and silt		T. D.: 150'
		20 - 88,	Clay, dark chocolate brown, lignitic with a trace of lignite		
0'- 14'	Clay, light buff to brown,	98'-110'	Clay, gray-brown, slightly silty	Drill Hole I	No. 559. Elevation 300'
	slightly silty and micaceous.	110'-125'	Clay, light greenish-gray	Location:	SE¼, Sec. 21, T. 10 S., R. 13 W.
14'- 18'	with minor limonite interbeds Clay, chocolate brown, with	125′-128′	Clay, dark gray-brown, slightly	County: D	allas
, ,	very fine sand and silt, slightly	128'-129'	carbonaceous Clay, light chocolate brown,	Logged by:	: T. Y. Suen 9/78.
	micaceous, with a trace of	120	lignitic, with a trace of lignite	0'- 17'	Clay, mottled light buff
			,	J - 17	Gray, mothed fight bull

		ARKANS	AS LIGNITE INVESTIGATIONS		
17'- 19'	Clay, dark gray, slightly silty		micaceous and a trace of lignite		fine to very fine, with a trace
19'- 20'	Clay, chocolate brown, slightly	103'-110'	Silt, dark chocolate brown		of lignite
20'- 21'	silty Lignite, with dark chocolate brown lignitic clay	110′-130′	Clay, dark chocolate brown, with very fine sand and silt, micaceous	122′-155′	Clay, dark brown, with very fine sand and silt, slightly micaceous and a trace of lignite
21'- 28' 28'- 32'	Clay, light chocolate brown Clay, light greenish-gray, slightly	130'-145'	Silt, dark chocolate brown	155′-162′	Silt and sand, light brown, very
32'- 38'	silty and micaceous Clay, dark buff, with very fine	145′-150′	Sand and clay, dark gray-brown, very fine, micaceous T. D.: 150'	162′-164′6	fine '' Clay and silt, dark gray, with very fine sand and a trace of
38'- 42'	sand and silt, slightly micaceous		7. 2 700		siderite
	Sand, brown, fine to very fine, micaceous		No. 562. Elevation 300'		T. D.: 164'6"
42'- 43'	Clay, gray-brown, with very fine sand and silt, micaceous	Location: County: (NE¼, Sec. 16, T. 8 S., R. 17 W.	Drill Hole	No. 566. Elevation 300'
43'- 44'	Lignite, with dark brown lignitic clay		7: T. Y. Suen 9/78.		SE¼, Sec. 19, T. 8 S., R. 16 W.
44'- 58'	Clay and sand, light greenish- gray, fine to very fine, mica- ceous	0'- 3' 3'- 20'			: T. Y. Suen 9/78. Sand and clay, light buff to
58'- 64' 64'- 69'	Clay, light brown	20'- 30'	Clay, brown, with very fine		light orange-brown, very fine
04 - 69	Clay, dark gray, with very fine sand and silt, slighlty micaceous	30'- 60'	sand and silt, micaceous, with a trace of siderite Clay, dark gray to very light	25'- 45' 45'- 60'	Clay, gray, with very fine sand and silt, slightly micaceous Clay, dark gray, with very fine
69'- 72' 72'- 96'	Clay, brown, slightly silty Clay, light greenish-gray, with	00 - 00	green, with very fine sand and silt, micaceous	45 - 00	sand and silt, slightly micaceous, with a trace of lightle
96'- 97'	very fine sand and silt	60'- 90'	Clay, dark brown, with very fine sand and silt, micaceous	60'- 75'	Sand and silt, light gray, very
	Clay, brown, with a trace of very fine sand and silt	90′-100′	Clay, dark gray-brown, with	75'-154'	fine, slightly micaceous Sand, light gray, very fine,
97′-124′	Clay, gray, with very fine sand and silt		very fine sand and silt, slightly micaceous	154'-156'	slightly carbonaceous Clay, light chocolate brown,
124′-128′	Clay, light buff to gray, slightly silty	100′-128′	Clay, dark brown, with very fine sand and silt, micaceous	156′-158′	lignitic Lignite, black, soft
128'-138'	Clay, medium gray, with very	100/ 110/	and a trace of lignite	158'-161'	Siderite
138′-150′	fine sand and silt, micaceous Clay, greenish-gray, with very	128′-140′	Silt, dark brown, highly mica- ceous	161′-170′	Silt, gray-brown, with a trace of lignite
	fine sand and silt, micaceous T. D.: 150'	140′-150′	Clay, dark brown, with very fine sand and interbedded silt,		T. D.: 170'
Drill Hole I	No. 560. Elevation 260'		micaceous T. D.: 150'	Location:	No. 567. Elevation 310' SE¼, Sec. 29, T. 8 S., R. 16 W.
Location:	SW¼, Sec. 18. T. 8 S., R. 17 W.			County: D Logged by	: T. Y. Suen 9/78.
County: E Logged by	eallas : T. Y. Suen 9/78.		No. 563. Elevation 285' NW¼, Sec. 23, T. 8 S., R. 17 W.	0'- 10'	Sand, light red, very fine,
0'- 5'	Gravel, small pea to small	County: I		10'- 20'	slightly micaceous Clay, gray mottled reddish
5'- 6'	pebble Clay, limonite stained, slightly	0'- 38'		20'- 50' 50'- 65'	Sand, white, fine to very fine Clay, dark gray-brown, with
6'- 12'	micaceous Clay, dark buff, slightly silty		white clay stringers, fine to very fine		very fine sand and silt, slightly micaceous
12'- 44'	Clay, dark chocolate brown, slightly silty and micaceous,	38'- 58'	Sand and silt, light orange- brown		"Lignite, black, hard Silt, brown, with a trace of
44'- 50'	with 3" of siderite Clay and sand, dark gray-brown,	58'- 93'	Sand and silt, light buff-white, very fine, with 3" of siderite	80′-100′	lignite
	very fine to fine, micaceous	93'-108'	Sand and silt, dark gray, fine	80 - 100	Clay, gray-brown, with very fine sand and silt, slightly
50'- 55'	with a trace of glauconite Clay, dark chocolate brown,		to very fine, micaceous, with 3" of siderite	100'-150'	micaceous with 3" of siderite Silt, gray-brown, with very
5 5 ′- 7 5′	with a trace of lignite Clay, dark gray-brown, silty,	108′-150′	Clay and sand, dark greenish- gray, very fine, highly mica-		fine sand T. D.: 150'
	micaceous T. D.: 75'		ceous and a trace of siderite T. D.: 150'	Drill Hole	No. 568. Elevation 243'
				Location:	NW¼, Sec. 33, T. 8 S., R. 16 W.
Drill Hole I	No. 561. Elevation 330' SW¼, Sec. 17, T. 8 S., R. 17 W.		No. 564. Elevation 195'	County: [Logged by	T. Y. Suen 9/78.
County: D	allas	Location: County: [NE¼, Sec. 24, T. 8 S., R. 17 W. Dallas	0'- 7'	Sand, red, fine to very fine
	: T. Y. Suen 9/78.	Logged by	v: T. Y. Suen 9/78.	7'- 10'	Clay, buff to dark gray, silty, with very fine sand, slightly
0'- 5'	Clay, dark orange-red, with very fine sand and silt	0'- 4'	Clay, light orange-brown, with very fine sand and silt, slightly	10'- 20'	micaceous Sand and clay, dark brown,
5'- 6'	Clay, bright orange, limonite stained	4'- 20'	micaceous	10 - 20	very fine, with a trace of lig-
6'- 18'	Clay, white, with very fine sand and silt, slightly mica-	4 - 20	Gravel and sand, small pea T. D.: 20'	20'- 28'	nite Clay and sand, light chocolate brown, very fine, with a trace
18′- 26′	ceous Clay, dark chocolate brown, with very fine sand and silt,		No. 565. Elevation 265' SE¼, Sec. 24, T. 8 S., R. 17 W.	28'- 43'	of lignite Clay, light gray-brown, silty, slightly micaceous
26'- 33'	micaceous Clay, light gray-brown, with	County: [43′- 74′ 74′- 80′	Sand, white, very fine Silt, gray, with very fine sand,
20/ 100:	very fine sand and silt, mica- ceous	0'- 45'	Sand, red, very fine, with	80′-110′	slightly micaceous Sand, white, very fine, silty,
33′-103′	Clay, dark chocolate brown, with very fine sand and silt,	45'-122'	clay binder Sand and clay, gray to buff,	110′-111′	with a trace of lignite Lignite, black, hard

111′-135′	Silt and very fine sand, gray- brown, with a trace of lignite	136′-137′	silty, with a trace of lignite Lignite, black, soft	18'- 30'	Clay, chocolate brown, with very fine sand and silt, slightly
135′-147′	Silt, light gray, with a trace of lignite	137′-150′	Sand and clay, dark gray, very fine, silty, slightly micaceous	30'- 40'	micaceous
	T. D.: 147'		with a trace of lignite	40'- 50'	Silt, dark brown Clay and silt, dark brown, with
			T. D.: 150'	50'- 75'	very fine sand, micaceous Clay, dark chocolate brown,
	No. 569. Elevation 270'	D-311 11-1-	N - 570 5	00 75	with very fine sand and silt,
County: E	SE¼, Sec. 27, T. 8 S., R. 16 W. Dallas		No. 572. Elevation 250' SE¼, Sec. 33, T. 8 S., R. 15 W.		micaceous, and a trace of ligni- tic clay
Logged by	: T. Y. Suen 9/78.	County: [Dallas	75′- 85′	Clay and silt, chocolate brown,
0'- 4'	Sand and clay, red, very fine,		: T. Y. Suen 9/78.	85′-115′	micaceous Clay, gray-brown, silty, mica-
4'- 6'	silty Gravel, small pea	0'- 8'	Gravel, small pea to large pebble	115′-135′	ceous
6'- 7'	Clay, light buff, with very	8'- 80'	Sand, white, very fine, with		Silt, chocolate brown, mica- ceous, with a trace of lignite
	fine sand and silt, slightly micaceous	80′-130′	thin buff clay interbeds Clay and silt, dark gray, with	135′-160′	Silt and sand, light gray-brown, very fine, micaceous, with a
7'- 25' 25'- 50'	Sand, white, very fine Clay, white to buff, with very		very fine sand and approxi-		trace of siderite
	fine sand, slightly silty		mately 10" of black, soft lignite		T. D. 160'
50'- 65'	Silt and sand, with a trace of lignite	130′-150′	Sand, light brown, very fine,	Daill Hala	N. ETC EL
65'- 85'	Clay and sand, dark gray, very		silty, with a trace of lignite T. D.: 150'		No. 576. Elevation 185' SE¼, Sec. 7, T. 9 S., R. 17 W.
85'- 98'	fine, silty, with a trace of lignite Clay, chocolate brown, lignitic,			County: [Dallas
	with very fine sand and silt,			Logged by	T. Y. Suen 10/78.
	slightly micaceous, with a trace of lignite		No. 573. Elevation 285' SE¼, Sec. 19, T. 8 S., R. 17 W.	0'- 3'	Sand and clay, reddish orange,
98′- 100 ′	Clay, dark gray, with very fine	County: E	Dallas	3'- 30'	very fine Gravel, small pea to large pebble
100'-128'	sand and silt, slightly micaceous Sand and silt, light brown, very	Logged by	: T. Y. Suen 9/78.	30'- 57'	Clay, chocolate brown, mica- ceous
	fine, with a trace of lignite and lignitic clay	0'- 3'	grand, contain to far go	57'- 70'	Silt and sand, dark chocolate
128'-145'	Silt and sand, light brown, very		pebble, with fine to very fine sand		brown, very fine, micaceous and a trace of lignite
145'-16 0 '	fine, with a trace of lignite Sand, white, with a trace of	3'- 10'	in the state of th	70′- 71′	Lignite, black, hard
	lignite	10'- 13'	very fine Gravel, large pebble	71′- 95′	Clay and sand, dark chocolate brown, very fine, micaceous
	T. D.: 160'	13'- 18'	Clay, buff-white, with very fine sand and silt, slightly	95'- 98'	Clay, dark gray, with very fine
Drill Hole I	No. 570. Elevation 295'	401 051	micaceous	98'-117'	sand and silt, micaceous Silt, dark chocolate brown, with
Location:	NW¼, Sec. 36, T. 8 S., R. 16 W.	18'- 95'	Clay, brown, with very fine sand and silt, micaceous		very fine sand, micaceous, and
County: D	Pallas	95′-110′	Clay, light greenish-gray, with	117'-123'	a trace of lignite Clay, dark gray-brown, with
			very fine sand and silt, mica- ceous		very fine sand and silt, mica- ceous
0'- 5'	Clay and sand, mottled red, very fine	110′-125′	Clay, gray-brown, with very	123'-150'	Silt, dark brown, with very fine
5'- 20'	Clay, buff to gray,	125'-145'	fine sand and silt, micaceous Clay, brown, with very fine		sand, micaceous, and a trace of lignite
20'- 27' 27'- 39'	Clay, gray-brown Clay, dark greenish-gray	145'-148'	sand and silt, micaceous		T. D.: 150'
39'- 45'	Clay, dark greenish-gray, with	145-146	Clay and sand, light greenish- gray, very fine, slightly glauco-		
	interbedded, thin chocolate brown clay		nitic, micaceous, with a trace of siderite	Drill Hole	No. 577. Elevation 160'
45'- 55' 55'- 60'	Clay, light greenish-gray		T. D.: 148'	County: E	NW¼, Sec. 20, T. 9 S., R. 17 W.
	Clay, light greenish-gray, with thin interbedded, very fine sand			Logged by	: T. Y. Suen 10/78.
60'- 80' 80'-115'	Sand, white, very fine Sand, light buff-mottled red,	Drill Hole	No. 574. Elevation 210'	0'- 26'	the state of the s
	very fine, with thin buff clay	County: D	NW¼, Sec. 31, T. 8 S., R. 17 W.	26'- 40'	very fine Gravel, small pea to large
115'-148'	interbeds Sand, and silt, light gray-brown,	Logged by	: T. Y. Suen 10/78.	40'- 58'	pebble
	very fine, with a trace of lignite	0'- 23'	Sand and clay, light orange, very		Clay, chocolate brown, silty, micaceous, with 5" of siderite
	and siderite T. D.: 148'	23'- 35'	fine Gravel, small pea to small	58'- 97'	Silt, chocolate brown, with very fine sand, micaceous, and
		35'- 46'	pebble		a trace of lignite
Drill Hala N	No. 574 . 51	39 - 46	Sand, light orange, very fine, slightly micaceous, with	97′- 140 ′	Silt and sand, chocolate brown, very fine, with a trace of lignite
Location:	No. 571. Elevation 265' NW¼, Sec. 32, T. 8 S., R. 15 W.	46'- 85'	approximately 2" of lignite Clay, chocolate brown, silty,	140′-150′	Silt, chocolate brown, and
County: D	allas		slightly micaceous		approximately 1' to 2' of lignite T. D.: 150'
			T. D.: 85'		
0. 6'	Sand, gray, very fine, slightly micaceous	Drill Hala	No. 575. Elevation 205'	Drill Hole I	No. 578. Elevation 160'
6'- 8'	Clay and sand, gray, slightly	Location:	NE¼, Sec. 6, T. 9 S., R. 17 W.	Location: County: D	NE¼, Sec. 29, T. 9 S., R. 17 W.
8'- 30'	micaceous Sand, light gray, very fine	County: D	allas : T. Y. Suen 10/78,		T. Y. Suen 10/78.
30'- 55'	Sand, light gray, very fine, with			0'- 2'	Sand and clay, light orange,
mm/	thin interbedded yellow, buff, silty clay interbeds	0'- 5'	Clay and sand, buff-light brown, very fine, slightly micaceous	2'- 20'	very fine
55′-1 36 ′	Sand, light gray, very fine	5'- 18'	Gravel, large pebble to small pea	2 - 20	Clay and sand, buff-gray, very fine, slightly micaceous

20' 26'	Gravel, small pea to large		to fine, with clay binder	Drill Hole	No. 584. Elevation 142'
061 401	pebble	42' 46'	Sand, dark brown, very fine		SE¼, Sec. 27, T. 10 S., R. 17 W.
26' 40'	Clay, gray-brown, with very fine sand and silt, micaceous	46' 62'	to fine, with clay binder Clay, dark gray-brown, with	County: E	Dallas : T. Y. Suen 10/78.
40'-150'	Sand and silt, brown, very	40 02	very fine sand and silt, mica-	rodden by	. 1. 1. 3001
	fine, with a trace of pea gravel		ceous	0'- 9'	Clay, buff-white, with very fine
	and lignite	62'- 70'		0/ 11/	sand and silt, iron stained
	T. D.: 150'	70'- 75'	very fine, slightly micaceous Clay and silt, dark gray, with	9'- 11'	Clay and sand, red, very fine, silty
		70 - 73	very fine sand, slightly mica-	11'- 25'	Sand, with small pea gravel
	No. 579. Elevation 280'		ceous	25'- 37'	Gravel, small to large pebble
Location: County: D	SW¼, Sec. 33, T. 8 S., R. 17 W.	75′-115′		37'- 75'	Clay, dark gray-brown, with
	v: T. Y. Suen 10/78.		fine sand. slightly silty, mica- ceous and a trace of lignite		very fine sand and silt, finely micaceous, slightly carbona-
		115'-135'	Sand, with dark greenish-gray		ceous, with 7" of siderite
0'- 1' 1'- 5'			clay binder, very fine, slightly		T. D.: 75'
1 - 5	Sand and gravel, small pea, dark red, very fine to fine	135′-150′	glauconitic and micaceous Clay, light to dark brown,	Drill Hole	No. 585. Elevation 125'
5'- 8'	Gravel, small pea to small	100 -100	with a trace of very fine sand,		NE¼, Sec. 3, T. 11 S., R. 17 W.
01 001	pebble, with 4" of siderite		slightly micaceous	County: C	Duachita
8'- 20'	Sand, very fine, with limonite and small pea gravel interbeds		T. D.: 150'	Logged by	r: T. Y. Suen 10/78.
20'- 38'	Sand, orange, very fine, carbon-			0'- 3'	Sand, white, very fine, slight-
	aceous, slightly silty	Drill Hole	No. 582. Elevation 150'	0 0	ly micaceous
38'- 48'	Clay, buff-white, with very fine		SE¼, Sec. 9, T. 10 S., R. 17 W.	3'- 7'	Sand, with light brown clay
	sand, slightly micaceous and carbonaceous	County: D	oallas v: T. Y. Suen 10/78.	7'- 10'	binder, slightly micaceous
48'- 49'	Sand, dark reddish black, iron	Logged by	7. 1. 1. Suen 10/78.	7 - 10	Sand, white, fine, slightly mica- ceous
401	cemented	0'- 47'		10'- 17'	Sand, light yellow, iron stained,
49'- 70'	Clay, dark brown, with very fine sand and silt, slightly	471 601	to medium sand, iron stained	47/ 05/	fine, slightly micaceous
	micaceous and a trace of lignite	47'- 62'	Clay, dark brown, finely mica- ceous	17'- 25'	Sand and gravel, fine, small pea to large pebble
70'- 95'	Clay and silt, chocolate brown,	62'- 75'	Clay, dark gray-brown, finely	25'- 40'	Sand, medium to fine, iron
	with very fine sand, micaceous		micaceous, with a trace of glau-		stained
	and a trace of lignite and 5" of siderite	75'- 82'	conite Clay, dark gray-brown, with	40′- 46′	Sand, dark gray, fine, slightly
95'-1 0 5'	Sand, gray-brown, with clay	75 02	very fine sand and silt, finely	46'- 64'	micaceous Clay, dark gray, slightly mica-
405/440/	binder, silty, micaceous		micaceous		ceous
105′-110′	Clay, dark brown, with very	82′- 89′	Clay, light gray, finely mica-	64'- 73'	Clay, light gray, slightly silty
110'-150'	fine sand, silty, micaceous Silt, dark brown, with very	89'- 96'	ceous Sand, dark gray, very fine to		and micaceous, with a trace of glauconite
	fine sand, micaceous, and	00 00	fine, slightly micaceous	73'- 78'	Sand, with gray clay interbeds,
	thin brown clay stringers	96′-15 0′	Clay, brown, slightly silty,		fine, slightly micaceous, with
	T. D.: 150'		coarsely micaceous with thin very fine sand stringers	78′-100′	2" of siderite
			T. D.: 150'	78 - 100	Clay, brown, finely micaceous, slightly silty
	No. 580. Elevation 161'			100'-125'	Clay, gray-brown, finely mica-
County:	SW¼, Sec. 33, T. 9 S., R. 17 W.		No. 583. Elevation 160'		ceous, with very fine sand and
	: T. Y. Suen 10/78.	County: D	SE¼, Sec. 22, T. 10 S., R. 17 W.	125′-150′	silt, and coarse sand stringers Silt, dark gray, with medium
0, 5,			: T. Y. Suen 10/78.		sand, micaceous
0'- 5'	Clay, dark gray, with very	0/ 0/	Oleve Neter and German		T. D.: 150'
	fine sand and silt, slightly micaceous	0 - 6	Clay, light orange, finely mica- ceous	Drill Hole	No. 586. Elevation 192'
5'- 25'	Clay, buff-gray, with very fine	6′- 10 ′			SW%, Sec. 26, T. 9 S., R. 17 W.
25' 20'	sand, iron stained, micaceous		slightly micaceous	County: D	allas
25'- 30'	Gravel, large pebble to small pea, and coarse sand	10′- 13′	,	Logged by	: T. Y. Suen 10/78.
30'- 65'	Gravel, very small pea to coarse	13'- 38'	fine sand, slightly micaceous Sand, light orange, fine to very	0'- 2'	Sand, dark gray, very fine,
651 05	sand, with 3" of siderite		fine, slightly micaceous		slightly micaceous
65'- 9 0 '	Silt, light brown, with small	38'- 40'	Sand and gravel, light brown,	2'- 17'	Sand, light orange, very fine
	pea gravel T. D.: 90'	40'- 50'	medium to coarse, small pea Gravel, small pea, with medium		with clay binder, slightly mica-
		40 - 50	to fine sand, iron stained	17'- 55'	ceous Gravel, large pebble, with very
Dvill Hala	No E94 51 11 1501	50'- 80'	Clay, dark gray-brown, finely		fine sand
Location:	No. 581. Elevation 156' SW¼, Sec. 4, T. 10 S., R. 17 W.		micaceous, with very fine sand	55'- 9 0 '	Clay, dark gray-brown, with
County: [Dallas	80'- 95'	and silt, and 3" of siderite Clay, dark gray, finely mica-		very fine sand and silt, finely micaceous, with a trace of
Logged by	: T. Y. Suen 10/78.		ceous, with a trace of glau-		glauconite and 5" of siderite
0'- 3'	Sand, light reddish brown, very	05/ 100/	conite	90'-102'	Sand, dark gray-brown, with
-	fine, slightly silty	95′-1 0 8′	Clay, light brown, with very fine sand and silt, finely mica-		clay binder, very fine, glau- conitic
3'- 12'	Clay and sand, light reddish		ceous	102'-120'	Clay, dark brown, with very
12'- 25'	orange, very fine	1 0 8′-115′	Sand, dark gray, very fine,		fine sand and silt, finely mica-
12 - 25	Clay and sand, buff-white, very fine, slightly micaceous	115′-140′	coarsely micaceous Clay, dark gray-brown, with		ceous, glauconitic, with 2" of
25'- 33 '	Sand, fine to very fine, iron	110-140	very fine sand and silt, finely	120'-122'	siderite Sand, light greenish-gray, fine,
33'- 35'	stained		micaceous		glauconitic, slightly micaceous
35'- 40'	Gravel, large pebble Gravel, small pea, with coarse	140′-150′	Sand and clay, dark greenish-	122'-135'	Clay and sand, dark greenish-
	sand		gray, very fine, finely mica- ceous and a trace of glauconite		gray, very fine, slightly mica- ceous, with a trace of glauconite
40'- 42'	Sand, light brown, very fine		T. D.: 150'		T. D.: 135'

Drill Hole No. 587. Elevation 250' Location: SW4, Sec. 36, T. 9 S., R. 17 W. County: Dallas Logged by: T. Y. Suen 10/78. Soil, black, loam Sand, very fine, with red clay binder, slightly micaceous 6'- 10' Gravel, large pebble Clay, red, with thin inter-10'- 20' bedded white clay seams, slightly micaceous Sand, light orange, with clay binder, very fine, slightly mica-20'- 25' ceous Sand, gray, with silt binder, very fine, finely micaceous Clay, gray, silty, with a trace of lignite and siderite 25'- 30' 30'- 70' 70'- 77' Clay, buff-white, slightly silty, with a trace of lignite Sand, gray, fine to very fine, 77'- 95' slightly micaceous, with a trace of lignite Clay gray, slightly micaceous Lignite, black, hard 95'- 97' 97'-**103**' 103'-110' Sand, gray, very fine, finely micaceous 110'-118' Clay, gray, with very fine sand and silt, finely micaceous 118'-121 Lignite, black, soft Clay, buff-gray, with very fine sand and silt, slightly mica-121'-122' ceous 122'-124' 124'-130' 130'-137' Lignite, black, soft Clay, dark brown, lignitic Clay, lignitic, with approxi-mately 2" of lignite Clay, light buff-brown, with very fine sand and silt, slightly 137'-140' micaceous Sand, very fine, with white clay binder, slightly micaceous 140'-167' Clay, dark overy fine sand gray-brown, with 167'-170' Core Interval 97' - 107'

Recovered:

30"

Lost: 90"

97' - 98' lignite, black, hard 98' - 98'7'' lignite, black, soft 98'7'' - 99'6'' clay, lignitic 99'6'' - 107' not recovered

Note: Driller's log indicated 7' of lignite penetrated

T. D.: 170'

Drill Hole No. 588. Elevation 270' Location: SW1/4, Sec. 5, T. 10 S., R. 16 W. County: Dallas Logged by: T. Y. Suen 10/78.

0'- 50' Gravel and sand, small pebble, fine to very fine, iron stained Clay, white, with very fine sand and silt, and a trace of lighte

Clay, dark gray-brown, with very fine sand and silt, finely micaceous, and a trace of lignite 60' 72'

Silt, with dark gray clay stringers, very fine sand, finely micaceous, with a trace of lig-72'- 85'

85'- 90' Clay, light greenish-gray, with very fine sand and silt, slightly micaceous, and a trace of lignite

90'-114' Sand, very fine, finely mica-ceous, silty, and a trace of lig-

Clay, dark gray, with very fine sand and silt, slightly micaceous 114'-120' and 2" of siderite

Sand, dark gray, very fine, silty, slightly micaceous 120'-125'

Silt and sand, dark gray, finely micaceous, with a trace of lignite and lignitic clay 125'-138'

138'-150' Sand and silt, gray, very fine, slightly micaceous T. D.: 150'

Drill Hole No. 589. Elevation 300' Location: NE¼, Sec. 22, T. 10 S., R 16 W. County: Dallas Logged by: T. Y. Suen 10/78

Gravel, small pea to large pebble, with thin, red sandy clay interbeds 0'- 6'

6'- 16' Clay and silt, red, with very fine sand

16'- 17' Gravel, small pea to small

pebble, iron stained Sand, light red, very fine to fine Clay, light red, with very fine 17'- 19' 19'- 22'

22'- 23' 23'- 35' Gravel, small pebble Clay, light red, very fine sand,

slightly micaceous 35'- 50' 50'- 59' Gravel, small pea Clay, white-buff, with very fine sand and silt

Clay, gray-brown, with very fine sand and silt, slightly micaceous, 59'- 9**0**'

with a trace of lignite 90'-105' Silt, dark gray, with very fine sand, slightly micaceous, with approximately 4" of siderite 105'-121'

Clay, dark gray, with very fine sand and silt, slightly micaceous 121'-135' Sand, dark gray, very fine, silty, slightly micaceous

135'-140' Silt and clay, white to buff, slightly micaceous

140'-150' Sand and silt, dark gray, slightly micaceous

Drill Hole No. 590. Elevation 196' Location: SW¼, Sec. 36, T. 10 S., R. 16 W. County: Dallas Logged by: T. Y. Suen

0'- 7' 7'- 17' Sand, with clay binder Sand, fine to very fine, with clay binder and small pebble

17'- 24' Sand and gravel interbedded, dark gray, silty, with 3" of siderite

Clay, dark gray, with very fine sand and silt, slightly micaceous and 1" of siderite Sand, dark gray, with clay binder, slightly micaceous 24'- 55'

55'- 62'

Sand, dark brown, with diay binder, very fine, slightly mica-62' 65' ceous

Clay, gray, with very fine sand and silt, slightly micaceous, and a trace of lignite 65'-103'

103'-117' Clay, dark chocolate brown, lignitic, with very fine sand and silt, slightly micaceous and a trace of lignite

117'-135' Sand, dark tan, very fine to fine, slightly micaceous

135'-136' Lignite, black, hard

136'-150' Clay and silt, light greenish-gray, slightly micaceous T. D.: 150'

Drill Hole No. 591. Elevation 270' Location: NW%, Sec. 25, T. 10 S., R. 16 W. County: Dallas Logged by: T. Y. Suen 10/78.

Sand and gravel, light yellow-orange, fine to very fine, small pebble Sand, light red, very fine to

fine, with clay binder

Gravel, small pebble Sand, light red, very fine, with 7'- 13' clay binder

13'- 15'

15'- 18' 18'- 22'

Sand, white-orange, fine
Gravel, small pebble
Sand, light red, fine, with
clay binder

22'- 25' Clay, light orange, with very fine sand

25'- 28' Sand, light yellow, fine

Clay, light red, with very fine sand 28'- 30'

30'- 50' Sand, light yellow, fine to very fine, with clay binder

50'- 56' Gravel, large pebble, with thin sand interbeds

Drill Hole No. 592. Elevation 330' Location: NW¼, Sec. 18, T. 10 S., R. 15 W. County: Dallas Logged by: T. Y. Suen 10/78.

0'- 28' Sand, dark to light red, fine to very fine, with clay binder Sand, white to light red, fine 28'- 46'

46'- 95' Clay, white, with very fine sand, slightly silty

95'-139' Sand, white, salt and pepper, 139'-140'

fine to very fine, salt and pepper, fine to very fine, silty Limonite, with very fine sand and a trace of lignite Sand, gray, with gray clay binder, very fine, silty, slightly missessery 140'-143'

micaceous 143'-160' Clay, gray, with very fine sand

and silt, slightly micaceous, slightly carbonaceous Sand, gray, very fine to fine, with gray clay binder T. D.: 165' 160'-165'

Drill Hole No. 593. Elevation 243' Location: NW¼, Sec. 8, T. 10 S., R. 15 W. County: Dallas Logged by: T. Y. Suen

Sand, light tan, very fine

3' Clay, light orange, with very fine sand and silt

Gravel, small pebble

6'- 10' Sand, light gray to white, very

10'- 45'			micaceous	10'- 22'	Sand and gravel, coarse, with
	very fine sand and silt, slightly micaceous	100′-106′	Sand, dark gray, very fine, salt and pepper, silty, slightly mica-	22'- 30'	red clay Clay, gray, with fine to very
45′- 56′	Sand, light greenish-gray, with clay binder, slightly micaceous	106′-110′	ceous Silt, dark gray, with very fine	30'- 40'	fine sand and a trace of lignite Clay, light gray, with inter-
56'- 65'	Sand, dark gray, with clay binder, slightly micaceous, and a trace of lignite	110′-112′	sand, slightly micaceous Sand, dark gray, very fine, salt and pepper, silty, slightly mica-	40′- 50′	bedded fine sand Sand, fine, with gray clay interbeds
65′- 8 0 ′	Sand, light brown, with clay binder, slightly silty and mica-	112′-140′	ceous Silt and sand, dark gray, very	50'- 70' 70'- 80'	Sand, very fine, silty Clay, gray, with interbedded
80'- 94'	ceous, with a trace of lignite Silt and sand, light to dark gray,	140′-145′	fine Sand, dark gray, very fine,	80'- 90'	very fine sand Clay, gray, with very fine
	very fine, slightly micaceous, with a trace of lignite	145′-160′	slightly micaceous Silt and sand, dark gray, very		sand and silt, and approxi- mately 6" of lignite
94'-102'	Clay, dark gray-brown, with very fine sand and silt, slightly micaceous		fine, slightly micaceous, with a trace of lignite T. D.: 160'	90′-100′ 100′-110′	Silt, with a trace of lignite Silt with interbedded lignite and gray clay
102′-110′	Sand, dark gray-brown, with clay binder, silty, slightly mica-			110′-150′	
110′-125′	ceous Silt and sand, dark gray, very		No. 597. Elevation 260' SE¼, Sec. 33, T. 4 S., R. 13 W.		
110 120	fine, slightly micaceous, with	County: 0	Grant		No. 600. Elevation 250'
	a trace of lignite T. D.: 125'	Logged by	: T. Y. Suen 11/78.	Location: County: 0	NE¼, Sec. 24, T. 4 S., R. 14 W.
		0'- 17'	fine to fine, slightly silty,	Logged by	: Dave Lumbert 11/78.
	No. 594. Elevation 218' SW¼, Sec. 33, T. 9 S., R. 15 W.	17'- 65'	slightly micaceous Clay, dark gray, with very fine	0'- 10'	Sand, very fine, with a trace of gray clay
County: D	Dallas		sand and silt, slightly micaceous	10'- 20'	Sand, very fine
Logged by	: T. Y. Suen 10/78.	65'- 75'	and 2" of siderite Clay, light gray, slightly mica-	20'- 26' 26'- 35'	Sand, fine with pea gravel Clay, gray, with very fine sand
0'- 20'	Clay and sand, white-gray, with	,,	ceous, with approximately 6" of	35'- 40'	Sand, fine
	very fine sand and silt, slightly micaceous	75'- 78'	lignite Clay, dark brown, with very	40'- 50'	Clay, gray-brown, with inter- bedded fine sand
20'- 30' 30'- 56'	Gravel, small pea Sand, light tan, fine to medium,		fine sand and silt, slightly micaceous	50'- 60'	Clay, green, with interbedded fine sand
	with a trace of pea gravel and lignite	78′- 90′	Clay, light greenish-gray, with very fine sand and silt, slightly	60'- 80'	Sand, fine T. D.: 80'
56′ 85′	Clay, dark gray, with very fine sand and silt, slightly micaceous	90′-120′	micaceous Clay and sand, light greenish-		
85'-113'	Sand, very fine, with dark gray		gray, interbedded very fine,	Dell Hala	No. 604 - Floreston 2007
	clay binder, finely micaceous and a trace of lignite		slightly micaceous, with a trace of lignite and glauconite		No. 601. Elevation 300' NE¼, Sec. 14, T. 4 S., R. 14 W.
113′-123′	Silt, dark gray, with very fine sand, slightly micaceous	120′-128′	Clay, dark brown and light	County: 0	Grant
123'-150'	Sand, dark gray, very fine, silty,		greenish-gray interbedded, with a trace of very fine sand and	Logged by	: Dave Lumbert 11/78.
	slightly micaceous T. D.: 150'	128′-135′	silt, slightly micaceous Clay, dark green, with very fine	0'- 23' 23'- 30 '	Sand, fine, with red clay Clay, light gray, with chocolate
	1.5 100	120 -100	sand and silt, finely micaceous and a trace of glauconite	25 - 30	brown clay interbeds, and very
	No. 595. Elevation 310'	135′-145′	Clay, light green, with very	30'- 60'	Clay, gray, with very fine sand
County: E	NW¼, Sec. 27, T. 9 S., R. 15 W. Dallas		fine sand and silt, finely mica- ceous, with a trace of glauconite	60'- 70'	Clay, gray, with interbedded fine sand
Logged by	: T. Y. Suen 10/78.		T. D.: 145'	70'- 90'	Sand, fine
0'- 15'	Sand, red, very fine to fine,			90′-100′ 100′-133′	Sand, lignitic, very fine Sand, very fine
15'- 65'	slightly silty and micaceous Clay, buff-white, with very	Drill Hole	No. 598. Elevation 285'	133′-140′	Clay, glauconitic, with very
10 00	fine sand and silt, slightly		SW¼, Sec. 29, T. 4 S., R. 13 W.	140′-142′	fine sand Lignite
65'- 70'	micaceous Sand, with buff-white clay	County: (Grant: Dave Lumbert 11/78.	142′-150′	Clay, gray-brown, with inter- bedded very fine sand
	binder, very fine, silty, slightly micaceous	0'- 14'			T. D.: 150'
70′- 80′	Sand, white, very fine, slightly		Clay, light gray and red inter- bedded, with fine sand		
	salt and pepper, slightly mica- ceous	14'- 20'	Clay, medium to dark gray, with very fine sand	Drill Hole	No. 602. Elevation 331'
	T. D.: 80'	20'- 35'	Clay, gray and brown inter- bedded, with very fine sand	Location: County: 0	SE¼, Sec. 2, T. 4 S., R. 14 W.
D.::11 11-1-1	N- 500 5	35'- 50'	Sand, fine, with gray clay		: T. Y. Suen 11/78.
	No. 596. Elevation 275' SE¼, Sec. 15, T. 9 S., R. 15 W.	50′- 70′	interbeds Sand, very fine, silty	0'- 10'	Sand and alay light buff
County: D	Pallas	30 - 70	T. D.: 70'	0 - 10	Sand and clay, light buff- gray, very fine, silty
Logged by	: T. Y. Suen 10/78.			10'- 24' 24'- 45'	Clay, buff
0'- 20'			No. 599. Elevation 265'		Clay, dark gray, slightly glau- conitic
	fine, with a trace of small pebble gravel	Location: County: (SE¼, Sec. 19, T. 4 S., R. 13 W. Grant	45'- 59'	Clay, dark gray-brown, with very fine sand, coarsely mica-
20'- 35'	Sand, light greenish-gray, salt		: Dave Lumbert 11/78.		ceous
	and pepper, very fine to fine, with 4" of siderite	0'- 6'	Sand, fine	59'- 6 0 '	Clay, dark brown, with a trace of lignite
35′-1 00 ′	Clay, dark gray-brown, with very fine sand and silt, slightly	6'- 10'	Clay, light gray, with very fine sand	60'- 75' 75'- 80'	Clay, light green, slightly silty Clay, dark buff
					. ,

10'- 22'	Sand and gravel, coarse, with red clay
22'- 30'	Clay, gray, with fine to very fine sand and a trace of lignite
30′- 40′	Clay, light gray, with inter- bedded fine sand
40′ 50′	Sand, fine, with gray clay interbeds
50'- 70' 70'- 80'	Sand, very fine, silty Clay, gray, with interbedded very fine sand
80'- 90'	Clay, gray, with very fine sand and silt, and approximately 6" of lignite
90′-100′ 100′-110′	Silt, with a trace of lignite Silt with interbedded lignite and gray clay
110′-150′	Silt and gray clay T. D.: 150'
Location: County: 0	No. 600. Elevation 250' NE¼, Sec. 24, T. 4 S., R. 14 W. Grant : Dave Lumbert 11/78.
0'- 10'	Sand, very fine, with a trace of gray clay
10'- 20' 20'- 26' 26'- 35'	Sand, very fine Sand, fine with pea gravel Clay, gray, with very fine sand
35'- 40' 40'- 50'	Sand, fine Clay, gray-brown, with inter-
50'- 60'	bedded fine sand Clay, green, with interbedded
60'- 80'	fine sand Sand, fine T. D.: 80'
Location: County: (No. 601. Elevation 300' NE¼, Sec. 14, T. 4 S., R. 14 W.
Location: County: 0 Logged by	No. 601. Elevation 300' NE¼, Sec. 14, T. 4 S., R. 14 W. Grant
Location: County: (Logged by	No. 601. Elevation 300' NE¼, Sec. 14, T. 4 S., R. 14 W. Grant : Dave Lumbert 11/78. Sand, fine, with red clay Clay, light gray, with chocolate brown clay interbeds, and very
Location: County: 0 Logged by	No. 601. Elevation 300' NE¼, Sec. 14, T. 4 S., R. 14 W. Grant : Dave Lumbert 11/78. Sand, fine, with red clay Clay, light gray, with chocolate brown clay interbeds, and very fine sand Clay, gray, with very fine sand Clay, gray, with interbedded
Location: County: (Logged by 0'- 23' 23'- 30'	No. 601. Elevation 300' NE%, Sec. 14, T. 4 S., R. 14 W. Grant : Dave Lumbert 11/78. Sand, fine, with red clay Clay, light gray, with chocolate brown clay interbeds, and very fine sand Clay, gray, with very fine sand Clay, gray, with interbedded fine sand Sand, fine
Location: County: (Logged by 0'- 23' 23'- 30' 30'- 60' 60'- 70' 70'- 90'	No. 601. Elevation 300' NE½, Sec. 14, T. 4 S., R. 14 W. Grant : Dave Lumbert 11/78. Sand, fine, with red clay Clay, light gray, with chocolate brown clay interbeds, and very fine sand Clay, gray, with very fine sand Clay, gray, with interbedded fine sand Sand, fine Sand, lignitic, very fine Sand, very fine Clay, glauconitic, with very
Location: County: (Logged by 0'- 23' 23'- 30' 30'- 60' 60'- 70' 70'- 90' 90'-100' 100'-133'	No. 601. Elevation 300' NE%, Sec. 14, T. 4 S., R. 14 W. Grant : Dave Lumbert 11/78. Sand, fine, with red clay Clay, light gray, with chocolate brown clay interbeds, and very fine sand Clay, gray, with very fine sand Clay, gray, with interbedded fine sand Sand, fine Sand, lignitic, very fine Sand, very fine Clay, glauconitic, with very fine sand Lignite Clay, gray-brown, with inter-
Location: County: (Logged by 0'- 23' 23'- 30' 30'- 60' 60'- 70' 70'- 90' 90'-100' 100'-133' 133'-140'	No. 601. Elevation 300' NE%, Sec. 14, T. 4 S., R. 14 W. Grant : Dave Lumbert Sand, fine, with red clay Clay, light gray, with chocolate brown clay interbeds, and very fine sand Clay, gray, with very fine sand Clay, gray, with interbedded fine sand Sand, fine Sand, lignitic, very fine Sand, very fine Clay, glauconitic, with very fine sand Lignite
Location: County: (Logged by 0'- 23' 23'- 30' 30'- 60' 60'- 70' 70'- 90' 100'-133' 133'-140' 140'-142' 142'-150' Drill Hole Location: County: (County: County:	No. 601. Elevation 300' NE¼, Sec. 14, T. 4 S., R. 14 W. Grant Sand, fine, with red clay Clay, light gray, with chocolate brown clay interbeds, and very fine sand Clay, gray, with very fine sand Clay, gray, with interbedded fine sand, fine Sand, lignitic, very fine Sand, very fine Clay, glauconitic, with very fine sand Lignite Clay, gray-brown, with interbedded very fine sand T. D.: 150' No. 602. Elevation 331' SE¼, Sec. 2, T. 4 S., R. 14 W. Grant
Location: County: (Logged by 0'- 23' 23'- 30' 30'- 60' 60'- 70' 70'- 90' 90'-100' 100'-133' 133'-140' 140'-142' 142'-150' Drill Hole Location: County: (Logged by	No. 601. Elevation 300' NE½, Sec. 14, T. 4 S., R. 14 W. Grant : Dave Lumbert 11/78. Sand, fine, with red clay Clay, light gray, with chocolate brown clay interbeds, and very fine sand Clay, gray, with very fine sand Clay, gray, with interbedded fine sand, sine Sand, lignitic, very fine Sand, very fine Clay, glauconitic, with very fine sand Lignite Clay, gray-brown, with interbedded very fine sand T. D.: 150' No. 602. Elevation 331' SE½, Sec. 2, T. 4 S., R. 14 W. Grant : T. Y. Suen 11/78.
Location: County: (Logged by 0'- 23' 23'- 30' 30'- 60' 60'- 70' 70'- 90' 100'-133' 133'-140' 140'-142' 142'-150' Drill Hole Location: County: (County: County:	No. 601. Elevation 300' NE¼, Sec. 14, T. 4 S., R. 14 W. Grant Sand, fine, with red clay Clay, light gray, with chocolate brown clay interbeds, and very fine sand Clay, gray, with very fine sand Clay, gray, with interbedded fine sand, fine Sand, lignitic, very fine Sand, very fine Clay, glauconitic, with very fine sand Lignite Clay, gray-brown, with interbedded very fine sand T. D.: 150' No. 602. Elevation 331' SE¼, Sec. 2, T. 4 S., R. 14 W. Grant

80'- 83'	Sand, very fine		and a trace of lignite		lignite
83'- 97'	Clay, dark buff, silty		T. D.: 150'	40'- 50'	Sand, medium gray, very fine,
97′- 100 ′	Clay, dark brown, lignitic, with				finely micaceous, with a trace of
	a trace of lignite				lignite
100′-107′	Clay, gray, slightly silty		No. 606. Elevation 238'	50'- 60'	Sand, medium gray to tan, very
107′-110′	Clay, dark brown, lignitic, with	Location:	SW¼, Sec. 6, T. 5 S., R. 13 W.		fine, salt and pepper, finely
110′-130′	a trace of lignite	County: 0		601 601	micaceous, with clay binder
110 -130	Clay, dark buff, with very fine sand and silt	Logged by	/: T. Y. Suen 11/78.	60'- 69'	Sand, light green, very fine,
	T. D.: 130'	0'- 15'	Sand, light tan to red, mottled.		finely micaceous, with clay
	7. 5 100	0 - 15	with clay binder, very fine	69'- 78'	binder, slightly glauconitic Clay, chocolate brown, lignitic,
		15'- 25'	Clay, light tan, with very fine	09 - 76	with a trace of lignite
Drill Hole	No. 603. Elevation 338'	10 20	sand and silt, slightly micaceous	78'- 85'	Clay, dark gray-brown, with
	SE14, Sec. 34, T. 3 S., R. 14 W.	25'- 30'	Clay, dark gray-brown, with	70 - 03	very fine sand and silt, slightly
County: 0	Grant		very fine sand and silt, slightly		micaceous
Logged by	r: T. Y. Suen 11/78.		micaceous	85'- 90'	Sand, light gray-brown, very
		30'- 85'	Clay, dark greenish-gray, with		fine, with clay binder
0'- 5'	Clay, light reddish orange,		very fine sand and silt, slightly	90'-105'	Clay, light greenish-gray, with
	mottled, with very fine sand		micaceous, slightly carbona-		very fine sand and silt, slightly
5'- 25'	Clay, light gray, with very fine		ceous, slightly glauconitic		micaceous
	sand, slightly silty	85′- 9 0 ′	Clay, light brown, with very	105′-110′	Sand, dark greenish-gray, very
	T. D.: 25'		fine sand and silt, slightly mica-		fine, finely micaceous
		0011101	ceous, slightly carbonaceous		
		90′-110′	Clay, light greenish-gray, with		Core Interval 15' - 25'
Drill Hole	No. 604. Elevation 340'		very fine sand and silt, slightly		
	NW¼, Sec. 34, T. 3 S., R. 14 W.		micaceous and slightly carbon-		Recovered: Lost:
County: (110/105/	aceous		69'' 51''
	7: T. Y. Suen 11/78.	110′-135′	Sand, fine to very fine, salt		457
mogged by	11/78.	135′-140′	and pepper, with 2" of siderite Clay and sand, light greenish-		15' - 19'3" not recovered
0'- 3'	Sand and clay, buff-red, mott-	100-140	gray, fine, slightly micaceous		19'3" - 19'9" clay, dark brown,
	led, very fine	140'-150'	Clay, light greenish-gray, with		lignitic, with very fine sand, and thin lignite partings
3'- 23'	Clay, dark buff, with limonite		very fine sand and silt, slightly		19'9" - 21'3" clay, light brown,
	stain		micaceous with a trace of lignite		with very fine sand and a trace
23'- 33'	Clay, dark gray, with a trace		T. D.: 150'		of thin lignite partings
	of dark gray-brown clay, slightly				21'3" - 23'9" lignite, black, soft
	silty and micaceous				23'9" - 25' clay, light greenish-
33'- 39'	Sand, fine to very fine	Drill Hole	No. 607. Elevation 275'		gray, with very fine sand and
39'- 72'	Clay, dark gray, with very	Location:	NE¼, Sec. 2, T. 5 S., R. 14 W.		silt, slightly micaceous
	fine sand and silt, slightly	County: (Grant		
72′- 73′	micaceous	Logged by	r: T. Y. Suen 11/78.		Core Interval 14'6" - 23'6"
12 - 13	Clay, chocolate brown, slightly				
	silty and micaceous, with a trace of lignite	0 16.	Sand, light buff-white, very		Recovered: Lost:
73'- 85'	Clay, light greenish-gray, with		fine with clay binder, limonite		60" 48"
, 0	very fine sand and silt, slightly	16' 20'	stained		The second secon
	micaceous	16'- 2 0 '			14'6" - 18'6" not recovered
85'-100'	Clay, light brown to dark buff,	20'- 28'	and slightly micaceous Clay, buff to light brown, with		18'6" - 20'9" clay, light gray-
	with interbedded light greenish-	20 20	fine sand interbedded		brown, with thin lignite
	gray clay	28'- 30'	Clay, dark gray, slightly silty		partings 20'9'' - 21'9'' clay, light brown,
100'-125'	Clay, dark gray, slightly silty	20 00	and slightly micaceous		with thin lighte partings
	and micaceous	30'- 36'	Clay, chocolate brown, lignitic		throughout
125'-130'	Clay, light brown, with very		with a trace of lignite		21'9" - 22'11" lignite, black,
	fine sand, silty, slightly mica-	36'- 37'	Lignite, black, hard		hard
120/ 105/	ceous and a trace of lignite	3 7′- 5 5′	Clay, light gray-brown, slightly		22'11" - 23'6" clay, light green-
130′-135′	Clay, dark chocolate brown		silty and micaceous		ish-gray
135′-140′	Clay, chocolate brown, with a	55′- 66′	Clay, medium gray, with a		,
140'-150'	trace of lightle		trace of very fine sand and		Core Interval 15' - 25'
140 150	Clay, light brown, slightly silty and micaceous, with a trace of	001 4001	silt, slightly micaceous		
	very fine sand	66′-100′	Sand, light gray, very fine,		Recovered: Lost:
	very fine sand	00 - 100	salt and pepper, with clay		Recovered: Lost: 81" 39"
	very fine sand T. D.: 150'	00 - 100	salt and pepper, with clay binder, slightly glauconitic		81" 39"
	very fine sand		salt and pepper, with clay binder, slightly glauconitic and slightly micaceous		81" 39" 15' - 18'3" not recovered
Drill Hole	very fine sand T. D.: 150'	100′-150′	salt and pepper, with clay binder, slightly glauconitic and slightly micaceous Sand, light gray, fine to very		81" 39" 15' - 18'3" not recovered 18'3" - 18'9" clay, light brown,
Drill Hole Location:	very fine sand T. D.: 150'		salt and pepper, with clay binder, slightly glauconitic and slightly micaceous Sand, light gray, fine to very fine, slightly micaceous, with		81" 39" 15' - 18'3" not recovered 18'3" - 18'9" clay, light brown, with lignite partings
Location: County: G	very fine sand T. D.: 150' No. 605. Elevation 325' SE¼, Sec. 5, T. 5 S., R. 13 W.		salt and pepper, with clay binder, slightly glauconitic and slightly micaceous Sand, light gray, fine to very fine, slightly micaceous, with a trace of lignite		81" 39" 15' - 18'3" not recovered 18'3" - 18'9" clay, light brown, with lignite partings 18'9" - 20' lignite, black, with
Location: County: G	very fine sand T. D.: 150' No. 605. Elevation 325' SE%, Sec. 5, T. 5 S., R. 13 W.		salt and pepper, with clay binder, slightly glauconitic and slightly micaceous Sand, light gray, fine to very fine, slightly micaceous, with		81" 39" 15' - 18'3" not recovered 18'3" - 18'9" clay, light brown, with lignite partings 18'9" - 20' lignite, black, with thin brown clay partings
Location: County: C Logged by	very fine sand T. D.: 150' No. 605. Elevation 325' SE¼, Sec. 5, T. 5 S., R. 13 W. Grant T. Y. Suen 11/78.		salt and pepper, with clay binder, slightly glauconitic and slightly micaceous Sand, light gray, fine to very fine, slightly micaceous, with a trace of lignite		81" 39" 15' - 18'3" not recovered 18'3" - 18'9" clay, light brown, with lignite partings 18'9" - 20' lignite, black, with thin brown clay partings 20' - 21'2" lignite, black, hard
Location: County: G	very fine sand T. D.: 150' No. 605. Elevation 325' SE¼, Sec. 5, T. 5 S., R. 13 W. Grant T. Y. Suen 11/78. Sand, light tan to red, mottled,	100′-150′	salt and pepper, with clay binder, slightly glauconitic and slightly micaceous Sand, light gray, fine to very fine, slightly micaceous, with a trace of lignite T.D.: 150'		81" 39" 15' - 18'3" not recovered 18'3" - 18'9" clay, light brown, with lignite partings 18'9" - 20' lignite, black, with thin brown clay partings
Location: County: G Logged by	very fine sand T. D.: 150' No. 605. Elevation 325' SE¼, Sec. 5, T. 5 S., R. 13 W. Grant T. Y. Suen 11/78. Sand, light tan to red, mottled, with clay binder, very fine	100′-150′ Drill Hole	salt and pepper, with clay binder, slightly glauconitic and slightly micaceous Sand, light gray, fine to very fine, slightly micaceous, with a trace of lignite T.D.: 150'		81" 39" 15' - 18'3" not recovered 18'3" - 18'9" clay, light brown, with lignite partings 18'9" - 20' lignite, black, with thin brown clay partings 20' - 21'2" lignite, black, hard 21'2" - 21'5" clay, dark brown, lignitic
Location: County: G Logged by 0'- 8' 8'- 10'	very fine sand T. D.: 150' No. 605. Elevation 325' SE¼, Sec. 5, T. 5 S., R. 13 W. Frant T. Y. Suen 11/78. Sand, light tan to red, mottled, with clay binder, very fine Sand, white, very fine	100'-150' Drill Hole Location:	salt and pepper, with clay binder, slightly glauconitic and slightly micaceous Sand, light gray, fine to very fine, slightly micaceous, with a trace of lignite T. D.: 150' No. 608. Elevation 320' NE%, Sec. 3, T. 5 S., R. 14 W.		81" 39" 15' - 18'3" not recovered 18'3" - 18'9" clay, light brown, with lignite partings 18'9" - 20' lignite, black, with thin brown clay partings 20' - 21'2" lignite, black, hard 21'2" - 21'5" clay, dark brown,
Location: County: G Logged by	very fine sand T. D.: 150' No. 605. Elevation 325' SE%, Sec. 5, T. 5 S., R. 13 W. Grant T. Y. Suen 11/78. Sand, light tan to red, mottled, with clay binder, very fine Sand, white, very fine Sand, white, with clay binder,	100'-150' Drill Hole Location: County: (salt and pepper, with clay binder, slightly glauconitic and slightly micaceous Sand, light gray, fine to very fine, slightly micaceous, with a trace of lignite T. D.: 150' No. 608. Elevation 320' NE¼, Sec. 3, T. 5 S., R. 14 W. Grant		81" 39" 15' - 18'3" not recovered 18'3" - 18'9" clay, light brown, with lignite partings 18'9" - 20' lignite, black, with thin brown clay partings 20' - 21'2" lignite, black, hard 21'2" - 21'5" clay, dark brown, lignitic 21'5" - 25' sand, light greenishgray, with clay binder, micaceous
Location: County: 6 Logged by 0'- 8' 8'- 10' 10'- 15'	very fine sand T. D.: 150' No. 605. Elevation 325' SE¼, Sec. 5, T. 5 S., R. 13 W. Frant T. Y. Suen 11/78. Sand, light tan to red, mottled, with clay binder, very fine Sand, white, very fine Sand, white, with clay binder, very fine yery fine	100'-150' Drill Hole Location: County: (salt and pepper, with clay binder, slightly glauconitic and slightly micaceous Sand, light gray, fine to very fine, slightly micaceous, with a trace of lignite T. D.: 150' No. 608. Elevation 320' NE%, Sec. 3, T. 5 S., R. 14 W.		81" 39" 15' - 18'3" not recovered 18'3" - 18'9" clay, light brown, with lignite partings 18'9" - 20' lignite, black, with thin brown clay partings 20' - 21'2" lignite, black, hard 21'2" - 21'5" clay, dark brown, lignitic 21'5" - 25' sand, light greenish- gray, with clay binder, mica-
Location: County: G Logged by 0'- 8' 8'- 10'	very fine sand T. D.: 150' No. 605. Elevation 325' SE¼, Sec. 5, T. 5 S., R. 13 W. Frant T. Y. Suen 11/78. Sand, light tan to red, mottled, with clay binder, very fine Sand, white, very fine Sand, white, with clay binder, very fine Clay, dark gray, with very fine	Drill Hole Location: County: (Logged by	salt and pepper, with clay binder, slightly glauconitic and slightly micaceous Sand, light gray, fine to very fine, slightly micaceous, with a trace of lignite T. D.: 150' No. 608. Elevation 320' NE%, Sec. 3, T. 5 S., R. 14 W. Grant T. T. Y. Suen 11/78.		81" 39" 15' - 18'3" not recovered 18'3" - 18'9" clay, light brown, with lignite partings 18'9" - 20' lignite, black, with thin brown clay partings 20' - 21'2" lignite, black, hard 21'2" - 21'5" clay, dark brown, lignitic 21'5" - 25' sand, light greenish- gray, with clay binder, mica- ceous T. D.: 110'
Location: County: 6 Logged by 0'- 8' 8'- 10' 10'- 15'	very fine sand T. D.: 150' No. 605. Elevation 325' SE%, Sec. 5, T. 5 S., R. 13 W. Grant T. Y. Suen 11/78. Sand, light tan to red, mottled, with clay binder, very fine Sand, white, very fine Sand, white, with clay binder, very fine Clay, dark gray, with very fine sand, slightly silty and mica-	100'-150' Drill Hole Location: County: (salt and pepper, with clay binder, slightly glauconitic and slightly micaceous Sand, light gray, fine to very fine, slightly micaceous, with a trace of lignite T. D.: 150' No. 608. Elevation 320' NE¼, Sec. 3, T. 5 S., R. 14 W. Grant T. T. Y. Suen 11/78. Clay, dark tan, with very	Drill Hole	81" 39" 15' - 18'3" not recovered 18'3" - 18'9" clay, light brown, with lignite partings 18'9" - 20' lignite, black, with thin brown clay partings 20' - 21'2" lignite, black, hard 21'2" - 21'5" clay, dark brown, lignitic 21'5" - 25' sand, light greenishgray, with clay binder, micaceous T. D.: 110' No. 609. Elevation 270'
Location: County: C Logged by 0'- 8' 8'- 10' 10'- 15'	very fine sand T. D.: 150' No. 605. Elevation 325' SE¼, Sec. 5, T. 5 S., R. 13 W. Frant T. Y. Suen 11/78. Sand, light tan to red, mottled, with clay binder, very fine Sand, white, very fine Sand, white, with clay binder, very fine Clay, dark gray, with very fine	Drill Hole Location: County: (Logged by	salt and pepper, with clay binder, slightly glauconitic and slightly micaceous Sand, light gray, fine to very fine, slightly micaceous, with a trace of lignite T. D.: 150' No. 608. Elevation 320' NE¼, Sec. 3, T. 5 S., R. 14 W. Grant T. T. Y. Suen 11/78. Clay, dark tan, with very fine sand and silt, slightly	Location:	81" 39" 15' - 18'3" not recovered 18'3" - 18'9" clay, light brown, with lignite partings 18'9" - 20' lignite, black, with thin brown clay partings 20' - 21'2" lignite, black, hard 21'2" - 21'5" clay, dark brown, lignitic 21'5" - 25' sand, light greenishgray, with clay binder, micaceous T. D.: 110' No. 609. Elevation 270' NE'4, Sec. 4, T. 5 S., R. 14 W.
Location: County: 6 Logged by 0'- 8' 8'- 10' 10'- 15'	very fine sand T. D.: 150' No. 605. Elevation 325' SE%, Sec. 5, T. 5 S., R. 13 W. Grant T. Y. Suen 11/78. Sand, light tan to red, mottled, with clay binder, very fine Sand, white, very fine Sand, white, very fine Sand, white, with clay binder, very fine Clay, dark gray, with very fine sand, slightly silty and micaceous, with a trace of glauconite and siderite Silt, dark gray, with very fine	Drill Hole Location: County: C Logged by	salt and pepper, with clay binder, slightly glauconitic and slightly micaceous Sand, light gray, fine to very fine, slightly micaceous, with a trace of lignite T. D.: 150' No. 608. Elevation 320' NE'4, Sec. 3, T. 5 S., R. 14 W. Grant T. T. Y. Suen 11/78. Clay, dark tan, with very fine sand and silt, slightly micaceous	Location: County: C	81" 39" 15' - 18'3" not recovered 18'3" - 18'9" clay, light brown, with lignite partings 18'9" - 20' lignite, black, with thin brown clay partings 20' - 21'2" lignite, black, hard 21'2" - 21'5" clay, dark brown, lignitic 21'5" - 25' sand, light greenish- gray, with clay binder, mica- ceous T. D.: 110' No. 609. Elevation 270' NE'4, Sec. 4, T. 5 S., R. 14 W. irant
Location: County: C Logged by 0'- 8' 8'- 10' 10'- 15' 15'- 70'	very fine sand T. D.: 150' No. 605. Elevation 325' SE¼, Sec. 5, T. 5 S., R. 13 W. Grant T. Y. Suen 11/78. Sand, light tan to red, mottled, with clay binder, very fine Sand, white, very fine Sand, white, very fine Sand, white, with clay binder, very fine Clay, dark gray, with very fine sand, slightly silty and micaceous, with a trace of glauconite and siderite Silt, dark gray, with very fine sand and 5" of siderite	Drill Hole Location: County: C Logged by 0'- 13'	salt and pepper, with clay binder, slightly glauconitic and slightly micaceous Sand, light gray, fine to very fine, slightly micaceous, with a trace of lignite T. D.: 150' No. 608. Elevation 320' NE¼, Sec. 3, T. 5 S., R. 14 W. Grant T. T. Y. Suen 11/78. Clay, dark tan, with very fine sand and silt, slightly micaceous Clay, chocolate brown, lignitic	Location: County: C	81" 39" 15' - 18'3" not recovered 18'3" - 18'9" clay, light brown, with lignite partings 18'9" - 20' lignite, black, with thin brown clay partings 20' - 21'2" lignite, black, hard 21'2" - 21'5" clay, dark brown, lignitic 21'5" - 25' sand, light greenishgray, with clay binder, micaceous T. D.: 110' No. 609. Elevation 270' NE'4, Sec. 4, T. 5 S., R. 14 W.
Location: County: C Logged by 0'- 8' 8'- 10' 10'- 15'	very fine sand T. D.: 150' No. 605. Elevation 325' SE¼, Sec. 5, T. 5 S., R. 13 W. Frant T. Y. Suen Sand, light tan to red, mottled, with clay binder, very fine Sand, white, very fine Sand, white, with clay binder, very fine Clay, dark gray, with very fine sand, slightly silty and micaceous, with a trace of glauconite and siderite Silt, dark gray, with very fine sand and 5" of siderite Clay, dark gray, with very fine	Drill Hole Location: County: C Logged by	salt and pepper, with clay binder, slightly glauconitic and slightly micaceous Sand, light gray, fine to very fine, slightly micaceous, with a trace of lignite T. D.: 150' No. 608. Elevation 320' NE¼, Sec. 3, T. 5 S., R. 14 W. Grant T. T. Y. Suen 11/78. Clay, dark tan, with very fine sand and silt, slightly micaceous Clay, chocolate brown, lignitic Lignite, black, hard	Location: County: C Logged by	81" 39" 15' - 18'3" not recovered 18'3" - 18'9" clay, light brown, with lignite partings 18'9" - 20' lignite, black, with thin brown clay partings 20' - 21'2" lignite, black, hard 21'2" - 21'5" clay, dark brown, lignitic 21'5" - 25' sand, light greenishgray, with clay binder, micaceous T. D.: 110' No. 609, Elevation 270' NE'4, Sec. 4, T. 5 S., R. 14 W. brant T. Y. Suen 11/78.
Location: County: C Logged by 0'- 8' 8'- 10' 10'- 15' 15'- 70'	very fine sand T. D.: 150' No. 605. Elevation 325' SE¼, Sec. 5, T. 5 S., R. 13 W. Grant T. Y. Suen 11/78. Sand, light tan to red, mottled, with clay binder, very fine Sand, white, very fine Sand, white, very fine Sand, white, with clay binder, very fine Clay, dark gray, with very fine sand, slightly silty and micaceous, with a trace of glauconite and siderite Silt, dark gray, with very fine sand and 5" of siderite	Drill Hole Location: County: C Logged by 0'- 13'	salt and pepper, with clay binder, slightly glauconitic and slightly micaceous Sand, light gray, fine to very fine, slightly micaceous, with a trace of lignite T. D.: 150' No. 608. Elevation 320' NE%, Sec. 3, T. 5 S., R. 14 W. Grant T. T. Y. Suen 11/78. Clay, dark tan, with very fine sand and silt, slightly micaceous Clay, chocolate brown, lignitic Lignite, black, hard Clay, dark tan to medium gray	Location: County: C	81" 39" 15' - 18'3" not recovered 18'3" - 18'9" clay, light brown, with lignite partings 18'9" - 20' lignite, black, with thin brown clay partings 20' - 21'2" lignite, black, hard 21'2" - 21'5" clay, dark brown, lignitic 21'5" - 25' sand, light greenishgray, with clay binder, micaceous T. D.: 110' No. 609. Elevation 270' NE'4, Sec. 4, T. 5 S., R. 14 W. Gravel, medium pea to small
Location: County: C Logged by 0'- 8' 8'- 10' 10'- 15' 15'- 70'	very fine sand T. D.: 150' No. 605. Elevation 325' SE¼, Sec. 5, T. 5 S., R. 13 W. Frant T. Y. Suen Sand, light tan to red, mottled, with clay binder, very fine Sand, white, very fine Sand, white, with clay binder, very fine Clay, dark gray, with very fine sand, slightly silty and micaceous, with a trace of glauconite and siderite Silt, dark gray, with very fine sand and 5" of siderite Clay, dark gray, with very fine	Drill Hole Location: County: (Logged by 0'- 13' 13'- 15' 15'- 22' 22'- 35'	salt and pepper, with clay binder, slightly glauconitic and slightly micaceous Sand, light gray, fine to very fine, slightly micaceous, with a trace of lignite T. D.: 150' No. 608. Elevation 320' NE¼, Sec. 3, T. 5 S., R. 14 W. Grant T. T. Y. Suen 11/78. Clay, dark tan, with very fine sand and silt, slightly micaceous Clay, chocolate brown, lignitic Lignite, black, hard	Location: County: C Logged by	81" 39" 15' - 18'3" not recovered 18'3" - 18'9" clay, light brown, with lignite partings 18'9" - 20' lignite, black, with thin brown clay partings 20' - 21'2" lignite, black, hard 21'2" - 21'5" clay, dark brown, lignitic 21'5" - 25' sand, light greenishgray, with clay binder, micaceous T. D.: 110' No. 609, Elevation 270' NE'4, Sec. 4, T. 5 S., R. 14 W. brant T. Y. Suen 11/78.

4' 8	8′	Sand, white, fine, salt and pepper, coarsely micaceous,	95′- 100 ′	Sand, light gray, slightly salt and pepper, very fine, with	14'- 20'	Sand, white, very fine, with clay binder
88'- 8	9'	with thin limonite seams Clay, dark chocolate brown,	100′ 110′	silt binder Clay, light greenish-gray, with	20′ 43′	Gravel and sand, small pea to granule
89′ 9		lignitic Clay, light greenish gray, with		very fine sand and silt, and a trace of lignite	43′- 50′	Gravel, large pebble, with fine to medium sand
		very fine sand and silt, slightly micaceous, with a trace of	110′-135′	Sand, light gray, coarse, with a trace of clay binder		T. D.: 50'
95′-1 0	7'	dark chocolate brown clay Clay, dark green, with very	135′-145′	Sand, medium to fine, slightly micaceous		No. 616. Elevation 285'
		fine sand and silt, slightly glauconitic and a trace of	145′-150′	Sand, fine, with thin interbed- ded gray silt seams	County: C	
107′-13	0′	lignite and lignitic clay Clay, dark tan, with very fine		T. D.: 150'		7: T. Y. Suen 12/78.
130′-14	5′	sand and silt, slightly micaceous Sand, light tan, salt and pepper,		No. 612. Elevation 210'		Sand, very fine to fine, with white to red mottled clay
145′-15	0′	fine to very fine Sand and silt, light gray, very	County: 0		13'- 15' 15'- 50'	Silt and sand, cream to white, very fine
		fine, slighlty micaceous T. D.: 150'		Sand, light to dark brown,	15 - 50	Clay, dark gray, with very fine sand and silt, slightly micaceous, slightly glauconitic
Drill Ho	ole i	No. 610. Elevation 290'	0 - 20	fine to very fine, with silty clay binder	50'- 90'	Clay, medium to light gray, with very fine sand and silt,
	n:	SE¼, Sec. 6, T. 5 S., R. 14 W.	20'- 25'	Sand, dark brown, with silt binder		slightly micaceous and a trace of siderite
		: T. Y. Suen 12/78.	25'- 40'	Sand, medium, with brown silt binder	90′-100′	Sand, very fine to fine, with medium gray clay binder, silty,
0'- 8'- 1		Gravel, large to small pebble Clay, light yellow-brown, with	40'- 49'	Sand, dark brown, medium to granule, with silt binder		slightly micaceous and 4" of siderite
12′- 1	7'	very fine sand and silt Clay, dark tan, with very	49'- 50'	Clay, chocolate brown, lignitic with a trace of lignite	100′-138′	Silt, medium gray, with very fine sand, finely micaceous
17'- 2	5'	fine sand and silt, slightly micaceous	50'- 57' 57'- 60'	Clay, gray, slightly silty Clay, medium brown, with	138′-139′	with a trace of siderite Lignite, brown, soft, with lig-
25'- 3		Sand, light gray, with clay binder, very fine, micaceous Silt, light gray, with very fine	60'- 65'	very fine sand and silt Clay, light greenish-gray, slightly silty	139′-145′	nitic clay seams Clay, light gray, silty, with a trace of very fine sand
32′- 3		sand, slightly micaceous Sand, dark green, very fine,	65'- 69'	Lignite, dark brown, soft, with lignitic clay seams	145′-150′	Clay, light green, with very fine sand and silt
35′- 7		glauconitic, slightly micaceous Clay, dark gray, with very fine	69′- 93′ 93′-100′	Clay, light gray Clay, light gray, with very		T. D.: 150'
76′- 8	7'	sand and silt, finely micaceous Sand, medium gray, salt and	100′-110′	fine sand and silt Sand, dark gray, very fine,	Location:	No. 617. Elevation 265' NE¼, Sec. 22, T. 5 S., R. 13 W.
87′- 9	1′	pepper, fine, micaceous Clay, medium gray, with very	110′-150′		County: (Logged by	Grant 7: T. Y. Suen 12/78.
91′-12	8′	fine sand, slightly micaceous Sand, medium gray, salt and pepper, silty, fine, slightly		and pepper, fine, slightly mica- ceous and a trace of lignite T. D.: 150'	0'- 12'	Sand, red, very fine, mica- ceous
128′-14	4'	micaceous Clay and silt, light greenish-		7. 5 100	12'- 25'	Clay, dark gray, with a trace of very fine sand and silt, and
		gray, with very fine sand, slightly micaceous, and a trace		No. 613. Elevation 222' NW¼, Sec. 4, T. 5 S., R. 15 W.	25'- 35'	a trace of siderite Clay, dark gray, with very fine
144′-14	5′	of lignite Clay, dark chocolate brown,	County: 6 Logged by	Grant 7: T. Y. Suen 12/78.	35'- 85'	sand, slightly glauconitic Clay, light gray, with very fine
145′-14 147′-15		lignitic Lignite, black, soft Clay, light brown to dark tan.	0'- 8'	Clay, light yellow-brown, with a trace of very fine sand	85′-128′	sand and silt, slightly mica- ceous and a trace of siderite
,		with a trace of very fine sand and silt, coarsely micaceous	8'- 12'	Sand, very fine, with yellow- brown clay binder, slightly	65-126	Clay, medium gray, with very fine sand and silt, slightly glauconitic and 6" of siderite
		T. D.: 150'	12'- 32'	micaceous Gravel, large pea to small	128′-129′	Clay, dark chocolate brown, lignitic
Drill Ho	ole l	No. 611. Elevation 270'	32'- 47'	pebble Clay, dark gray, with very fine	129'-133'	Clay, medium gray, with very fine sand, slightly micaceous
Locatio County	n: : G	SE¼, Sec. 1, T. 5 S., R. 15 W.		sand and silt T. D.: 47'	133′-134′ 134′-150′	
Logged	by	: T. Y. Suen 12/78.				sand and silt T. D.: 150'
0'-	7′	Sand, light gray, very fine,		No. 614. Elevation 234'		
7′- 1	2′	with clay binder, slightly silty Clay, light gray, with very fine	County:			No. 618. Elevation 220'
		sand and silt, slightly salt and pepper, and slightly micaceous	Logged by	7: T. Y. Suen 12/78.	Location: County: (SE¼, Sec. 27, T. 5 S., R. 13 W Grant
12'- 4 40'- 5		Gravel and coarse sand Sand and silt, light gray, fine		Location abandoned		7: T. Y. Suen 12/78.
5 0′ - 5	7′	to coarse Clay, dark greenish-gray, with		No. 615. Elevation 235'	0'- 6'	Clay, medium brown and light tan interbedded
E 7/ =	0.	very fine sand and silt, and a trace of lignite	County: 0		6'- 45'	Clay, dark gray, with very fine sand and silt, slightly micaceous
57'- 5 58'- 5	9'	Clay, chocolate brown, lignitic Lignite, black, hard		7: T. Y. Suen 12/78.		with a trace of glauconite and 2" of siderite
59'- 9	ວ້	Sand, light greenish-gray, very fine, with a trace of lignite	0'- 14'	Sand, yellow-brown, very fine, with clay binder	45'- 51'	Sand, light gray, salt and pepper, fine

		AIIIANS	AS EIGHTE INVESTIGATIONS		
51'- 60'	Clay madium anny aliabety		ton also		U-salet a sales
51 - 60	Clay, medium gray, slightly glauconitic and micaceous, with	18'- 40'	tan clay Clay, dark gray, with very fine	60'- 62'	lignitic clay Clay, dark brown
	very fine sand	10 10	sand and silt, slightly mica-	62' 63'	Lignite, black, soft, with
60′-134′	Clay, light gray, with siderite		ceous, slightly carbonaceous		dark chocolate brown lignitic
134'-135'	stringers @88' and 98'	40'- 52'	Clay, medium gray, slightly	601 671	clay
134 - 130	Lignite, black, hard, with choco- late brown lignitic clay	52'- 65'	silty, and slightly micaceous Clay, light gray, with very fine	63'- 67'	Clay, dark gray-brown, slightly silty
135'-145'	Clay, light greenish-gray, with	02	sand, slightly micaceous	67'- 75'	Sand, medium gray, very fine
44514501	very fine sand	65'- 95'	Clay, light greenish-gray, with		to fine, slightly salt and
145′-150′	Clay, medium gray-green, with very fine sand		very fine sand and silt, coarsely	751 001	pepper
	T. D.: 150'		micaceous, and slightly glauco- nitic	75′- 80′ 80′-110′	Clay, light gray, slightly silty Clay, light green and light
		95'-125'	Clay, light green, with very fine	00 110	brown interbedded, with very
Drill Hole	No. 619. Elevation 270'		sand and silt, slightly glau-		fine sand and silt, slightly
Location:	SW¼, Sec. 34, T. 5 S., R. 13 W.	125'-127'	conitic Clay, chocolate brown, with a	110'-150'	micaceous
County: G		120 127	trace of lignite	110-150	Sand, gray, very fine, slightly salt and pepper, with 7" of
Logged by	: T. Y. Suen 12/78.	127'-140'	Clay, light gray, silty, with a		siderite
0'- 20'	Sand and small pebble gravel,	140′-150′	trace of very fine sand		T. D.: 150'
0, 10	fine to very fine, with light	140 - 150	Sand, very fine, with light green to light buff clay, silty, slightly		
	brown to tan clay binder		micaceous		
20'- 45'	Clay, medium gray, silty, with		T. D.: 150'		No. 624. Elevation 180'
	a trace of very fine sand, slightly carbonaceous			Location: County: G	NW¼, Sec. 3, T. 7 S., R. 13 W.
45'- 52'	Clay and sand, fine, slightly				r: T. Y. Suen 12/78.
52'- 93'	silty, slightly carbonaceous		No. 622. Elevation 260'		
32 - 33	Sand, medium gray, very fine, silty, finely micaceous, with	County: G	NE¼, Sec. 22, T. 6 S., R. 13 W.	0'- 10'	Sand and gravel interbedded
	2" of siderite		: T. Y. Suen 12/78.	10'- 20'	Clay, light tan to light gray, with thin bedded pebble gravel
93′-100′	Clay, medium gray, with small			20'- 30'	Clay, light gray to tan, with
	to large pebble white gravel lenses and 2" of siderite	0'- 11'	Clay, dark tan, with very fine		very fine sand and silt, slightly
100'-120'	Clay, medium gray, with very		sand and silt, slightly mica- ceous	30'- 32'	micaceous Sand, very fine, with light tan
100/400/	fine sand and silt	11'- 15'	Sand, white to light gray, fine	00 - 02	to cream clay binder, slightly
120′-129′	Silt and sand, light gray, very fine, with white small pebble		to medium, with a trace of clay		silty
	gravel lenses	15'- 23'	binder Clay, light brown, with very fine	32'- 34' 34'- 43'	Clay, dark brown
129′-136′	Clay, chocolate brown, lignitic	10 20	sand, slightly micaceous	34 - 43	Clay, light greenish-gray, slight- ly silty
136'-150'	with a trace of lignite	23'- 40'	Clay, light gray, with a trace of	43'- 44'	Lignite, black, soft, with dark
130 -150	Sand, very fine to fine, with gray clay and silt binder	40'- 46'	very fine sand, silt, and lignite Clay, light gray		chocolate brown clay
	T. D.: 150'	46'- 48'	Clay, light green, with very	44'- 47' 47'- 48'	Clay, light green, slightly silty Lignite, black, soft
			fine sand	48'- 54'	Clay, light green, slightly silty
Drill Hole I	No. 620. Elevation 260'	48′- 5 0′	Sand, very fine, with medium	54'- 58'	Clay, dark chocolate brown,
Location:	NW¼, Sec. 10, T. 6 S., R. 13 W.		gray silt binder, slightly mica- ceous	58'- 75'	lignitic, with a trace of lignite
County: G	rant	50'- 85'	Clay, gray to chocolate brown	75'- 90'	Clay, light green Clay, light to medium green,
Logged by	: T. Y. Suen 12/78.		interbedded, with a trace of		with very fine sand and silt,
0'- 8'	Gravel, small pea to granule,	85′-100′	very fine sand and lignite Sand, light gray-green, with		finely micaceous, and 3" of
0/ 55/	with thin dark tan clay seams		clay binder, slightly micaceous	9 0' -125'	siderite Silt, light greenish-gray, with
8'- 55'	Clay, dark gray, with very fine sand and silt, slightly micaceous,	100′-150′	Sand, light gray, fine to very		clay binder, very fine sand,
	and a trace of siderite		fine T. D.: 150'		finely micaceous, and a trace
55'- 60'	Clay, medium gray, with very		7. 5 100	125'-150'	of lignite Sand, light gray, very fine to
	fine sand and silt, and a trace of lignite				fine, salt and pepper
60'- 85'	Sand, light gray, fine, coarsely				
	micaceous, with a trace of	Drill Hole	No. 623. Elevation 240'		
85'- 95'	Clay light and to be 60 Miles	Location:	SE14, Sec. 27, T. 6 S., R. 13 W.		Core Interval 46' - 51'
55 - 55	Clay, light cream to buff, slight- ly silty	County: G	rant		
95'-150'	Sand, medium gray, fine, coarse-	Logged by	: T. Y. Suen 12/78.		Recovered: Lost:
	ly micaceous	0'- 10'	Sand, very fine, with light		26" 34"
	T. D.: 150'		gray to yellow-orange clay		34"
		10'- 17'	binder Gravel, small pea, with coarse		46' - 48'10" lignite, not re-
D-011 11-1-1	I- 024 C		sand		covered - ground up in core barrel.
Location:	lo. 621. Elevation 250' NW¼, Sec. 15, T. 6 S., R. 13 W.	17'- 25'	Clay, medium gray		48'10'' - 49'2'' lignite, black,
County: Gr	ant	25'- 34' 34'- 45'	Clay, light green		soft, with lignitic clay
	T. Y. Suen 12/78.	45'- 53'	Clay, light gray-brown, silty Clay, brown, slightly silty		49'2" - 51' clay, light greenish-
0'- 18'		53'- 59'	Clay, light green slightly silty		gray, slightly micaceous and glauconitic.
0 - 10	Gravel, small pea to small pebble, with a trace of light	59′-60′	Lignite, black, soft, with a		
			trace of dark chocolate brown		T. D.: 150'

APPENDIX C

Analyses of Arkansas Lignite

TABLE 1 - PROXIMATE AND ULTIMATE ANALYSES OF LIGNITE IN ARKANSAS

		Remarks	NW½, Sec. 18, T. 11 N., R 4 E. Poinsett County	NE¼, Sec. 18, T. 11 N., R. 4 E. Poinsett County	SE½, Sec. 9, T. 11 N., R. 4 E. Poinsett County	SE%, Sec. 18, T. 11 N., R. 4 E. Poinsett County	SE¼, Sec. 31, T. 11 N., R. 4 E. Poinsett County	SE%, Sec. 28, T. 13 N., R 4 E. Craighead County	SE%, Sec. 21, T. 14 N., R. 3 E. Craighead County	SE½, Sec. 21, T. 14 N., R. 3 E. Creighead County	SE%, Sec. 19, T. 14 N., R. 3 E. Craighead County	NE¼, Sec. 19, T. 14 N., R. 3 E. Craighead County	
	₽/ ses	Source of analy	4	4	∢	∢	∢	∢	∢	∢	∢ .	<	***************************************
	oN xeb	Free swelling in			and the second second second	Market State of the State of th						4	i.
5		Fluid femperature	2570	2530	2090	2530	2730	2680	2760	2350	2350	2100	Manual or annual or control of the c
Fusibility of ash (°F.)		Softening enutereques	2460	2410	2040	2410	2680	2630	2460	2300	2250 %	2050	
J. Se	uoi	tsmrofeb lsitinl enutereqmet	2410	2360	1990	2360	2630	2580	2410	2250	2200	2010	
		Btu/lb.	5060 8680 12430	4260 7560 11400	5160 9250 11750	4830 7390 12220	3740 5910 10670	3400 5820 10820	3910 6140 11740	4590 7660 11640	5250 9460 12020	5620 9990 12040	Manage some maga region some more
		Oxygen	45.6 14.4 20.7	48.2 16.5 24.9	47.8 15.1 19.3	39.7 13.6 22.2	41.9 14.5 26.3	45.5 14.6 27.1	40.1 12.4 23.5	44.1 14.3 21.6	49.1 17.1 21.7	48.4 17.0 20.4	C
		Nitrogen	0.4	0.5 0.8 1.2	0.4	0.6	0.6	0.3 0.6 1.1	0.4 0.6 1.2	0.7	0.6 1.0	0.5	
×		Carbon	29.0 49.8 71.4	24.9 44.3 66.8	29.5 52.9 67.2	27.3 41.8 69.1	23.1 36.5 65.8	20.4 34.9 64.8	22.9 36.0 68.9	27.5 45.8 69.7	30.8 55.5 70.5	32.8 58.3 70.3	
Ultimate analyses		Hydrogen	7.1 4.2 6.0	7.0 3.7 5.6	7.4 4.5 5.7	6.5 4.0 6.7	5.8 5.0	6.3 5.3	5.9 5.6	6.5 3.3 5.1	7.3 4.3 5.5	7.3 4.3 5.2	0
ltimate	* •	oinsgnO	0.30 0.51 0.74	0.47 0.83 1.25	1.06 1.90 2.42	0.32 0.49 0.82	0.37 0.58 1.05	0.38 0.65 1.21	0.20	0.46 0.77 1.17	0.31 0.55 0.70	0.43 0.76 0.92	
ם	Forms of Sulphur	Pyritic	0.02 0.03 0.04	0.08 0.13 0.20	1.44 2.58 3.27	0.01 0.02 0.04	0.01 0.01 0.02	0.14 0.24 0.45	0.04 0.06 0.12	0.45 0.75 1.14	0.10 0.17 0.22	0.91 1.62 1.95	
		Sulphate	0.01	0.00	0.50 0.90 1.14	0.01	0.01	0.03 0.04 0.08	0.01 0.02 0.04	0.09 0.14 0.22	0.04 0.07 0.09	0.08 0.15 0.18	C
		Sulphur	0.3 0.6 0.8	0.5	3.0 5.4 6.8	0.3	0.6	0.5	0.3	1.0	0.8	1.4 2.5 3.0	
a		dsA	17.6	18.9	21.3	25.8 39.5	28.2	27.0	30.4	20.5	11.8	9.6	jā.
Proximate analyses		Fixed nodiso	14.4 24.9 35.6	15.6 27.6 41.6	18.0 32.4 41.1	13.3 20.4 33.8	13.3 21.1 38.1	13.6 23.3 43.4	13.3 20.9 39.9	19.3 32.2 49.0	19.7 35.4 45.0	22.2 39.5 47.6	
م م		eliteloV rettem	26.2 44.9 64.4	21.8 38.7 58.4	25.9 46.3 58.9	26.2 40.1 66.2	21.7 34.3 61.9	17.8 30.5 56.6	20.0 31.4 60.1	20.1 33.6 51.0	24.0 43.3 55.0	24.4 43.5 52.4	****
	Marin maran canada	enutsioM	41.8	43.7	44.2	34.7	36.8	41.6	36.3	40.1	44.5	43.8	
		Air-drying loss	AND AND DESCRIPTION OF AN ADVANCE.				-						
		S_ noifibno	327	- N W	- C &	- 0 w	~ 0 m	- 28	- 0 8	~ 0 m	200	-00	
		U. S. Bur. Mines lab No.	K-62639	K-62641	K-62644	K-62640	K-62642	K-62643	K-62645	K-62646	K-63975	K-63976	
	7.5	Site of sample	υ	O	U	O	U	U	U	ပ	U	U	
	(58)	Thickness (inch	81	78	27	53	74	8	8	24	<u>ج</u>	09	
÷	f <u>/</u> 19	Locality Numb	ю	24	27	3	35	62	89	Super Allinana - reserving	7	73	

0-	rindran nazari filozofi filozofia de la comunicación de la comunicació				inthinesinus sales desployens e	THE STREET OF THE STREET STREET, STREET STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET, STREET,		**************************************		Nik kalanda'u ka dikistayan ke-parpaganan kaba			M. M. Carlotte		
Tentonion	SE%, Sec. 18, T. 14 N., R. 3 E. Craighead County	SE½, Sec. 18, T. 14 N., R. 3 E. Craighead County	NE½, Sec. 19, T. 14 N., R. 3 E. Craighead County	NE½, Sec. 19, T. 14 N., R. 3 E. Craighead County	SE½, Sec. 16, T. 14 N., R. 3 E. Craighead County	SW¼, Sec. 23, T. 14 N., R. 3 E. Craighead County	SW%, Sec.28, T.14 S.,R. 21 W. Nevada County	SW½, Sec. 28,T.14 S.,R. 21 W. Nevada County	NW½, Sec. 10,T.19 S., R. 20 W. Columbia County	SE½, Sec. 16, T. 19 S.,R. 20 W. Columbia County	NE%, Sec. 32,T. 16 S.,R. 15 W. Union County	SW½, Sec. 29, T.16 S.,R. 15 W. Union County	SW%, Sec. 12, T.13 S.,R.18 W. Ouachita County	SW%, Sec. 2, T. 13 S., R. 18 W. Ouachita County	SW%, Sec. 2, T. 13 S.,R.18 W. Ouachita County
UK THE STATE OF	< <	4	4	<	<	⋖	∢ .	⋖	⋖	⋖	⋖	∢	⋖	⋖	<
-	9	Q	0	0	PERMITTER HOUSE AND CONTRACTION OF THE PERMITTER AND CONTRACTION O		Ŋ	0	0	~	10	10			Marketon so the language agraps
-	2530	2140	2510	2250	NO ROBERT AND LESS OF THE PROPERTY AND ASSOCIATION OF THE PROPERTY	2140	2755	2800	2180	2420	2505	2655	2295	2605	2355
Местирунаци	2430	2110	2400	2140	N. W. Carlos Basses	2110	2650	2800	2130	2260	2415	2545	2195	2505	2245
	2380	2080	2350	2090	2910	2080	2555	2775	2080	2080	2305	2445	2100	2415	2140
and mountain	6720 8340 11920	5550 10330 11620	4670 8540 11890	5010 8870 11410	4130 6440 11260	5990 10820 11950	5726 9330 12169	4390 6784 12006	6580 11226 13322	6384 10448 13374	6732 10930 13191	6142 9592 13076	6641 10893 12789	6179 10433 12501	6557 11199 12954
	29.1 14.7 21.1	52.2 20.7 23.4	49.0 15.9 22.2	49.4 19.1 24.5	41.5 14.8 26.0	51.4 21.1 23.4	44.4 16.3 21.3	39.1 12.0 21.2	45.4 14.6 17.4	42.5 13.0 16.6	43.6 15.4 18.6	40.9 14.0 19.1	45.1 17.0 20.0	46.3 17.1 20.4	46.5 16.5 19.1
wantraine	0.9	1.0	0.8	0.7	0.6	0.5	0.6 1.0	0.5	0.5	0.5	0.6	0.5	1.0	1.0	1.3
CERTIFICATION OF THE PERSON OF	39.7 49.2 70.4	33.7 62.7 70.5	27.3 49.9 69.4	30.4 53.9 69.3	24.1 37.7 65.8	35.0 63.2 69.8	33.1 54.0 70.4	26.0 40.1 71.0	36.5 62.2 73.9	35.1 57.5 73.6	37.4 60.7 73.3	34.2 53.4 72.7	37.6 61.6 72.4	35.3 59.7 71.5	37.0 63.1 73.0
	5.3 5.9	4.7	7.1 3.9 5.4	7.0 3.8 4.9	6.3 6.3	7.6 4.7 5.2	0.4.0 0.6.0	5.9 3.0 5.4	7.9 5.7 6.7	5.7	7.4 5.1 6.1	6.8 4.4 6.0	7.2	7.5 5.0 6.0	5.0
- Mattenhannacymer	0.42	0.15	0.74 1.36 1.89	0.15 0.27 0.34	0.24 0.37 0.65	0.29 0.52 0.58	0.52 0.85 1.11	0.30 0.46 0.81	0.47 0.81 0.96	0.69 1.13 1.45	0.33 0.53 0.64	0.41	0.34 0.55 0.65	0.33 0.56 0.67	
	0.50	0.01 0.02 0.03	0.01	0.02	0.06 0.10 0.17	0.01 0.02 0.02	0.16 0.26 0.34	0.07	0.02 0.04 0.05	0.35 0.58 0.74	0.10	0.08	0.12	0.09	
0	0.05	0.01	0.01 0.02 0.03	0.0	0.01	0.01 0.02 0.02	0.01	0.01	0.01 0.02 0.03	0.01	0.01	0.01	0.01	0.01	The Control of the Co
Maria de Santa de Caración de	0.1.7.	0.3	8.4.6	0.2	0.3	0.3	1.1	0.6	0.5	1.0	0.7	0.5	0.5 0.8 0.9	0.7	0.0
Charles States States	24.2	6.0	15.4	12.6	27.4	9.5	14.3 23.3	28.1	9.2	13.4	10.6	17.1	9.0	9.8	7.9
***************************************	24.4 30.2 43.2	23.9 44.6 50.2	17.8 32.6 45.3	21.7 38.5 49.4	13.4 20.8 36.3	24.7 44.6 49.3	21.6 35.2 45.8	16.6 25.6 45.2	18.8 32.1 38.0	18.2 29.8 38.2	19.2 31.2 37.6	17.6 27.6 37.6	21.8 35.6 41.8	21.7 36.7 43.9	21.5 36.7 42.4
entition of the second	32.0 39.7 56.8	23.8 44.3 49.8	21.5 39.3 54.7	22.2 39.3 50.6	23.3 36.4 63.7	25.4 45.9 50.7	25.5 41.5 54.2	20.0 30.9 54.8	30.6 52.2 62.0	29.5 48.3 61.8	31.8 51.7 62.4	29.3 45.8 62.4	30.2 49.6 58.2	27.7 46.8 56.1	29.2 49.8 57.6
Anomirochus	19.4	46.3	45.3	43.5	35.9	44.7	38.6	35.3	41.4	38.9	38.4	36.0	39.0	40.8	4.
-			The state of the s	The state of the s	- Committee of the comm		24	6	35	34	23	ço O	26	28	28
-	428	200	0 0 0	377	- 00	- 00	~ 0 m	- 00	428	- 00	400	~ 0 m	~ 0 m	22 -	200
	K-63977	K-63978	K-63979	К—63980	K-63981	K-63982	K-73195	K-73196	K-70601	K-70602	K-72716	K-72717	K-72719	K-72720	K-72721
0	U	O	O	O	O	U	O	O	O	O	O	O	U	U	O
	89	28	20	5	24	12	18	35	72	42	52	36	36	32	20
***************************************	74		76		77	78	4		35	36	2 2	55	75	76	- Affertable Language

TABLE 1 -- PROXIMATE AND ULTIMATE ANALYSES OF LIGNITE IN ARKANSAS

			Remarks	SW½, Sec. 17, T. 3 S., R.14 W. Saline County	NW¼, Sec. 8, T. 3 S., R. 14 W. Saline County	NW½, Sec. 8, T. 3 S., R. 14 W. Saline County	SW½, Sec. 13, T. 4 S., R. 14 W. Grant County	NE½, Sec. 17, T.19 S.,R. 20 W. Columbia County	SW¼.Sec. 17, T.19 S., R. 20 W. Columbia County	SW½, Sec. 9, T. 19 S., R. 19 W. Columbia County Hole No. Atlanta 1	NW½, Sec. 11, T.19 S.,R. 20 W. Columbia County Hole No. Special 3	NW½, Sec. 20, T.19 S.,R.20 W. Columbia County	SW¼, Sec. 1, T. 19 S., R. 20 W. Columbia County
-		t/ ses	Source of analy	\ \ \	∠ Ø	∠ S	δ Θ	 ✓	8 O	A S O T	4 201	<u> </u>	8 O
Γ	•	оИ хер	ri gnillews ee17								ovienne blovig sankermaspotosynar		
	• o (Fluid enuterequet	2800	2355	2355	2800	2555	2800	2415	2300	2800	2255
	Fusibility of ash (^O F.)		Softening substance	2755	2265	2245	2800	2455	2800	2310	2210	2800	2155
	Fus	noit	smvoteb isitini evutsreqmet	2645	2155	2155	2715	2345	2720	2195	2120	2800	2065
			Btu/lb.	6393 10299 12968	6380 10663 12759	5318 10205 12163	2224 3441 10187	6975 11327 13259	3876 5563 12517	7093 11874 13180	6766 10988 13057	5840 9535 13177	6018 11168 13334
			Oxygen	43.5 15.8 19.9	45.8 16.9 20.3	52.2 18.5 22.1	37.6 9.6 28.5	43.9 15.7 18.4	33.0 8.7 19.6	45.7 16.6 18.4	44.0 16.0 19.0	42.0 12.4 17.1	49.0 17.8 17.8
יייייייייייייייייייייייייייייייייייייי			Nitrogen	0.5 0.7 0.9	0.5	0.7	0.3 0.4 1.3	0.5	0.3 0.9	0.6 1.0	0.6	0.5 0.8 1.1	0.5
	so.		Carbon	35.7 57.5 72.4	36.2 60.5 72.4	30.9 59.3 70.7	13.3 20.6 61.1	38.1 61.9 72.5	21.4 30.7 69.0	39.4 65.9 73.2	37.8 61.5 73.0	32.3 52.8 72.9	33.4 62.0 74.0
	Ultimate analyses		Hydrogen	7.0 4.5 5.7	7.1	7.5 4.2 4.9	5.6 2.5 7.5	7.9 5.9 6.9	5.7	7.9 5.7 6.3	7.4 5.1 6.0	7.2 4.7 6.5	0.8.0
	ltimate	.	oinsgriO	0.46 0.75 0.94	0.45 0.76 0.90	0.50	0.21 0.32 0.95	0.48 0.79 0.92	0.32	0.38	0.29 0.47 0.56	0.73 1.19 1.64	0.25 0.46 0.55
	5	Forms of Sulphur	Pyritic	0.04 0.07 0.09	0.06	0.06	0.08 0.13 0.37	0.08	0.56	0.13	0.13	0.29	0.09
	ê		Sulphate	0.02 0.03 0.03	0.02 0.03 0.04	0.01 0.03 0.03	0.03 0.05 0.14	0.02	0.02 0.03 0.07	0.01	0.01	0.03 0.05 0.06	0.03
			Sulphur	0.5 0.8 1.1	0.5	0.6	0.3 0.5 1.5	0.6	0.9 1.3 2.9	0.5	0.7	1.0	0.7
	0		чsА	12.8 20.6	9.8	8.4	42.8	9.0	38.7 55.6	9.9	9.8 15.8	16 .9 27.6	16.2
	Proximate analyses		Fixed nodisa	19.1 30.7 38.7	19.2 32.1 38.4	20.3 39.0 46.4	7.3 11.3 33.4	19.1 31.0 36.3	8.6 12.2 27.5	21.6 36.2 40.1	19.4 31.5 37.4	16.5 27.0 37.2	16.1 29.9 35.7
	T		eliteloV 1ettem	30.2 48.7 61.3	30.8 51.5 61.6	23.4 44.9 53.6	14.5 22.5 66.6	33.5 54.4 63.7	22.4 32.2 72.5	32.2 53.9 59.9	32.4 52.7 62.6	27.8 45.4 62.8	29.0 53.9 64.3
			Moisture	37.9	40.2	47.9	35.4	38.4	30.3	40.3	38.4	38.8	46.1
		Portunity of the Assessment	Air-drying loss	4		30	26	28	23	34	24	30	27
-			€\ noitibnoO	22 -	977	4 2 8	977	977	957	327	- 7 %	977	- 0 w
			U. S. Bur. Mines Iab No.	K-73197	K-73198	K-73199	K-74073	K-74072	K-74071	K-74280	K-74278	K-74074	K-74070
-	Military	7.5	eldmss to esti2	O	O	O	O	O	O	O	O	O	v
		(\$91	Thickness (inch	35	96	24	30	36	25	20	65	30	69
		[<u>]</u> 19	Locality Numb	92	95	and the state of t	96	146	147	A.1	S.3	148	<u>R</u>

			*****************	Almanda ay											
-	NW½, Sec. 6, T. 19 S., R. 19 W. Columbia County	NW½, Sec. 5, T. 19 S., R. 19 W. Columbia County	NW%, Sec. 4, T. 19 S., R. 19 W. Columbia County	NE½, Sec. 3, T. 19 S., R. 19 W. Columbia County	NW%, Sec. 2, T. 18 S., R. 19 W. Columbia County	SW½, Sec. 26, T.17 S.,R 18 W. Union County	NE½, Sec. 36,T. 17 S.,R. 18 W. Union County	NW%, Sec. 22 T.19 S.,R 27 W. Miller County Sample from Hole No. 226 A	SW½, Sec. 32, T.13 S.,R. 24 W. Hempstead County	SW% , Sec. 32,T.13 S.,R 24 W. Hempstead County	SW%, Sec. 32,T.13 S.,R. 24 W. Hempstead County	SW½, Sec. 25,T.13 S.,R.25 W. Hempstead County	SE½, Sec. 3, T. 14 S., R. 25 W. Hempstead County	NE¼, Sec. 1, T. 10 S., R. 20 W. Clark County	NW%, Sec. 6., T. 10 S., R.19 W. Clark County
	4	⋖	∢	∢	⋖	<	∢	⋖	<	Ø	⋖	ď	⋖	⋖	∢
	10			MARK STATE OF THE		angraph and our section of the secti		·	ON DAMPE OF THE PARTY OF THE PA	edensi openberski kremen	ATTICLE SAME PACKAGE	NAVO APPORTO LIGIDA DE PRESIDENTE	Victoria de Torre de La consensa de		
-	2745	2800	2800	2245	2700	2910	2910	2880	2730	2370	2910	2450	2440	2270	2080
- Contraction of the Contraction	2655	2800	2770	2165	2595	2910	2910	2630	2350	2250	2680	2350	2250	2230	2050
- Contraction	2555	2800	2655	2070	2495	2910	2710	2580	2200	2190	2560	2300	2200	2190	2020
mac 140 4645	5184 8631 12359	6740 11569 13025	6550 9865 13257	6673 10435 13142	2254 3115 9317	4681 6863 13144	5152 8376 12553	4335 6356 11908	4995 8115 12199	5573 9488 12607	4680 6885 12422	6946 10960 12527	6228 9739 12612	5915 9869 12819	6205 10461 12479
0	44.1 14.4 20.6	47.1 17.2 19.4	38.9 13.6 18.2	40.7 13.6 17.1	33.7 12.6 37.6	33.5 7.7 14.7	43.1 14.4 21.6	35.5 10.7 20.0	43.6 15.3 23.0	45.8 15.6 20.7	35.4 10.2 18.5	43.5 17.3 19.8	41.4 14.6 18.9	44.2 14.2 18.5 7	46.5 17.4 20.8
MICHIEL PROGRAM	0.6	1.0	0.6	0.5	0.3	0.4	0.5 0.8 1.2	0.5 0.8 1.4	0.5	0.5	0.5	0.8	1.0	1.0	1.1
4F40genes	29.9 49.7 71.2	37.4 64.2 72.3	36.2 54.6 73.3	37.1 58.0 73.1	13.0 17.9 53.6	26.4 38.7 74.0	28.6 46.5 69.7	25.2 37.0 69.3	28.5 46.3 69.6	31.6 53.8 71.5	27.7 40.7 73.5	40.3 63.6 72.7	36.3 56.8 73.6	33.9 56.5 73.4	35.5 59.8 71.4
	6.8 4.0 5.7	8.0 5.7 6.5	0.4.0 0.8.7.	7.1	4.4 1.9 5.6	3.58 4.4.6	6.9 4.2 6.4	5.5 2.9 5.4	6.4 3.4 5.1	7.1 4.2 5.6	5.7 3.1 5.6	7.0 4.6 5.3	6.7 4.2 5.4	7.2 4.5 5.8	7.3
No. 14 Confederation on	0.29 0.48 0.69	0.29 0.51 0.57	0.30	0.54 0.85 1.07	0.09 0.12 0.36	0.54 0.79 1.52	0.33 0.53 0.80	0.56 0.81 1.53	0.34 0.55 0.83	0.36 0.61 0.81	0.28 0.42 0.75	0.43 0.68 0.78	0.34 0.52 0.68	0.39 0.66 0.86	0.45
***************************************	0.08	0.06	0.13 0.20 0.26	0.82 1.28 1.62	0.34 0.48 1.42	0.71 1.04 1.99	0.02 0.03 0.04	0.74 1.08 2.03	0.06 0.10 0.16	0.08 0.13 0.17	0.12 0.18 0.33	0.03 0.05 0.05	0.02	0.03	0.02 0.03 0.03
	0.03	0.02	0.01	0.02 0.03 0.03	0.01	0.00	0.10	0.11 0.16 0.30	0.00	0.00	0.02 0.02 0.04	0.01	0.01	0.00	0.02 0.03 0.04
NOT NOT THE OWNER.	0.7	0.6	0.7	1.4 2.2 2.7	0.6	2. 1. S.	0.7	1.4 2.1 3.9	0.7	0.4 0.7 1.0	0.6	0.5 0.7 0.8	0.4 0.6 0.7	0.4	0.5
#MANAGEMENT	30.2	6.5	17.0	13.2	48.2	32.6 47.8	20.5 33.3	31.8 46.6	20.6 33.5	14.5 24.7	30.3	7.9	14.6	13.8	9.6
0	16.3 27.1 38.8	20.8 35.5 40.0	18.5 27.9 37.5	18.0 28.2 35.5	10.6 14.6 43.9	13.0 19.1 36.6	15.2 24.7 37.0	15.9 23.4 43.7	19.5 31.6 47.5	19.9 34.0 45.1	16.7 24.4 44.1	26.5 41.7 47.7	22.5 35.1 45.5	24.4 40.8 53.0	22.9 38.7 46.2
gestate-e-ret-	42.7 61.2	31.0 53.3 60.0	30.9 46.5 62.5	32.8 51.2 64.5	13.6 18.8 56.1	22.6 33.1 63.4	25.8 42.0 63.0	20.5 30.0 56.3	21.5 34.9 52.5	24.3 41.3 54.9	21.0 31.0 55.9	29.0 45.8 52.3	26.9 42.1 54.5	21.7 36.2 47.0	26.8 45.1 53.8
LANGERGERA	39.9	41.7	33.6	36.0	27.6	31.8	38.5	31.8	38.4	41.3	32.0	36.6	36.0	40.1	40.7
-	26	31	0	8	20	23	32	9	26	32	23	24	24	23	35
rykalatoripum arri	200	- 00	- N M	977	377	977	- 00	428	4 2 8	- 0 8	377	227	907	- 0.6	- 2 8
Patrockers	K-74075	K-74076	K-74276	K-74277	K-74279	K-77612	K-77613	K-77614	K-77615	K-77616	K-77617	K-77618	K-78000	K-78001	K-78002
U,	O	O	O	O	O	O	O	U	O	O	O	ပ	U	U	O
Service Service	9 47	4	65	3 72	34	88	36	65	30	22	25	30	45	8	36
	50	160	162	163	177	187	188	226	245			249	252	266	269

TABLE 1 -- PROXIMATE AND ULTIMATE ANALYSES OF LIGNITE IN ARKANSAS

	-		>	>	>	>	<u>₹ & ₹</u>	>	>	>	>	>
		Remarks	SE%, Sec. 25, T. 9 S., R. 19 W. Clark County	SW½, Sec. 29, T. 9. S., R. 18 W. Clark County	NW½, Sec. 36, T. 9 S., R. 19 W. Clark County	NW%, Sec. 25, T.9 S., R. 19 W. Clark County	NW%, Sec. 20,T. 10 S., R. 18 W. Clark County. Analysis by Williams Brothers Laboratory.	SW½, Sec. 13, T. 10 S.,R. 19 W. Clark County	NW½, Sec. 13, T.10 S., R. 19 W. Clark County	NW%, Sec. 13, T.10 S., R.19 W. Clark County	NE½, Sec. 33, T. 13 S.,R. 23 W. Hempstead County	SE½, Sec. 29, T. 13 S.,R. 23 W. Hempstead County
	ty/ ses	Source of analy	∢	∢	⋖	⋖	⋖	⋖ .	⋖	⋖	∢ ,	4
	oM xeb	ni gnillews ee17						MASSES CHESTER CONTROL OF THE PARTY OF THE P	overednos escurrición de la sevenidad	SUPERIOR OF THE PROPERTY OF TH		
of (Fluid enuterequet	2650	2910	2190	2140	2410	2780	2160	2840	2300	2300
Fusibility of ash (^O F.)		Softening enuteredmet	2600	2780	2160	2110	2340	2480	2110	2630	2100	2180
F	noi	Initial deformat enuperature	2550	2680	2140	2080	2260	2430	2060	2580	2050	2130
		Btu/lb.	5300 8585 12481	5636 9177 12588	6246 10718 12561	6873 10598 12551	6450 10638 12696	5759 9999 12243	5703 10608 12353	4541 7026 12493	6124 10230 12702	7218 10245 12315
		Oxygen	42.5 13.7 19.9	43.4 14.8 20.3	47.3 17.5 20.6	42.4 17.2 20.4	11.2	47.7 17.3 21.2	50.5 17.5 20.4	38.6 11.0 19.6	44.6 14.9 18.5	38.4 17.2 20.7
		Nitrogen	0.0	0.6	0.7	0.6	<u>←</u> ∞	0.6	1.1	0.5 0.8 1.3	1.1	0.9 1.2 1.5
88		Carbon	31.0 50.3 73.1	32.3 52.6 72.2	35.6 61.1 71.6	39.6 61.1 72.3	35.2	33.4 57.9 70.9	33.3 62.0 72.2	26.4 40.8 72.6	35.8 59.8 74.2	42.1 59.8 71.9
Ultimate analyses		Hydrogen	6.5 3.6 5.2	6.6 5.3	7.3 4.5 5.3	6.8 5.2	2.7	7.1	7.5 4.4 5.1	3.1 5.5	7.0 4.2 5.2	6.2 4.2 5.0
Itimate		Organic	0.17 0.28 0.41	0.26 0.43 0.59	0.49 0.85 0.99	0.45 0.69 0.82	0.54	0.37 0.65 0.79	0.37 0.69 0.80	0.32 0.49 0.87	0.32 0.54 0.67	0.50 0.71 0.85
ס	Forms of Sulphur	Pyritic	0.01 0.02 0.02	0.17 0.28 0.39	0.09 0.15 0.18	0.09 0.14 0.16	0.01	0.32 0.56 0.69	0.10 0.19 0.22	0.02 0.03 0.05	0.03 0.04 0.05	0.07 0.10 0.12
	П с	Sulphate	0.01 0.02 0.03	0.00	0.00	0.01 0.02 0.02	0.01	0.01 0.02 0.03	0.01 0.03 0.03	0.02 0.02 0.04	0.01 0.01 0.02	0.02
		Sulphur	0.2 0.3 0.5	0.7	0.6 1.0	0.6 0.8 1.0	0.5	0.7 1.2 1.5	0.5	0.3 0.5 1.0	0.4 0.6 0.7	0.6
		daA	19.3	16.6	8.6	10.1 15.6	9.8	10.6 18.3	7.6	28.3 43.8	11.7	11.8
Proximate analyses		Pexi7 nod1sɔ	20.1 32.7 47.5	20.6 33.4 45.9	23.4 40.2 47.2	25.9 39.9 47.3	21.5 35.5 42.4	22.9 39.9 48.9	22.1 41.1 47.8	15.7 24.3 43.3	23.4 39.1 48.6	28.5 40.5 48.7
Pra		eliteloV 19ttsm	22.3 36.1 52.5	24.2 39.5 54.1	26.3 45.1 52.8	28.8 44.5 52.7	29.2 48.2 57.6	24.1 41.8 51.1	24.1 44.8 52.2	20.6 31.9 56.7	24.8 41.4 51.4	30.1 42.7 51.3
		ərutsioM	38.3	38.6	7.14	35.2	39.4	42.4	46.2	35.4	40.1	29.6
		Air-drying loss	25	73	78	თ		33	33	73	19	· o
		Condition (3	-00	- 0 0	- 0 m	- 0 m	- 0 m	400	~ 7 m	- 7 E	- 2 6	- 0 w
	100000000000000000000000000000000000000	U. S. Bur. Mines Iab No.	K-78003	K-78004	K-78005	K-78006		K-79853	K-79854	K-79855	K-84800	K-84801
	7.5	eldmas to esi2	U ·	O	O	O	U	O	ပ	ပ	U	O
	(\$8)	Thickness (inch	39	42	32	96	24	72	22	24	32	<u> </u>
	[<u>]</u> 19	Locality Numbe	275	276	285	286	290	297	298	the with entitle orgine you was an and	208	305

	and the second second second second	minerallo Mineral Gap paper la	en transmissioner en som en plante en											
	7, T. 13 S., R.22 W. Ity	1, T. 13 S., R.23 W.	, T. 13 S., R. 18 W.	32, T. 14 S., R.19 W.	6, T. 10 S., R. 11 W. County	31,T. 10 S., R. 12 W.	T. 14 S., R. 14 W.	6, T. 13 S., R. 13 W.), T. 13 S.,R. 13 W.	T. 14 S., R.13 W.	T. 14 S., R. 13 W.	T. 13 S., R. 13 W.	, T. 12 S., R.13 W.	, T. 10 S.,R. 13 W
- Control of the Cont	NE½, Sec. 17,7 Nevada County	NW%, Sec. 11, Nevada County	SE½, Sec. 32, T. Ouachita County	NE½, Sec. 32, T Ouachita County	SE½, Sec. 6, Cleveland Co	SE½, Sec. 31, Dallas County	NE¼, Sec. 4, T. Calhoun County	SE¼, Sec. 6, T. Calhoun County	NE%, Sec. 19, T Calhoun County	NW½, Sec. 4, T Calhoun County	SW%, Sec. 3, T. Calhoun County	SE¼, Sec. 15, T. Calhoun County	SW¼, Sec. 20, T Calhoun County	NW%, Sec. 36, Dallas County
	4	4	⋖	< <	⋖	∢	⋖	∢	٨	∢	⋖	⋖	⋖	<<
							· ·		The state of the s		***************************************		-	KONFORMSER OF DE KOLINGS THAN SERVING
	2410	2910	2350	2280	2390	2500	2910	2330	2410	2190	2610	2720	2510	2560
The Age of Particular	2300	2840	2300	2180	2330	2300	2785	2290	2300	2110	2520	2610	2300	2280
	2250	2740	2250	2130	2230	2250	2675	2250	2190	2000	2400	2500	2250	2230
	5933 8852 12243	4678 7465 11705	6132 10202 12726	6553 11101 12605	6254 9135 12414	5785 9281 13081	4361 5979 13116	5902 10387 12562	5595 9367 12801	6125 11030 13273	6566 10246 13452	4823 7220 12875	5520 9451 12572	4945 8021 12502
	40.4 16.6 23.0	42.9 15.5 24.3	45.0 15.8 19.7	47.1 18.1 20.6	38.2 14.9 20.2	42.8 15.0 21.1	29.5 7.5 16.5	47.7 16.5 19.9	43.8 13.5 18.4	48.0 15.2 18.2	40.2	36.5 10.5 18.6	46.1 15.6 20.7	13.0
-	0.0	0.5	0.6	0.8	0.8	0.5 0.8 1.2	0.5	0.6	0.5	0.5 1.0	0.5 0.8 1.0	0.6	0.6	0.0
P-00/000 2004/1994440	34.1 50.9 70.3	27.5 43.9 68.8	35.0 58.3 72.7	37.3 63.2 71.8	36.0 52.6 71.5	31.0 49.8 70.2	24.6 33.7 74.0	33.4 58.8 71.1	32.1 53.8 73.5	33.7 60.6 73.0	36.3 56.7 74.5	27.4 40.9 73.0	31.1 53.2 70.7	28.0 45.3 70.7
0	8.8.4.	2.5	7.2 4.6 5.7	7.5 5.0 5.7	6.4 4.2 5.7	7.1 4.6 6.5	5.4 3.3 7.3	7.5 4.7 5.7	7.1 4.3 5.9	8.1 5.7 6.8	7.2 5.1 6.6	6.0 3.4 6.1	7.0	5.0 5.0 5.0
- National State of S	0.64	0.44	0.29 0.48 0.59	0.27 0.46 0.52	0.40 0.58 0.79	0.41 0.67 0.94	0.24 0.33 0.73	0.65 1.14 1.38	0.37 0.62 0.85	0.30 0.54 0.64	0.32 0.49 0.65	0.33 0.50 0.89	0.52 0.90 1.19	0.58
Formaconstanting	0.05	0.18	0.01 0.02 0.02	0.01	0.13 0.19 0.26	0.02 0.04 0.05	0.11 0.15 0.33	0.19 0.34 0.41	0.05	0.04	0.04	0.06	0.20	0.07
	0.01	0.02	0.01	0.01 0.02 0.02	0.00	0.01	0.01	0.01	0.01	0.01	0.00	0.01 0.01 0.02	0.02	0.02
	0.5	0.6	0.5	0.3	0.5	0.7	0.5	0.9 1.5 8.	0.7	0.3	0.6	0.6	1.3	1.1
, hadron or had a supply	18.6	22.7 36.2	2. 0. 0. 0.	11.9	18.1	18.1	39.7	9.8	16.0	9.4	15.3	29.3	14.5	35.8
0	23.4 35.0 48.3	19.7 31.4 49.2	20.1 33.5 41.8	23.0 38.9 44.2	20.6 30.0 40.8	15.0 24.1 34.1	10.2 14.1 30.9	19.1 33.6 40.6	17.6 29.5 40.3	17.3 31.3 37.7	17.7 27.7 36.4	14.2 21.3 37.9	18.2 31.1 41.4	16.3 26.4 41.1
province	25.0 37.3 51.7	20.3 32.4 50.8	28.1 46.7 58.2	29.0 49.2 55.8	29.8 43.6 59.2	29.2 46.8 65.9	23.0 31.5 69.1	27.9 49.1 59.4	26.1 43.7 59.7	28.8 51.8 62.3	31.1 48.5 63.6	23.3 34.8 62.1	25.7 44.1 58.6	23.3
j. ruro monerciano.	33.0	37.3	39.9	41.0	31.5	37.7	27.1	43.2	40.3	44.5	35.9	33.2	41.6	38.3
	0	20	50	24	10	10	22	16	78	39	27	56	20	0
	- 0 m	- 00	- 000,	- 0 %	-26	227	- 26	22 -	- 00	- 0 6	- 7 6	-26	~ N W	- 00
	K-84802	K-84803	K-84804	K-84805	K-84806	K-84807	K-88838	K-84808	K-88839	K-88840	K-88841	K-88842	K-84809	K-84810
U	O .	U	U	U	ပ	O	ပ	O	O	U	O	O	O	O
hadron real states, strong	66 /	40		32	36	45	6	8	71	32	89	24	20	23
landered supplementaries	317	320	342	361	390	398	014	431	433	440	441	453	473	489

TABLE 1 -- PROXIMATE AND ULTIMATE ANALYSES OF LIGNITE IN ARKANSAS

,						MANAGEMENT SECRETARION OF THE SE			 	
		Remarks	SW%, Sec. 3, T. 9 S., R. 13 W. Cleveland County	SW½, Sec. 10, T. 8 S., R. 15 W. Dallas County	SW½, Sec. 36, T. 9 S., R. 17 W. Dallas County	NE½, Sec. 3, T. 5 S., R. 14 W. Grant County				
	₽/ ses/	Source of analy	٧	∢	∢	∢				
	oM xebr	Free swelling in			CONSTRUCTION OF THE SECOND	quaetae monaqui azanculum cirin risi	m constant representative corpora		 	
o Ç		Fluid supperature	2250	2800	2590	2910	a galgar garlann garraigh e ain a beann an ainm an a	NO ACCOUNTS OF		entropianos suprimumos parte.
Fusibility of ash (^o F.)		Softening enutereqmet	2170	2800	2510	2750				nendanourbanearaphine Materialia
T.	noi	smrofeb lsitinl erutsreqmet	2050	2690	2400	2640				
9 2.7 7		Btu/lb.	6077 11202 12846	4122 6566 12439	4984 8170 12560	4169 7849 11637			7	
		Oxygen	49.5 16.2 18.6		42.2 12.4 19.1	49.5 14.8 22.0				
		Nitrogen	0.6 1.1		0.5	0.4 0.8 1.2				
ς,		Carbon	34.5 63.6 72.9		28.1 46.1 70.8	24.2 45.6 67.6		· .		
analyse		Hydrogen	8.1 5.6 6.4		7.1 4.6 7.0	7.2 3.8 5.6			×	
Ultimate analyses	4 .	Organic	0.32 0.59 0.68	0.38 0.61 1.16	0.02	0.97 1.83 2.71	2			
ם ס	Forms of Sulphur	Pyritic	0.05 0.10 0.11	0.11	0.66 1.08 1.66	0.31 0.58 0.86				
	1.00	Sulphate	0.00 0.00 0.00	0.01	0.01	0.01	decision, and a second	spelik sur sek want interferent	and the state of t	
		Sulphur	0.7	0.07	1.1	1.3 3.6				
		dsA	6.9	29.6	21.3 35.0	17.3 32.6				
Proximate analyses	The second secon	Fixed nodisa	20.1 37.0 42.4	10.6 16.7 31.7	16.0 26.1 40.2	16.8 31.5 46.8		-		,
Pro		eliteloV rettem	27.2 50.2 57.6	22.6 36.1 68.3	23.7 38.9 59.8	19.0 35.9 53.2				
		Moisture	45.8	37.2	39.0	46.9				
		Air-drying loss	4	33	32	43			,	
		€\ noi3ibno⊃	- 0 m	-00	- N W	997				
3 3		U. S. Bur. Mines Iab No.	K-88843	K-88844	K-88845	K-88846				
	75	Site of sample	O	U	Ú	U				
	(\$9)	Thickness (inch	30	25	9	30				
	f <u>/</u> 19	Locality Numb	527	543	587	809		1		

^{1.} See county location maps.

^{2.} C, core sample.

 ^{1,} as received; 2, moisture free; 3, moisture and ash free.
 A, laboratory report for Arkansas lignite investigations.

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BIBLIOGRAPHY

- American Society for Testing Materials, 1939, Standard Specifications for Classification of Coals by Rank: ASTM Standards, Part 3, D388-38.
- Aries, R. S. and Associates, 1957, The Chemical Process Industry in Arkansas: unpublished report on file at Ark. Geol. Comm.
- Arkansas Geological Survey, 1942, Mineral Resources of Montgomery, Garland, Saline and Pulaski Counties: County Mineral Report 3.
- Arkansas Industrial Research Center, 1957, Montan Wax Survey: unpublished report on file at Ark. Geol. Comm.
- Bramlette, M. N., 1936, Geology of the Arkansas Bauxite Region: Arkansas Geological Survey Information Circular 8.
- Branner, John C., 1908, The Clays of Arkansas: U. S. Geological Survey Bull. 351.
- Call, R. Ellsworth, 1891, The Geology of Crowley's Ridge: Arkansas Geological Survey Annual Report for 1889, Vol. 2.
- Dane, Carle H., 1929, Upper Cretaceous Formations of Southwestern Arkansas: Arkansas Geological Survey, Bull. 1.
- Gordon, Mackenzie, Jr., et al., 1958, Geology of the Arkansas Bauxite Region: U. S. Geological Survey Professional Paper 299.
- Hahn, A. D. and Reynolds, B. M., August, 1952, Lignite in the Arkansas-White-Red River Basins: Preliminary Report, U. S. Inter-Agency Committee on Arkansas-White-Red River Basins and Geology Work Group.

- Haley, Boyd R., 1960, Coal Resources of Arkansas: U. S. Geological Survey Bull., 1072-P.
- Harris, Gilbert D., 1894, The Tertiary Geology of Southern Arkansas: Arkansas Geological Survey, Annual Report for 1892, Vol. 2.
- Hill, Robert T., 1888, The Neozoic Geology of Southwestern Arkansas: Arkansas Geological Commission Annual Report for 1888, Vol. 2.
- Lamaye, Dilip R. et al., 1977, Ozark Regional Commission Regional Energy Alternative Study, Final Report.
- Schmidt, Richard A. and Hill, George R., 1976, Coal: Energy Keystone: Annual Review of Energy, Vol. 1., pp. 37-63.
- Selvig, W. A. and Ode, W. H.,1950, American Lignites: Geolgical Occurrence, Petrographic Composition, and Extractable Waxes: U. S. Bureau of Mines Bull. 482.
- Smothers, William J., and Yao, Chiang, 1952, Differential Thermal Curves of Selected Lignites, Arkansas: Economic Geology, Vol. 47, pp. 384-396.
- Stephenson, L. W. and Crider, A. L., 1916, Geology and Ground Waters of Northeastern Arkansas: U. S. Geological Survey Water-Supply Paper 399.
- Stroud, Raymond B. et al., 1969, Mineral Resources and Industries of Arkansas: U. S. Bureau of Mines Bull. 645.
- Taff, Joesph A., 1899-1900, Preliminary Report on the Camden Coal Field of Southwestern Arkansas: U. S. Geological Survey, 21st Annual Report, Part II.
- White, David et al., 1913, The Origin of Coal: U. S. Bureau of Mines Bull. No. 38.
- Williams, Norman F. and Plummer, Norman, 1951, Clay Resources of the Wilcox Group in Arkansas: Arkansas Geological Commission Information Circular No. 15.
- Woodward, Mac B. and Gilbreath, Lonnie, 1976, Arkansas Lignite Characterisitcs: Arkansas Geological Commission report prepared for U. S. Bureau of Mines.