Geological Survey of Alabama

WALTER BRYAN JONES, State Geologist

BULLETIN No. 43

Magnetic Investigations in Southwest Alabama

By

J. BRIAN EBY

and

E. G. NICAR

University, Alabama

June, 1936

Geological Survey of Alabama

WALTER BRYAN JONES, State Geologist

BULLETIN No. 43

Magnetic Investigations in Southwest Alabama

By

J. BRIAN EBY

and

E. G. NICAR

University, Alabama

June, 1936

WETUMPKA PRINTING CO.
Printers and Publishers
Wetumpka, Ala.
1936

LETTER OF TRANSMITTAL

University, Alabama,
June 15, 1936.

Honorable Bibb Graves,
Governor of Alabama,
Montgomery, Alabama.

Sir :—I have the honor to transmit herewith the manuscript of a report on the "Magnetic Investigations in Southwest Alabama," by J. Brian Eby and E. G. Nicar, with the request that it be printed as Bulletin Number 43 of the Geological Survey of Alabama.

Much progress has been made in recent years in locating, by geophysical methods, deep-seated geological structures, which might favor accumulations of salt, oil or gas. These methods have many advantages over the old ways of determining structures by surface outcrops, excavations and wells.

This bulletin is the first publication embodying the results of geophysical prospecting in Alabama. The work was done by magnetometer, the least expensive of the three principal geophysical methods, and it covers only a small part of the state, but it is hoped that it will be the forerunner of more detailed studies in additional areas, which may open up new mining fields. It was made possible by the assistance of the Alabama Power Company and federal relief funds, as stated in the preface, and now gratefully acknowledged.

The authors have had considerable experience in this sort of work in proven oil fields, and their statements may be accepted as authoritative.

Very respectfully,

WALTER B. JONES,
State Geologist.

TABLE OF CONTENTS

Preface 9
Introduction 11-12
Topography 12
Geology 12–13
The Magnetometer 13-17
Results of magnetic investigations 17-19
Well logs 21–41
- Southern Craft Corp. No. 1, Baldwin County 21–25
- Fort Morgan No. 1, Baldwin County 25–26
- Long Bell Lumber Co. No. 1, Choctaw County 26–28
- Robinson & Greer, Choctaw County 28–30
- Scotch Lumber Company No. 1, Clarke County 30–34
- Hobson-Boykin No. 1, Clarke County 34–36
- James Bethel No. 1, Mobile County 36–37
- R. C. Avant & Son No. 1, Washington County 38-41

Remarks 41

ILLUSTRATION

Plate 1, Magnetic Map of Southwest Alabama, folded .....

GEOLOGICAL SURVEY CORPS

WALTER B. JONES, Ph.D.	State Geologist
STEWART J. LLOYD, Ph.D.	Geologist
J. BRIAN EBY, Ph.D.	Geologist
WINNIE McGLAMERY, M.S.	Paleontologist
E. G. NICAR	Geophysicist
ROLAND M. HARPER, Ph.D.	Geographer
JAMES D. HAYS, B.S.	Chemist*
ELIZABETH J. DeJARNETTE, A.B.	Secretary
MARY CLAIRE RYAN	File Clerk
ELLEN HILDRETH, A.B.	Librarian

ALABAMA MUSEUM OF NATURAL HISTORY CORPS

WALTER B. JONES, Ph.D.	Director
DAVID L. DeJARNETTE, B.S.	Curator
JAMES T. DeJARNETTE, B.S.	Assistant*
H. P. LODING, D.Sc.	Entomologist

*On temporary leave of absence.

BOARD OF REGENTS

COL. R. A. MITCHELL, Birmingham	Honorary Chairman for Life
LINDLEY C. MORTON, Birmingham	Chairman
JAMES A. ANDERSON, University	Vice-Chairman
WALTER B. JONES, University	Secretary

J. L. Andrews, Sheffield
Frank H. Crockard, Birmingham
George H. Denny, University
Samuel L. Earle, Birmingham
R. E. Fletcher, Osceola, Arkansas
Sam Friedman, Tuscaloosa
Mrs. W. F. Garth, Huntsville
Charles B. Glenn, Birmingham
Irvin H. Griffin, Moundville
William L. Haltom, Durham, N. C.
Victor Hanson, Birmingham
R. I. Ingalls, Birmingham
Robert Jemison, Jr., Birmingham
Crawford Johnson, Birmingham
Fain W. King, Paducah, Kentucky
H. P. Loding, Mobile
Hugh Morrow, Birmingham
Daniel Pratt, Prattville
Henry M. Pratt, Columbus, Miss.
Erskine Ramsay, Birmingham
H. C. Ryding, Birmingham
Oliver D. Street, Birmingham
Theodore Swann, Birmingham
Temple W. Tutwiler, Birmingham
D. L. DeJarnette, University

COMMITTEE ON DEPARTMENT PUBLICATIONS

HIS EXCELLENCY, BIBB GRAVES, Governor of Alabama
HON. HOWELL TURNER, Secretary of State
DR. WALTER B. JONES, State Geologist

PREFACE

For many years, there has been a great interest in that region of Alabama immediately adjacent to the Gulf Coast, from the standpoint of oil and gas possibilities. More recently thoughtful men have visualized the great benefits which would accrue to Alabama through the discovery and utilization of commercial salt deposits for the chemical industry. The Geological Survey of Alabama has not been in position to undertake a geophysical survey because of inadequate appropriations. However, four years ago, an attempt was made to work out a cooperative plan with the New Industries Division of the Alabama Power Company, Theodore Swann, Dr. J. Brian Eby, and Dr. Donald C. Barton, whereby a certain part of Southwest Alabama could be investigated by approved geophysical methods. Unfortunately, this plan could not be put into effect at the time.

With the impetus given to various branches of scientific work through the re-employment program of the Federal Government, a plan was worked out whereby this program was accomplished. It is with deep sincerity that we acknowledge our debt of gratitude to Thomas W. Martin, President of the Alabama Power Company, for financial assistance; to Thad Holt, Director, Alabama Relief Administration, for financial help in the field program; to Governor Bibb Graves of Alabama, for substantial financial aid in completing the field work; to Dr. J. Brian Eby, who gave lavishly of his time; to Theodore Swann, T. D. Johnson, Dr. S. J. Lloyd, and Dr. O. G. Thurlow for their sound advice and wise counsel in the shaping of the plans and in carrying out the program; and finally to Mr. E. G. Nicar, who performed his field work with the utmost accuracy and dispatch. All of the above named gentlemen composed an unofficial but most efficient steering committee. Without their aid and backing, it is certain that this work could not have been done.

It is our hope that the information contained in this report will result in a more thorough understanding of the problems involved in prospecting for useful minerals and materials in the region which it describes. It is likewise hoped that any exploration which may take place as a result of this report, be as honestly and faithfully done as was the task of preparing the information contained herein.

WALTER B. JONES.

MAGNETIC INVESTIGATIONS IN SOUTHWEST ALABAMA

by

J. Brian Eby
and
E. G. Nicar

INTRODUCTION

A magnetic survey of a large portion of southwest Alabama was carried out from September 6, 1934 to January 31, 1936. The work was done under the direct supervision of Dr. Walter B. Jones, state geologist, with the senior author as cooperating geologist. The field work was conducted entirely by the junior author and the instrument used was an Askania vertical variometer.

The area covered included all or portions of Mobile, Baldwin, Escambia, Conecuh, Monroe, Choctaw, Washington and Clarke counties, embracing approximately 7,000 square miles. No attempt was made to take magnetic observations in any of the larger water bodies such as Mobile Bay and Mississippi Sound.

The detailed magnetic map attached to this report shows the location of all observation stations for which the data has been checked. A number appears beside each station, which represents, in gammas, the vertical component of magnetic intensity found at that particular location. Starting from a base station at Mobile an assumed 500 gamma value was used and, therefore, all variations from this intensity are indicated by the various observations throughout the area. By joining all points of equal vertical intensity with lines (contours) the areas of high or low intensity and the direction of the various magnetic trends become apparent.

In addition to the geophysical data and for the benefit of comparing directly the effects of the Hatchetigbee anticline and the Jackson fault on the magnetic picture the axes of both these geologic features are shown. All deep wells drilled in the region are indicated, with the company names and total depths.

Before discussing either the purpose or the results of the magnetic survey of this area, it is necessary to give a brief dis-

cussion of the topography and the geology of the region. Following this a general statement of the merits of the magnetometer will be given.

TOPOGRAPHY

The general territory of this report is divided into several physiographic provinces, as indicated by Figure 37, Page 202, Special Report No. 15, Alabama Geological Survey, which outlines and names the various provinces of the state. The low flat featureless Gulf coast plain extends from the general vicinity of Mobile south. North of this coastal plain to the southern border of Choctaw and Monroe counties the topography is featured with low rolling hills covered with piney woods and scrub oak. Choctaw, Clarke and Monroe counties occur in that province designated as the Southern Red Hills and is more rugged with maximum relief of from 250 to 300 feet. The broad delta of the Mobile and Tensas rivers is a feature that can only be covered by boat transportation. It is low, marshy and subject to overflow.

GEOLOGY

The oldest known sedimentary formation in southern Alabama is the Upper Cretaceous, which is divided into four distinct formations, named from younger to older—the Ripley formation, the Selma Chalk, the Eutaw formation and the Tuscaloosa formation. It is presumed that these formations rest on basement crystalline rocks.

The Tertiary of southern Alabama is represented by the Eocene, Oligocene, Miocene and Pliocene. Named from younger to older, the separate formations of the Eocene are the Jackson formation, the Claiborne group, the Wilcox group, and the Midway formation.

The Alabama Oligocene consists of the Vicksburg group. Overlying the Oligocene is the Miocene consisting of the Pascagoula Clay, Hattiesburg Clay and the Catahoula sandstone. The Pliocene-Citronelle formation which consists of red and yellow sands and many-colored clays covers much of the territory embraced in this investigation. Since these sands are cross-bedded and only poorly stratified they serve largely to obscure the geologic features of the territory over which they lie.

The description of these formations is excellently presented by Dr. D. R. Semmes, in his work on Oil and Gas in Alabama, which was published in 1929 as special report 15 of the Alabama Geological Survey.

In this report Dr. Semmes discusses at considerable length the possibilities of salt domes existing near the Gulf coast of Alabama and the possible commercial occurrence of oil and gas in this portion of the state. He points out that there are no true live seepages of oil known in the coastal plain of Alabama. He also points out the difficulty of using surface geology in this region as a help in finding subsurface structure, and recommends the use of geophysical methods.

The more important geophysical methods are the use of reflection or refraction seismographs, the use of the torsion balance or gravimeter and the use of the magnetometer. In determining the best method to use in southern Alabama, the Alabama Geological Survey was compelled to consider not only the technical or practical results but the cost of operation. This latter consideration eliminated all possibility of the use of either seismographs or torsion balances, leaving as its sole geophysical instrument the magnetometer. Before discussing the general outcome of the magnetic investigation, however, it is necessary to give a brief statement as to the use of the magnetometer and its results.

THE MAGNETOMETER

Theoretically, the earth itself is an enormous magnet, having both North and South magnetic poles; the North magnetic pole is familiar to us all, since in a general way the compass needle invariably points toward it. However, there also exists a South magnetic pole, which is subject to the same actions and irregularities as the North magnetic pole, although it has never received so much publicity except possibly among the Chinese and Japanese.

The magnetic flux propagates itself through the earth between these two poles, developing its maximum positive vertical intensity at the North magnetic pole and its maximum negative vertical intensity at the South magnetic pole, but between these two poles there is a leakage of magnetic force over all the distance between the two. Hence, there is a terrestrial magnetic field,

which has both direction and magnitude and is known as the angle of inclination, measurable by the common dip needle. The vertical intensity is one component of this force, the horizontal intensity being the other. The vertical component has been determined the most satisfactory in geophysical research work because it more quickly and accurately records any distortion of the terrestrial field due to anomalous conditions in the earth's crust or shell.

It is assumed that the magnetic force which we measure and of which we have visible evidence, penetrates the earth to a considerable depth, but relative to the diameter of the earth itself, this is only a thin shell. Experiments have shown that even iron and steel loses its magnetic properties upon being heated to a temperature of approximately nine hundred degrees Fahrenheit. The exact temperature of the total loss of susceptibility to magnetism is known as the Curie point, and a simple calculation based on the increasing temperature with depth (which in general is variable) shows roughly the maximum penetration of magnetic flux into the earth.

From the foregoing assumption, we are reasonably sure that from the Curie point up to a certain point below the surface where the basic magma has become cooled, the magnetic forces remain fairly uniform, and from that point to the surface, the petrographic conditions causing variations in the terrestrial field may be divided into three parts, i. e., Basic, Sub-surface and Surface. It is with these three divisions we must work in analyzing the resultant variations recorded by the magnetometer. Of these three, the greatest force exerted emanates from the Basic rocks, whether deeply buried or plunging to the surface in the form of an igneous intrusive. Of the other two divisions, the Surface and Sub-surface alternately give the next greatest force, depending upon the surface geological condition, some formations having, as we well know, properties ranging from a slightly diamagnetic to a highly paramagnetic quality—these are extremely variable but in a limited region can be considered more or less uniform.

On the theoretical assumption (based on numerous experiments and observations) that the earth's field is neither increased nor decreased by inequalities of structure nor by concentration of either diamagnetic or paramagnetic substances (or masses) it can be assumed that it is merely deformed to a certain extent thereby

concentrating the positive or negative force in one area and dispersing it in another, i.e., that for every magnetic high there shall be a magnetic low, or a large surrounding area robbed of its normal intensity or vice versa. Consider this experimental example; placing a sheet of paper over a bar magnet and sprinkling iron filings thereon, we obtained a certain picture of the forces acting on the filings; but, by placing a soft iron cross bar at the end of the magnet, we obtain an entirely different picture although the original force has neither been increased nor decreased, merely realigned.

Frequently no distinct magnetic low is observed in proximity to a positive anomaly or in the opposite distribution no marked magnetic high is outlined in conjunction with a negative anomaly; but under such conditions the entire surrounding region or a great part thereof is proportionally below or above the normal field intensity. The junior writer has both observed and worked out several large areas in different sections of the South and West, keeping in mind this supposition, and invariably the averaged value corresponds to an extremely close approximation of the normal intensity, such approximation determined from United States Coast and Geodetic magnetic observations and from smaller areas in the region of no appreciable variation one way or the other.

It is to be remembered that the vertical variometer (Magnetometer) measures the total magnitude of the vertical component of the earths magnetic field at any one point and is distinctly not actuated upon solely by some bed or beds of sedimentary origin. These beds do comprise a part of the measured force, but usually an extremely small part, while the total thickness of the sedimentary strata and down into the basement, until the Curie point has been reached, determine the far greater part of observed vertical intensity.

Any determination of subsurface structures, whether they be anticlinal or synclinal folding, salt domes, or faults, must necessarily take into consideration the comparatively enormous force of the deeper rocks, particularly the rocks of high ferric content, which give by far the preponderant distortion of the normal field. Therefore, unless this be eliminated to a a great extent, by proper corrections, the picture obtained is entirely out of proportion and consequently useless insofar as its application to petroleum geology is concerned.

A chain of subterranean igneous masses discovered by the junior writer in 1928 in southeast Arkansas, extending across into Sharkey and Yazoo counties, Mississippi, gave large anomalies, ranging from 600 gamma to 2600 gamma relief. Two wells drilled on these plugs encountered the igneous material at approximately 3000 feet, with no indication of structural uplift in the overlying sedimentary formations; and two of these are now gas fields, namely: Epps High, known as the East Carroll Gas field in north Louisiana; and Jackson field at the city of Jackson in Mississippi.

There are numerous magnetic anomalies in northern Mississippi, which the junior writer has personally mapped, and although from five to seven wells have been drilled on the apex or in close proximity to the apex of some of these, no uplift of the Cretaceous was discerned in the drilling. No wells have been drilled on these which penetrated the Paleozoic to any depth, and it is doubtful if any even reached these formations; therefore no conclusions can be drawn as to their relation to the observed anomalies.

Numbers of known anticlinal structures and three salt domes, carefully mapped by the junior writer with an Askania vertical variometer, showed recordable magnetic variation. Records obtained by others, personally inspected and interpreted, also showed irregularities and distortions from the normal field; in fact, this evidence was so overwhelming that the junior writer is of the opinion that all structures of any appreciable uplift (or folding) or faulting will cause some distortion of the normal magnetic picture. However, of all heretofore observed, with the exception of the two producing igneous plugs mentioned before in Louisiana and Mississippi, no structures have shown more than 44 gamma relief, although many range between thirty and forty, but often complicated to some extent by regional disturbance due to deeply buried igneous masses.

The Eocene deposits through the South and Southwest have repeatedly shown themselves to be much more paramagnetic than the Cretaceous formation, and the recent deposits from the Miocene up through the Pleistocene have also considerable susceptibility as compared with these older rocks. Then too, when working over the outcropping of these formations, the balance itself is nearer the center of mass of these strata, and following the principle that the force exerted is directly proportional to the

unit strength of the magnetic field and inversely proportional to the square of the distance apart, it is clearly seen that our variations derived from the sedimentary formations is to a large extent caused by the position, thickness, and mineralogical content of the Eocene and younger formations.

A salt dome is a massive intrusive plug, usually about a mile in diameter and of unknown depth, of slightly diamagnetic properties. Since the magnetic flux seeks the path of least resistance similarly to the flow of electrical current, and the surrounding paramagnetic beds of the Eocene and possibly the Cretaceous offer less resistance to the passage of this force, it is entirely reasonable to assume that the passage will be away from and around the obstruction; hence we obtain negative anomalies immediately over this salt mass, while outside and surrounding this zone we have small positive anomalies, representing the crowding of the lines of force away from the diamagnetic salt, the sum of these being equivalent to the negative zone.

In an opposite manner, a basic igneous intrusive being much more highly susceptible than the surrounding country rock, creates a large positive anomaly with an attendant magnetic low, or occasionally, decreases the adjacent and surrounding area in proportional intensity.

A structural uplift, such as anticlinal folding, is likely to occasion a positive anomaly, provided the overburden of Eocene formations have not been thinned to any appreciable extent. However, if erosion has denuded a considerable thickness of the paramagnetic Eocene beds and the tectonic force occasioned a thinning of the remainder, thereby placing the less susceptible Cretaceous rocks nearer the surface, the anticline will undoubtedly be reflected by a negative change. In the event the area is not subject to magnetic disturbance from the basic rock, this usually assumes the minus thirty to minus fifty closed negative anomaly.

RESULTS OF MAGNETIC INVESTIGATION

Studying the magnetic map of the region as a whole several important features can be noted. Probably the most outstanding are the two prominent positive magnetic anomalies, the one centering in the southwest quarter of Township 2 South, Range 4 East,

several miles southeast of Bay Minette, and the second centering in Township 10 North, Range 3 East, a few miles south of Thomasville. The Bay Minette anomaly has a definite closure of over 100 gammas and a probable closure of 250 gammas. The Thomasville anomaly has a definite closure of 450 gammas and a probable closure of 600 gammas. Both of these positive anomalies can be interpreted as representing deep-seated plugs of igneous rock.

It cannot be determined whether or not these plugs represent residual remnants of an eroded basement floor or actually intruded masses. The Magnolia Petroleum Company drilled a well to 6010 feet near the center of the Thomasville anomaly, finding the Selma Chalk at 1746 feet, the Tuscaloosa at between 3350 and 3422 feet, and entering hard quartzitic sandstone (probably Paleozoic) at 5995 feet. Although there is little data with which to make geological correlations, the impression is that the well is definitely low, indicating that the sedimentary beds overlying this plug have no appreciable uplift. The Bay Minette anomaly was recently drilled to a depth of 5027 feet, and the Selma Chalk was reported at 4550 feet. Here again there is little geologic evidence available to give the relative position of the formations here. From regional considerations, however, it is apparent that the formations are definitely high under this well. About fifty miles to the northwest the Danciger Oil and Refining Company, Avent No. 1, total depth 4865 feet, was drilled in section 25, of Township 5 South, Range West, and found the top of the Selma Chalk at about 4750 feet.

In interpreting the magnetic results it is practically useless to look for or to expect closed minor anomalies on or north of the general axis of the magnetic high extending from Grand Bay in Mobile County easterly to the Bay Minette positive and thence into northwest Florida. The regional changes preclude the possibility of such occurrence. However, in analyzing the region for anomalies indicative of structure in the upper formations it is not necessary to obtain a visible closure without the application of proper regional corrections, as an unusual spreading or flattening of the contours is sufficient to indicate the change in structure.

Since local structures in the Cretaceous and younger formations seldom show more than 40 to 50 gamma abnormality, it is obvious that the petroleum geologist and geophysicist would be more interested in these features than in the larger magnetic anom-

alies showing the position and size of the basement complex. Several such minor anomalies may be seen on the magnetic map in the southern portion of the area. The more important of these anomalies are first; the Fairhope area, immediately south and southeast of the town of Fairhope in Baldwin County; second, the Bayou LaBatre, northwest of the town of Bayou LaBatre in Mobile County, third; the Dog River area, south and southwest from Mobile on Dog River, indicated by abnormal spreading in the contours, fourth; the Mt. Pleasant area, north of Little River, southeast of the Alabama River, west of the town of Uriah, in the southwest part of Monroe County.

The general magnetic picture apparently is not affected by the structure of the Hatchetigbee antcline. Likewise the Jackson fault apparently plays no part in the arrangement of the magnetic contours. From all appearances the magnetic contour pattern suggests the southwestward extension of the buried Appalachian Paleozoics.

From the standpoint of the petroleum geologist in southwest Alabama we may see that this magnetic investigation is successful only insofar as it points out several areas of interest in the southern portion of the area that warrant further and more intensive types of geophysical investigation. It is believed that both the Bay Minette and Thomasville areas will warrant further detailing by reflection seismograph with the idea of attempting to find the structure, if any, of the sedimentary rocks immediately overlying the igneous plugs.

If salt domes occur in southern Alabama it is presumed that their location would be indicated by small negative magnetic anomalies. Several such anomalies have already been pointed out. With reference to oil itself, nothing further can be added to the report of Dr. Semmes (Bulletin No. 15). The magnetometer is valuable only insofar as it sets out areas of especial interest. It can add nothing in itself to our knowledge of the presence or absence of petroleum, which drilling alone can establish. It is hoped that this magnetic investigation will serve the purpose for which it was designed, namely, to bring southwest Alabama to the further attention of the geologist, the geophysicist and in their wake the driller.

WELL LOGS

(Summaries and annotations are by Winnie McGlamery, Paleontologist, Geological Survey of Alabama.)

Mrs. Mamie S. McCurry, Et Al. Southern Kraft Corp. No. 1. Baldwin Mrs. Mamie S. McCurry, et al. Southern Kraft Corp. No. 1. Baldwin Co., Ala. Loc. Sec. 28-2S4E. 200' & 200'E NWc NE/4SW/4. Began June 13, 1935. Abandoned July 31, 1935. Elev.: 178' Aneroid. Casing

0-30 clay and sand
90 sand
120 boulder
180 clay and sand
186 stky clay
252 blue clay & sd stks
445 blue clay w/qutz gravel
467 blue clay
489 blue clay w/qtz gravel
557 blue clay w/sd & gravel
671 blue gmy clay
725 blue sh & sd
821 blue stky sh
843 blue stky sh w/sd stks
887 blue stky clay
975 blue stky sh w/gravel
997 sand, shale & gravel
1020 blue clay, sd stk w/gravel
1037 chalk
1037-39 core 1
1160 chalk & lime
1234 gray blue shale
1258 sand
1300 black-green shale w/sd streaks
1264-71 core 2
1323 sand and sandy shale
1325 sandy shale
1327 lime shells
1347 gummy shale
1327-33 core 3
1352 hard lime
1366 lime and shale
1357-8 core 4
1378 hard chalk
1438 chalk and lime
1378-83 core 5
1465 hard lime with broken streaks
1465-70 core 6
1487 gray sdy sh w/hd stk sd & lime
1517 broken lime w/hd lime caps
1539 hard sandy lime
1581 hard lime
1600 broken lime with hard streaks
1608 brkn lime
1604-10 core 7
1616 blue shale
1648 broken and hard lime
1670 sandy shale
1692 shale, sandy shale and green stky sd.
1674-81 core 8
1700 sdy sh & shell & had stk sd
1740 hard sandy shale & shells
1780 green sdy lime w/shells & sd stks
1812 sdy lime with streaks clay
1780-87 core 9
1860 greenish gray sdy lime w/gray clay streaks
1812-15 core 10
1836-39 core 11
1927 sand & sandy shale
1860-63 core 12
1880-83 core 13
1904-07 core 14
1924-27 core 15
1960 sandy shale and soft streaks
1946-49 core 16
1981 green sd w/hd streaks
1969-72 core 17
2154 green sdy sh w/hd stks lime
1993-96 core 18
2019-23 core 19
2034-37 core 20
2058-61 core 21
2074-77 rore 22
2100-03 core 23
2118-21 core 24
2129-31 core 25
2149-52 core 26

2194 brown stky sh. w/stks brittle brown
2159-61 core 27
2192-95 core 28
2212 stky brown gray shale
2115 sandstone
2378 soft gray brown sdy sh w/stks brown stky shale
2215-18 core 29
2288-91 core 30
2363-66 core 31
2430 soft brown sdy sh w/stks brown sticky shale
2460 greenish sandy shale
2430-33 core 32
2457-60 core 33
2551 greenish brown sh & brown sticky sh w/stks shell & sand
2504-07 core 34
2548-51 core 35
2561 brown stky sh w/layers shells & gravel
2637 brown sdy sh w/stks shell
2561-64 core 36
2689 brown sdy sh & had brittle brown shale
2637-40 core 37
2694 salt water sand
2691-94 core 38
2722 salt water sand
2724 rock
2724-26 core 39
2750 salt water sd w/gray sdy shale
2798 shale and sandy shale
2829 gray sdy shale and shale
2799-2802 core 40
2875 shale w/stks gray sandy shale
2915 shale w/stk gmy shale
2876-79 core 41
2996 gmy sh w/stks hd sh & sdy sh
2917-20 core 42
3050 brown sticky shale
3050-52 core 43
3074 stky brown sh w/stk gray sdy shale and shells
3161 brown stky shale
3178 brown stky sh w/stks hd sh & gummy sh
3198 brown sh w/hd lime stks (top Salt Mountain 3198)
3203 hard sandy lime
3201-3 core 44
3275 hard lime & shells (drilled rough)
3215-18 core 45
3222-25 core 46
3288 shale & lime
3293 shale
3297 brown sdy shale
3295-98 core 47
3401 brown hd sh w/stk stky shale
4384 brown shale and sticky shale
3485 hard cap rock
3488 sand
4385-88 core 49
3508 sandy shale
3553 gummy shale
3561 sand
3554-57 core 50
3570 stick shale
3576 hard lime
3581 rock
3580-82 core 51
3585 hd sdy lime & soft sand
3727 soft gray brown sdy sh & brown sh.
3583-88 core 52 (no rec)
3588-92 core 53
3728 limestone
3730 hard sand shale
3735 sand with stk hd sandy sh
3731-34 core 54
3789 hd sdy sh w/stks shale
3753-56 core 55
3804 gummy sh w/stks sdy shale
3880 sandy shale boulders & brown sticky shale
3839-42 core 56
3876-79 core 57
3930 gray dark brown stky shale
3930 bottom 9-7/8 hole
3950 brownish black stky shale
hard shale with boulders
3946-49 core 58
3984 brown-black hd sh w/stky streaks
4054 brown-black sh & black flky sh
4095 black flaky shale
4097 hard lime & shale
4097-99 core 59 (no rec)

4101 limestone
4243 brownish black stky sh w/stks sandy shale
4138-40 core 60
4150-53 core 61
4249 sand
4246-49 core 62
4252 cap rock
4272 sandy shale
4254-57 core 63
4303 hd black shale w/gummy stks
4350 black shale
4354 broken sandstone
4376 gray sand & sandy shale
4354-57 core 64
4420 gray sandy sh & sd & hd shale
4500 hard shale & sticky shale
4427-30 core 65
4521 sticky sh & streaks sandy shale
4534 sandy shale and sand
4568 black flaky shale
4698 hard sticky chalk
4572-75 core 66
5027 chalk
T. D.

Cores

No.
1 1037-39 light whitish blue chalky shale
2 1264-1271 greenish black calcareous, pyritiferous lignitic and slightly bentonitic laminated clay with sand streaks, occasional shell frag.
3 1327-1333 greenish gray fossiliferous calcareous shale
4 1357-58 light olive green slightly calcareous clay
5 1378-1383 hard gray white sandy limestone
6 1465-1470 gray sandy shale with sand streaks (tastes salty)
7 1604-1610 hard sandy lime with blue noncalcareous clay at base
8 1674-1681 massive gray fine sandy shale and sand with shell fragments.
9 1780-1787 gray sandy lime with gray green fossiliferous sand and sandy clay streaks
10 1812-1815 gray sandy glauconitic lime with gray shale streaks.
11 1836-1839 hard gray green glauconitic sandy lime with streaks of sandy shale (salty).
12 1860-63 gray green sandy lime with streaks of sand and sandy shale partly porous (salty)
13 1880-83 fine porous gray green very sandy lime with streaks of sand.
14 1904-1907 porous greenish gray sandy lime very sandy.
15 1924-1927 greenish gray sandy lime with streaks gray shale and sand
16 1946-49 hard green gray sandy lime with streaks sand.
17 1969-1972 hard green gray sandy lime with streaks gray micaceous sand.
18 1993-1996 hard bluish gray sandy lime
19 2019-2023 hard bluish gray sandy lime with sand streaks.
20 2034-37 green gray sandy lime like siltstone and streaks gray calcareous clay.
21 2058-2061 hard blue green sandy glausonitic lime
22 2074-77 hard blue gray glauconitic sandy lime with streaks of white chalk
23 2100-2103 hard gray green sandy lime (siltstone with streaks chalk)
24 2129-32 green gray very sandy lime slightly glauconitic and fossiliferous (salty)
26 2159-2162 gray brown noncalcareous laminated clay slightly sandy
27 2178-2181 brown gray laminated clay.
28 2192-2195 gray brown micaceous laminated sandy clay slightly calcareous

29 2215-2218 dark gray calcareous micaceous sandy chalk slightly fossiliferous
30 2288-2291 fine grained gray salt water sand.
31 2363-66 gray brown laminated sandy shale.
32 2430-33 fine gray green micaceous sand.
33 2457-2460 fine gray green slightly glauconitic porous sandy shale (salty)
34 2504-2507 fine gray laminated micaceous sandy shale (salty)
35 2548-2551 fine gray laminated micaceous slightly sandy shale.
36 2561-63 gray laminated micaceous lignitic clay with sand streaks, noncalcareous.
37 2637-2640 fine gray micaceous and lignitic shale with streaks of gray sand.
38 2691-94 fine grained gray micaceous sand slightly lignitic (tastes salty)
39 2724-26 gray laminated micaceous shale with streaks of sand (few fossils)
40 2799-2802 fine gray micaceous sandy shale.
41 2917-2920 gray laminated slightly micaceous sandy shale.
42 2999-3002 gray laminated micaceous sandy shale with streaks coarse glauconitic sand (salty)
43 3050-3052 gray laminated micaceous sandy shale with streaks of porous sand.
44 3201-3203 hard white sandy glauconitic lime
45 3215-3218 hard gray dense lime with white fossiliferous lime nodules.
46 3222-3225 hard white lime an streaks gray marl.
47 3295-3298 dark gray laminated shale with streaks fine sand with thin lignite seams.
48 3398-3401 gray laminated shale with streaks gray micaceous sand and sandy shale with lignitic streaks.
49 3485-3488 gray highly fossiliferous sandy shale with streaks of sand.
50 3554-57 dark gray shale with streaks medium grained subangular quartz sand and fossils.
51 3581-83 soft gray sandy shale.
52 3585-88 no record.
53 3588-92 fine gray porous quartzitic sand (S. W.)
54 3731-34 hard and soft gray porous micaceous sand with streaks of gray sandy shale.
55 3753-56 soft gray medium coarse quartzitic sand with streaks dark gray thinly laminated sandy clay (S. W.)
56 3839-3842 fine gray laminated micaceous sand with lignite seams and streaks dark gray clay (salty)
57 3876-3879 fine gray laminated micaceous sand with streaks dark gray brown shale.
58 3946-49 dark gray brown thinly laminated shale with thin streaks of micaceous sand.
59 4097-99 (hard quartzitic boulders)
60 4138-4140 fine dark gray micaceous sand with streaks fine sandy shale.
61 4150-4153 fine tight slightly micaceous sand with streaks dark gray shale and sandy shale.
62 4246-49 hard tight quartzitic sand streaks slightly calcareous.
63 4254-57 dark gray black poker chip shale with streaks dark gray micaceous sand and sandy shale.

64 4354-57 medium coarse gray quartzitic sand very porous (pungent odor)
65 4427-4430 dark gray black brittle slightly micaceous shale with gummy streaks.
66 4572-75 whitish gray tight gummy chalk with gray shaley chalk streaks.

Remarks: Interested in this test were the following companies: Danciger Oil & Refining Co.; United Gas Public Service Co.; Sun Oil Company; and the Arkansas Natural Gas.

Summary

Citronelle—0 to 186+—
Miocene—Approximately 186-210 to 1124-47 ft.
Oligocene—between 1124-47 ft. and approximately 1345 ft.
Jackson—between approximately 1345 ft. and 1670 ft.+—
Claiborne—between 1674-81 ft. and approx. 2132 ft.
Wilcox—between 2159 ft. and approx. 3449-71 ft.
Midway—between 3485-88 ft. and 4554 ft.
Selma chalk begins between 4554 and 4572 ft. and continues to bottom of hole.—5027 ft.

Danciger Oil & Refineries, Inc. Ft. Morgan No. 1. Baldwin Co., Ala. Location: Extreme western end Ft. Morgan Peninsula. Began: Jan. 30, 1935. Abandoned: March 18, 1935. Elev.: 11.4' D. F. Casing record; 32'-19"; 200'-12".

0-32 surface
80 soft sand
90 soft sand
110 gumbo
173 soft sand
182 gravel and sand
191 shells and sand
200 gumbo
280 shale and shells
300 gravel
327 gravel, shale and shells
450 shale and shells
457 sand
560 blue shale
608 soft sand
611 gravel
665 sandy shale and shells
710 sandy shale
711 rock
727 shale and boulders
800 soft sand
838 sandy shale and shells
852 soft sand and shells
910 sandy shale and shells
915 shale
960 sandy shale and shells
961 hard sand
985 sandy shale and shells
1101 sand and streaks of shale
1103 hard lime shell
1194 sandy shale
1230 sticky shale
1293 sandy shale and shells
1307 sandy shale streaks sticky shale
1335 gummy shale and sand streaks
1389 sticky shale
1390 lime shell
1398 sticky shale and shells
1413 soft streaks of sand
1414 hard lime shell
1442 sticky shale
1444 sand
1447 sticky shale
1458 sticky shale and sand streaks
1470 gumbo
1511 sticky shale
1525 brittle shale with shells
1530 gummy shale

1535 shale
1551 shale with streaks of sand
1557 shale
1570 shale with fine sand
1586 brittle shale
1592 sticky shale
1594 shale and shells
1625 dark green shale with sand streaks
1627 shale & streaks of sandy shale
1638 sandy shale and shells
1708 sandy shale
1726 sandy shale with gummy streaks
1744 sandy brittle shale, shells and streaks hard brown lime
1762 brittle shale and shells
1780 sandy shale
1855 sandy shale with streaks hard brown lime
1895 sandy shale
1935 shale
1975 brittle shale
1985 brittle shale
1987 sand and shells
1993 sandy shale w/shells and lignite
2005 sandy shale
2015 sandy shale with streaks of lime
2035 sticky shale
2055 sandy shale w/streaks gummy shale
2095 shale
2135 brittle shale
2172 shale
2212 brittle shale
2307 shale
2315 sand
2331 soft, salt and pepper sand
2333 sand
2334 rock
2352 sand
2385 salt water sand
2400 soft, salt water sand & streaks of shale
2442 sandy shale
2457 shale
2505 sandy shale
2515 sandy shale
2544 broken sand and shale
2564 broken sand and shale
T. D.

Surface to 290 ft. Recent and Citronelle
290 ft. to 2564 ft. Miocene
(Cores from 1557′ to 2564′ carry a fauna very close to the Choctawhatchee formation of Florida.)

C. W. Robinson et al (Johnny Greer). Long Bell Lumber Co. No. 1. SW-SW-SE¼ Sec. 28-10N-4W, Choctaw County, Ala. Elevation: Altimeter 325 ft. Casing record 15½″ - 39 ft.; 10″ - 321 ft.

0- 18 surface
18- 39 blue shale and sand
39- 83 sand and shale
85- 120 sand and gravel
160- 200 gray shale and sand
200- 204 sand
204- 262 sand
262- 270 hard sand
270- 312 hard sand
312- 321 hard sand with gravel & shale
321- 326 sand, shells and shale
326- 464 sand, shells and shale
464- 508 sand, shells and shale
508- 546 sand and shale
546- 576 sticky shale
576- 594 sand
594- 604 sandy shale
604- 626 sand and gravel
626- 646 sandy gravel
646- 676 hard sand
676- 690 gravel and shale
690- 692 hard sand rock
692- 702 sandy shale (cored at 691)
702- 776 sandy shale
776- 778 rock
778- 830 gumbo with streaks of sand
830- 842 sandy gumbo
842- 844 sand rock
844- 852 sand and shells
852- 883 sticky shale
883- 888 sand and shale

888- 960 sand and shale
960-1046 gummy shale
1046-1132 sticky shale with small portions of sand
1132-1159 sticky shale and fine sand
1159-1180 sticky shale
1180-1203 sandy gumbo
1203-1233 sandy gumbo
1233-1234 rock
1234-1262 gumbo
1262-1282 gumbo
1282-1390 gumbo and shale
1390-1394 gummy shale
1394-1395 gummy shale
1395-1400 ? ?
1400-1401 hard sand rock
1401-1405 sand, white
1405-1411 sandy shale
1411-1417 sticky shale with sand
1417-1432 sticky shale with streaks of sand
1432-1482 tough gumbo
1482-1488 gummy shale with boulders
1488-1563 gummy shale
1563-1568 blue sand rock
1568-1570 blue sand rock
1570-1637 broken streaks of sand & shale
1637-1641 sand rock
1641-1653 broken sand and shale
1653-1688 hard and soft green sand with lots of shells
1688-1690 soft sand
1690-1700 sand
1700-1702 sand rock
1702-1718 shale with shells
1718-1722 hard sand
1722-1763 sandy lime
1763-1798 shale with streaks
1798-1818 gumbo, tough
1818-1820-rough, hard rock
1820-1822 hard rock
1822-1884 broken sand and shale
1884-1892 hard sandy shale
1892-1911 broken sand and shale
1911-1960 gumbo with streaks of sand
1960-1972 gumbo
1972-2003 gumbo with streaks of sand
2003-2010 hard shale
2010-2016 sandy shale (2010-2015 cored)
2016-2018 hard rock
2018-2038 sand
2038-2062 chalk, sand and shale
2062-2069 chalky shale with streaks of brown sand
2069-2080 sandy shale
2080-2103 gummy shale with hard streaks
2103-2135 gummy shale with hard sand streaks
2135-2170 hard gummy shale
2170-2190 hard gummy shale with streaks of sand
2190-2191 hard rock
2191-2200 gumbo and boulders
2200-2217 gumbo and boulders
2217-2220 hard rock
2220-2260 hard shale, black
2260-2261 hard rock, very rough
2261-2263 rough rock
2263-2317 hard black shale and boulders
2317-2343 black shale and boulders with streaks of chalky sand
2343-2353 gumbo
2353-2411 shale and boulders
2411-2465 hard black shale with hard black streaks showing a little white.
2465-2541 hard shale
2541-2566 gummy shale, black
2566-2596 hard shale (corded here)
2596-2597 hard, rough rock
2597-2598 sandy shale
2598-2634 chalky shale, gummy
2634-2639 soft chalk
2639-2683 hard gummy chalk
2683-2746 chalk rock
2746-2810 chalk, sticky
2810-2817 chalky shale

Steel Line run and hole 20 ft. ahead; correct depth when 2780'3"; this log was corrected back to top of chalk, making first chalk core 2598-2604.

2817-2867 chalk with streaks of shale
2867-2896 chalk rock with streaks of shale
2896-2906 chalk rock with streaks of shale
2906-2962 hard chalk
2962-3006 hard chalk rock
3028 hard chalk with gummy streaks
3067 chalk rock—gummy streaks
3118 broken chalk hard and gummy
3156 hard gummy chalk
3195 tough gummy chalk
3200 hard gummy chalk
3205 gummy chalk with tough streaks, cored
3205-3208 making rat hole from boulders in hole
3206 fishing for bldrs—chalk rock
3210 tough gummy chalk
3225 hard chalk
3240 chalk rock
3254 chalky rock gummy streaks
3281 chalky shale hard streaks
3293 gummy lime with hard black shale
3301 hard broken lime with gummy places
3351 hard gummy lime
3354 hard lime rock
3574 hard gummy chalk
3603 gummy chalk with shrt brks sdy blue shale
3618 broken chalk cored 3618-21
3624 broken chalk and shale
3690 hard gummy chalk
3709 broken chalk and shale
3788 hard and soft shale with gummy streaks
3820 hard gummy shale
3821 hard sand cored 3821-27
3831 green sand and shale
3850 sandy shale
3851 hard sand
3897 sandy shale gummy streaks cored 3951-57
3963 sdy shale streaks, tough and gummy
4008 sandy shale, gummy streaks
4012 hard sand rock, cored 4012-15
4015 missing
4020 hard sand streaks shales, cored 4015-20 6¼" hole from 4012-4020—T. D.

Douglas Oil Co., No. 1. Robinson & Greer Log. Choctaw County, Alabama. Casing record: 10" - 319 ft.; 8¼" - 2049 (corrected to 2060). Location: Section 15-9N-2W. Elevation: 87.7 (Gulf). Commenced: 8-8-1929. Completed: 10-20-29 (dry and abandoned.)

0 to 12 surface sand and clay
25 blue mire and gravel
65 blue mire
100 shale and gravel
157 hard sand
167 hard sand
237 gummy shale
267 shale and gravel
273 (copy report book does not show)
281 hard blue rock
283 gumbo and gravel
305 hard gumbo
319 hard gumbo
356 tough gumbo
368 gumbo
370 sand rock
371 hard sand rock
372 hard rock
373 hard sand rock
374 blue water sand
375 rock (cored)
376 hard sand rock
397 blue sand
407 gumbo
461 sand and shale
468 lignite and shale
469 sand rock
500 lignitic shale (cored 469-476)
501 rock
505 sand (cored)
506 sand rock

507 hard rock
511 sand (water sand) (cored)
512 sand rock
535 lignite and shale
592 sand and shale (cored 535-539)
602 tough lime (cored 585-592)
621 sandy shale
622 hard rock
710 gummy shale, streaks of sand
730 gumbo, tough
826 hard gummy shale (cored 730-35)
874 hard gummy shale
886 firm gray sand
912 gummy shale (cored 874-881)
926 gumbo and boulders
960 gumbo and boulders
992 sandy shale (cored 960-67)
1030 shale, streaks sand (cored 992-99)
1036 gummy shale
1084 gray gummy shale with thin breaks of sand (cored 1080-1091)
1108 gray gummy shale, streaks of sand
1118 green salt and pepper sand with lime (cored 1108-1114)
1206 broken lime and hard sand (cored 1180-1187)
1215 sand
1250 gummy shale
1252 hard sandy lime
1263 sand and shale (cored 1251-1258)
1307 sandy shale
1326 gumbo and pyrites boulders
1392 gummy shale, streaks sandy shale
1497 gummy shale, streaks sandy shale
1498 hard sandy lime rock
1499 hard sand rock
1617 gray sandy shale, streaks of sand (cored 1499-1503) (cored 1577-84)
1764 gray sandy shale, streaks hard sand
1766 hard salt and papper sand
1820 hard sandy shale and boulders (cored 1766-73)
1920 hard shale and boulders
2036 hard shale and boulders
2042 gummy lime
2046 sandy shale (cored 2042-48) CONTACT: Last 2 ft., SELMA CHALK)
2064 hard gummy chalk
2096 hard gummy chalk
2146 hard gummy chalk
2209 hard gummy chalk
2245 hard gummy chalk
2265 hard gummy chalk
2295 hard gummy chalk
2309 hard gummy chalk
2340 hard gummy chalk
2380 hard gummy chalk
2442 broken chalk, streaks hard black shale (cored 2414-2418)
2505 chalk with streaks gray shale
2525 hard gummy chalk
2535 gummy chalk
2628 chalk rock, hard gummy streaks run steel line to bottom 8" casing.
2726 chalk rock with hard gummy streaks
2792 gummy chalk
2825 gummy chalk
2829 broken chalk (cored 2829-2834)
2910 chalk rock, streaks hard boulders.
2925 chalk rock, streaks hard boulders.
2964 hard chalk
3028 chalk rock
3032 chalk rock
3062 broken chalk, streaks gummy shale (cored 3032-3039)
3094 chalk, streaks gummy blue shale
3100 hard chalk rock
3105 hard chalk
3159 hard chalky shale & boulders, gummy streaks
3167 gray shale
3169 sand, salty

3173 cored green sand, streaks lime (CONTACT: Eutaw 3170 ft.)
3201 green salt water sand (cored) reduced hole 3169' from 7⅞ to 6¼")
3229 green salt water sand (cored)
3246 green salt water sand
3249 hard sand (did not catch any of it)
3279 green sand, hard streaks gray sand.
3301 green sand, hard streaks gray sand (no core)
3309 green sand and gray shale
3330 gray and green sand with shale
3353 gray sand, thin streaks shale
3375 hard sand streaks shale
3389 hard sand streaks shale
3400 hard sand streaks shale
3408 sand and shale
3410 hard blue sand
3412 rock, thin streaks sand and lime
3436 green sand
3446 hard green sand
3456 green sand and shale
3466 gray sand
3470 green shale, salt and pepper sand.
3490 green sand and gummy shale
3504 hard sand streaks, gummy shale
3506 hard sand rock
3512 green salt and pepper sand (cored)
3535 green sand, streaks hard shale
3545 tough gummy shale
3579 broken sandy lime, gummy streaks
3611 broken lime and hard shale
3636 broken lime and hard sand
3657 broken lime, streaks hard sandy shale
3683 hard and soft sand, streaks of lime
3713 broken lime and shale, streaks of sand
3724 broken chalk & shale, streaks of sand
3726 hard rock
3728 sand and salt (cored 3728-3740)
3741 sand with hard streaks
3743 tough red gumbo or red bed
3768 red gumbo and red shale
3795 red gumbo with streaks of shale
3821 hard red bed with gummy shale
3823 hard sand
3833 hard white sand (cored 3823-3827)
3854 red shale with gummy streaks
3859 red gumbo
3870 hard gummy lime
3888 hard sandy shale
3893 hard sandy lime
3911 hard sandy black shale
3917 gummy lime
3948 shale
3963 shale
3976 tough gummy red bed
4028 hard red bed

Magnolia Petroleum Co. Scotch Lumber Co. No. 1. Clarke Co., Ala. Location: Sec. 17-10N-3E 250'N & 310'E of SWc NE/4. Began June 15, 1934. Completed August 15, 1934. Casing record: 13" at 253'. Elev.: 354' alt. (groun)

0-10 clay and red sand
30 lime and streaks sd.
55 lime and green sd.
189 sdy. shale & bldrs.
205 sdy. shale sd. & bldrs.
206 rock
253 sticky shale and shells
266 sticky shale
267 rock
305 sand & bldrs.
372 sd. shells & strks shale
381 broken lime
394 limerock
440 sand, lignite & strks shells
442 rock
528 shale & shells
568 brown & gray shale
573 broken shale & bldrs.

704 gray shale
727 gray shale & Bldrs.
738 gray & brown lignitic shale
851 gray & brown shale
886 gray shale
895 sticky shale
896 shell
920 broken lime
970 green sand—shells & shale
1009 green & gray sd. & shells
1011 rock
1060 shale—gummy strks.
1150 shale, shells, strks, sd.
1195 gray shale & sand
1212 broken sdy. shale
1233 gray sd. w/strks. brown shale (cored 1212 to 1220)
1238 sticky shale
1260 sd. and strks shale
1329 shale & bldrs. w/strks. sdy. shale
1343 shale, black
1345 rock
1351 shale & bldrs.
1390 black shale & bldrs.
1430 shale—gummy shale
1480 shale bldrs., strks. shell
1500 black shale
1520 gummy shale
1525 hard black shale
1527 rock
1539 shale & bldrs.
1546 shale w/strks. sand
1549 sand & pyrites
1550 rock
1604 black shale, bldrs. & shell
1616 broken shell, shale & bldrs.
1676 sticky shale w/strks gray sdy. shale
1687 broken green limestone & shale
1708 chalky shale
1746 chalky shale strks. chalk
1790 gmy. chalk w/hd. strks
2292 chalk
2316 hard chalky lime
2441 chalk
2467 chalk w/hd. & stky. streaks
2497 chalky sh. w/strks. chalk & broken lime and shells.
2550 chalky shale
2600 chalky shale w/strks. lime & shells
2604 hard chalk
2646 broken chalk
2648 hard sdy. lime
2660 chalky shale w/strks lime
2672 hard chalk
2676 chalk & shale
2678 hard chalky lime
2694 chalky shale w/strks. chalk
2716 broken chalk
2718 gummy chalky shale
2721 hard sdy. lime
2722 sdy. shale showing trace of oil
2750 gummy shale w/strks. lime
2758 broken limy chalk & sticky shale
2774 broken sdy. lime, shells & green gummy shale.
2794 hard sdy. lime
2806 gummy shale strks. sandy lime
2823 shale w/sticky strks.
2830 sandy lime (cored 23-24)
2831 lime cap rock
2833 green sand, S W
2873 green sand and sandy shale
2938 sandy shale w/strks sand
2960 green sand (cored 38-41)
2990 sandy shale and soft shale
3018 shale
3023 sandy shale and sand
3050 shale w/sticky streaks
3070 sandy shale
3100 shale w/sticky streaks
3106 hard green sand. S/W (cored 02-05)
3215 sand, sdy. shale w/strks. shale
3223 streaks of sticky shale & strks. sand
3250 streaks of sticky shale and sdy. shale
3275 shale w/streaks sticky
3298 brown shale w/strks. blue shale
3328 shale
3340 sandy shale
3346 gummy shale
3350 soft gray sand (cored 48-50)
3403 soft gray sand

3422 red and gray micaceous shale
3430 gray water sand (cored)
3440 hard red sandy shale
2461 sandy shale & sticky shale
3496 red shale w/strks. sand
3500 sand (cored)
3522 sand and streaks red shale
3525 red shale strks. gummy sand (cored)
3532 red shale strks. of sand (cored) sd
3535 red sdy. shale strks. gray & green
3541 gray and green sdy. shale
3548 red & gray shale
3550 coarse gray sand (cored)
3582 red & gray shale w/strks. sand
3584 mucky gray sand (cored)
3604 red shale & sandy shale
3607 mucky gray sand (cored)
3628 sand
3631 red sticky shale
3634 coarse gray sand (cored)
3654 sand & streaks of shale
3656 gray sticky shale and sand (cored)
3669 sticky shale
3678 coarse gray sand (cored 69-72)
3712 gray sand w/streaks shale
3742 hard gummy red shale
3756 blue & red shale (cored 42-44 & 54-56)
3779 hard sticky red shale
3781 gray mucky sand (cored)
3803 sand & mucky sandy shale
3825 sand streaks red shale (cored 22-25)
3855 sandy shale w/hd. strks. sand
3865 red shale, gummy & hard strks.
3871 red & blue shale (cored 65-67)
3890 hd. blue sdy. & sticky shale
3893 gray sd. & mucky sdy. shale (cored)
3902 broken sand & mucky shale
3906 hard dark brown shale
3909 sd. & hd. shale (cored)
3918 hd. shale w/strks. sd. & sticky sh.
3940 hd. shale w/strks. sd. & gmy. strks.
3952 hd. shale w/gmy streaks
3958 broken sd. & shale
3976 gmy blue shale (cored 58-60)
3985 sticky shale & sdy shale
3988 gray sand & sdy shale (cored)
4017 sand sdy shale & stky. shale
4020 gray mucky sandy shale w/streaks hd. black shale
4030 gray shale
4033 sand, gray (cored)
4040 gray sand w/strks. brown shale
4070 brown shale streaks red shale
4080 gummy shale
4084 hd. sdy limerock (cored 81-82)
4094 micaceous sandy black shale (cored)
4095 hard calc. sandrock (cored)
4099 rock streaks hard shale
4101 hard stky black shale (cored)
4123 hard stky black shale
4125 sdy shale w/strks shale (cored)
4130 black shale streaks sdy shale
4136 hard black shale
4139 black shale streaks hard sand (cored)
4155 black shale streaks hard sand
4186 hd. black shale w/gmy streaks
4188 sand (cored)
4191 hd. sdy. shale & hd. black sh. (cored)
4202 hd. shale w/sdy. streaks
4207 black shale
4216 hard & soft green sd. (cored 4208-11)
4219 gray and green sdy. shale (cored)
4242 sdy shale & streaks sand
4268 hard shale & sandy shale
4274 sdy. shale strks. hd. sand
4296 sdy shale
4302 soft gray sand (cored)
4350 soft sand streaks shale
4370 sandy shale
4375 shale
4384 gray & green sand (cored 76-78)
4398 sdy shale w/gummy streaks
4406 gray coarse sand (cored 98-4400)
4414 sand & sdy shale

4465 soft sand streaks shale
4475 hd shale streaks lignite
4490 hard shale
4520 sand strks. lignite (cored 92-94)
4536 sdy. shale gummy streaks
4540 sand (cored)
4556 sand, sdy. shale & lignite
4572 hd. gray shale w/strks sand
4601 hd. shale w/strks sand
4620 red sticky shale (4 cores no recovery)
4626 hd. shale
4640 blue & red sticky shale
4684 red gummy shale (cored 46-48)
4669 hard red shale (cored 52-55)
4689 gray sand streaks blue shale
4697 red shale w/hd streaks
4708 hard shale
4711 gray sdy. sh. strks. sd. & sh. (cored 09-11)
4729 red & pink shale (cd. 27-29)
4752 hard red shale
4755 cored gray sand
4775 sand w/strks ash
4786 red shale w/strks of sand
4808 hard red shale
4821 micaceous gray sand (cored 4809-12)
4834 gray sticky sand
4862 mucky sdy. shale & sand
4918 soft sd. red & blue shale
4950 hard black sh. strks. sdy. sh.
4970 hd. red sh. (cored 51-54)
4999 soft mucky sd. w/strks gray & pink shale
5048 soft sd. w/strks red & blue gmy sh.
5051 red shale w/strks. blue sh. (cored)
5072 red shale—sticky
5077 red sand & sdy. shale
5085 red sand & shale
5133 red sdy. shale w/hard streaks
5138 red gummy shale
5154 red gummy shale w/strks sand
5195 red sh. & red sdy. shale
5240 red sh. strks. of black & brown shale
5267 soft mucky sd. w/strks red gummy and sandy shale
5278 red sdy. sh. & strks shale
5280 hard gummy shale
5305 red sdy. shale & shale
5310 red sandy shale
5329 red gummy shale
5351 red gummy hard sh. strks sdy. shale
5372 red gummy shale
5381 red sand
5418 red gummy sh. strks. sdy. shale
5431 red stky sh. & sdy. shale
5440 red sand
5449 red sand & shale
5477 sdy. shale & strks shale
5485 red gummy shale
5517 red gummy shale
5580 red sdy. sh. hd. strks of sand
5592 red sd. w/strks. red shale
5597 red sdy. shale
5599 red micaceous shale
5621 red shale & gummy streaks
5644 red shale strks of sdy. shale
5672 sh. w/strks of sand
5678 hd. red sh. w/strks sand
5701 hd. red gmy sh. & sdy shale
5711 hd. red shale
5722 red sh. w/strks of sand
5728 red sh. with gummy streaks
5745 hd. gmy red shale
5752 sand
5755 red sandy shale
5773 red shale w/gummy streaks
5778 gummy red shale
5814 hd. red sh. w/gmy streaks
5817 red sand
5839 red sand w/streaks shale
5844 red sand
5850 sand & shale
5858 soft sticky shale
5880 soft shale w/streaks sand
5955 red sh. w/gummy streaks
5988 red gummy sh. w/streaks hard shale
5990 hard sandy limerock
6010 hard coarse sand with quartzitic pebbles.

T. D.

Summary

205-53.....to 881-904—Wilcox.
904-26.....to 1637-59—Midway.
1681-1703.....to 1725-47—Ripley ?—Cretaceous.
1746-54.....to approximately 2800—Selma chalk.
2800 ft.....to about 3350 ft.—Eutaw.

Between 3350 and 3422 ft. to 5995-98—Tuscaloosa.
(red beds of Tuscaloosa appear at 3422 ft.)

Special Scout Service (Robert L. Steffey, Jackson, Miss.) Hobson-Boykin Well Log. Ramsey Petroleum Corporation. Hobson-Boykin No. 1. Clarke County, Alabama. Location: Sec. 33-6N-2E. Check: 306'N & 484'W of Sec NE. SE. Began: April 18, 1932. Completed: June 30, 1932. Elevation: 67.4' (Top Rotary) (FN 386). Casing Record: 30' - 20" surface casing; 337' of 12½" casing.

0-16 surface sand
94 lime
104 sandy lime
130 sand and gravel
146 shale
150 lime
168 broken lime with shale
172 shale
191 broken sandy lime with shale
192 lime
205 gray sand
339 gray lime
457 black shale
459 lime
681 black shale
682 lime
719 shale, black
721 lime
760 shale and shell
764 limestone
801 black shale
810 core 2' recovery, top hard chalk, base gummy chalk determined as Selma. Drill Stem test 801 to 52 open 30 minutes dry test.
1340 Selma chalk
1424 black shale
1448 black sandy shale
1480 gray greenish shale
1487 core 2" recovery micaceous sandy shale
1540 glauconitic gray sand
1541 lime shell
1559 glauconitic gray sand
1565 core 1' recovery micaceous sandy shale
1580 gray shale
1588 sand
1619 sand and shale
1621 hard lime shell
1625 shale and sand
1635 sand
1655 gray shale
1670 very hard quartzitic sandstone
1692 dark shale and top of Tuscaloosa
1715 dark shale and pebbles
1738 white coarse sand
1770 red beds
1792 white coarse sand, some hed beds
1799 core 2½' recovery, red beds bentonite & mottled (green, brown yellow, red) shale
1827 red bed
1864 coarse grained sand
1870 core missed, cut like sand
1876 core missed, cut like sand
Drill stem test 1832 to 76, seat

gave away and tool leaked, therefore, no test.
1902 sand
1912 gumbo
1913 lime and shell
1921 sand, volcanic ash and lignite
1925 gummy shale
1932 sand
1933 shell
1948 sand, few hard streaks
1961 gummy shale, streaks of sand
1962 shell
1965 gummy shale
1973 sand, streaks of shale
1974 shell
1995 sand, streaks of shale in bentonite
2026 mottled shale, bentonite ash & sand
2071 sand
2074 hard sand rock
2100 sand, some bentonite & mottled shale
2165 bentonitic shale
2198 sand
2312 bentonitic shale, some lignite
2423 gray shale, some bentonite & lignite
2471 blue shale
2472 lime shell
2483 fine grained glauconitic sand
2484 lime shell
2486 sandy shale
2508 blue shale, streaks of fine grained-glauconitic sand
2509 lime shell
2524 blue shale streaks of fine-grained glauconitic sand
2563 blue and gray shale
2564 very hard rock
2566 core, no recovery cut out roller core head
2568 lime rock
2630 blue-gray shale
2640 shale, streaks of sand
2657 coarse-grained glauconitic sand
2673 core 3" recovery micaceous glauconitic lignite fine grained sand, not enough recovery to note true character of sand
2688 gray shale, streaks of lignite and sand
2709 gray sand
2727 gray shale
2760 gray shale, large amount pyrites, conglomerate iron stone & some lignite
2829 coarse-grained sand
2863 gray shale & sand
2900 coarse-grained sand
2962 red beds, few thin streaks of sand
2963 core 3" recovery hard quartzitic sand cored with 6" basket to recover junk in hole
2972 blue and red shale
2989 calcareous, glauconitic coarse sand
3003 red beds
3033 hard gray sand
3050 red beds
3151 coarse-grained sand
3175 brownish red shale
3328 white coarse sand
3338 sand & red shale
3370 hard white sand
3436 reddish brown shale
3469 white coarse sand, S.L.M.-3485
3575 coarse white sand
3688 reddish-brown shale
3719 reddish-brown & blue shale
3743 white sand
3753 reddish brown shale
3868 white sand
3876 very hard sand
3926 reddish-brown shale
3952 white sand
4031 reddish-brown shale, streaks of white sand
4120 mottled shale
4123 sandstone
4237 coarse white sand
4440 coarse white sand, some red, gray, brown, shale in cutting due to caving.
4455 core 2' recovery, 1' of red sand and 1' of mottled sandy lime showing 46° dip core cut hard and soft streaks

4533 sand T. D. (Hole abandoned due to caving).		2000 ft.	off 3°
		2250 ft.	off 5°
Straight hole tests	500 ft. off 3°	2500 ft.	off 5°
	1000 ft. off 3°	3000 ft.	off 10°
	1500 ft. off 3°	3500 ft.	off 14°

REMARKS: The above log was assembled from the cuttings which were saved each 20 feet and the manner in which the various formations drilled. It is impossible to know the true character of sands encountered as to their porosity or content, because of lack of cores, and the failure to recover what few were taken.

The various interests in this test and acreage were distributed as follows:

Ramsey Petroleum Corporation: One-half interest
Tidal Oil Company: One-fourth interest
George Monahan: One-eighth interest
Danciger Oil & Refining Co.: One-eighth interest
(FN 386)

0- 100+—Mariana
110- 200+—Jackson
Cut Jackson fault at 220 ft.
220- 249—Probably Wilcox
249- 339—Salt Mountain Limestone
Well started in the Marianna
Cut Jackson Fault at 220'
Top Selma chalk 801'
Top Eutaw 1340'
Top Tuscaloosa 1692' and continued to bottom of hole.
339- 801—Midway
801-1478—Selma Chalk
1478-1738—Eutaw
1738-4487—Tuscaloosa. Total depth.

Mississippi Well Log Service (Robert L. Steffey, Jackson, Miss). Ohio's Bethel Log. Ohio Oil Company's. James Bethel No. 1. Mobile County, Alabama. Check: 330's & 330'E of NWc SW/4 NE/4. Location: Sec. 34-3S-2W. Began: June 24, 1932. Abandoned: August 15, 1932. Elevation: 100' (Approx.) Casing record: 18⅝"-62.5'; 13⅜"-775'; 9⅞"-3247'. (FN 3 9 5)

0-10	sand	780	shale, shells
45	yellow clay	791	blue, gray org. sdh. (c)*
62	sand, gravel	900	soft shale
212	sand, gumbo	915	water sand
272	water sand	928	shells, sand
620	gray sand	1085	shale, sand
680	sand, gravel	1111	blue gray mic. sd (c)
771	sand	1356	fossils, sand, shells

*(C) indicates cores

1385 sand, gravel
1416 sand, gravel
1446 lignite, shale, shells
1570 shale, shells, sand
1630 gravel, sand
1740 shale, shells, gravel
1752 shale, shells, gravel (core-sand, limy)
1777 lime
1787 broken lime
1809 fossils, shells, shale
2008 gumbo, boulders (core)
2016 gumbo, boulders (2016-2022 core)
2083 chalky lime
2088 chalky lime, shells (c)
2155 lime
2167 greenish, calc. clay (c)
2198 limey shale, shells
2233 lime, green shale
2236 lime, shale (core)
2249 glauconitic, marly earth (core)
2275 lime, shale
2300 rotten shale
2306 rotten shale (core)
2319 glauconitic marl (c)
2327 shale, shells, glauc.
2339 Midly glauc. marl (c)
2418 shale, strks. lime
2443 lime, strks. shale
2445 hard lime
2460 salt water sand (c)
2465 lime
2496 shale, hard strks. lime
2534 sandy lime
2548 glauconite, shale
2655 glauconite, shale
2690 shale; glauconite (c)
2807 shale; fine sand (c)
2829 glauconitic sand in boring in lignitic shaly sand (c)
2928 rotten shale, little fine sand
2980 sand, shale
2991 hard glauconitic sand and clay
3002 SLM (which balances crooked hole)
3040 sandy shale
3050 soft sand, shells, (c) shaly sand w/quartzite
3245 sandy shale
3338 shale, thin rocks, dark shale w/fine sand (c)
3537 shale, thin rocks
3540 glauconitic marl
3555 shaly sand & shale (c)
3650 shale, thin sand laminae (core) dark sandy shale
3819 shale, thin rocks gummy shale
3828 calcitized sand, green, yellow (core)
3833 hard sandy lime
3883 hard lime rock
3998 sandy shale
4015 hard green glauconitic marly sand gummy shale (c)
4285 sandy shale, thin rocks
4298 light & dark gray shaly sand, lignitic (core)
4530 sandy shale
4545 banded light & dark shaly fine-grained sand (core)
4781 fine-grained shale said & thin rocks (core)
4795 banded dark greenish gray to black shale w/few sand lenses (core)
4980 gray to black shale
5070 dark steel gray shale
5083 dark steel gray shale (c)
5275 dark steel gray shale (core)
5351 gray, slickensided & brecciated chalk (cored continuously)
5351 T. D. (corrected for crooked hole)

(FN 3 9 5)

(c)* indicates cores

Danciger Oil & Refining Co. R. C. Avant & Son No. 1. Washington Co., Ala. Location Sec. 25—5 N—4 W. 281′ N 75° W of center of NE/4 SW/4 of Section 25. Began Nov. 2, 1933. Abandoned Jan. 19, 1934. Elevation 248′ Bar. Casing record: 20″-57′7½″; 12½″-960′1″;

0-24 surface sand
28 surface clay
73 sandy clay
97 sandy clay
110 sand and gravel
175 sandy shale
178 lignite
195 water sand
203 sticky shale
238 sticky shale (yellow)
246 sandy shale (blue)
260 sticky shale (blue)
268 shale (blue)
276 sand (gray) core No. 1 268′-288′ 1′ recovery light gray sand and gumbo
344 broken shale
349 sticky shale (blue & red) core No. 2 348′-366′, 18″ recovery at top light green tough gumbo
370 sticky shale (blue & gray, greenish)
403 sandy shale (light green)
409 sticky shale
421 broken sand & shale
461 sandy shale
474 tough sticky shale
515 shale with streaks of sand
544 sticky shale with streaks of sand (light green) core No. 3 4′ recovery 537′-553′
562 sandy shale (light green)
590 shale with shells (blue & green) core No. 4 570′-590′ 5′ recovery limey sand & shale with fossils
625 sand, shale & lime with shells (hard)
641 hard sandy shale lime shells
642 hard lime (white)
668 sticky shale & shells (blue)
671 very hard lime with shells
672-710 very hard lime, black shale broken over 2′ (No. 5 prepare to core?)
671-672 hard gray sand
721 green shale & sand
823 gray sand (soft)
825 gray lime
828 green shale
829 lime
834 hard lime rock
855 blue shale & lime shells
920 sandy shale & lime shells
935 tough sticky shale (corrected steel line measurement 963′)
1043 sticky shale blue
1058 sandy shale
1075 sticky shale
1090 sticky shale blue
1161 gray shale & lime shells
1162 hard lime gray
1225 soft gray sand
1256 blue sticky shale & shells
1263 (correction)
1260 green sticky shale
1263 sandy lime
1275 sandy shale & shells (core No. 6 1263′-1269′ 6′ recovery)
1337 sticky shale (slight gas odor)?
1364 blue sticky shale
1432 sandy shale & shells blue & gray
1466 blue sticky shale
1540 blue sticky shale
1570 gray shale & shells
1627 gray shale & shells
1642 blue sticky shale
1671 blue sandy shale
1694 gray sandy shale & lime shells strks.
1724 blue sticky shale & streaks shells
1740 gray & brown hard shale
1744 gray hard sandy lime
1750 hard lime & sandy shale (core No. 7 1744′-1750′ 6′ recovery very hard lime at top then hard sandy shale)
1763 blue sandy shale
1800 gray sandy shale

1801 gray lime shells
1839 blue sticky shale
1896 blue sticky shale
1964 sticky shale & shells
1987 blue sticky shale & shells
2003 sandy shale
2101 shale sticky streaks
2120 blue sticky shale
2123 very hard lime
2158 gray sandy shale
(Core No. 8 2123'-2129' 6' recovery dark gray to darg green shale sand with mica, some fossils.)
2160 very hard sandy lime
2165 very hard lime, sandy micaceous quartzitic
2166 brown sticky shale, sandy
2177 dark gray sand and shale (core No. 9-2166'-2177' 1' recovery dark gray sand & shale with hard sandy lime at bottom)
2180 hard sandy lime
2200 gray sandy shale
2247 green sticky shale
2266 green sticky shale
2269 hard gray sandy lime
2276 gray sticky shale
2340 green sticky shale
2347 blue & green sticky shale
2357 gray shale & shells
2358 very hard gray lime
2383 green shale
2417 brown sandy shale
2440 gray shale
2456 gray sticky shale
2457 very hard gray lime
2477 green sticky shale
2478 very hard gray lime
2520 blue sticky shale
2521 very hard gray lime
2588 very sticky bluish shale
2616 gray sticky shale
2680 gray sticky shale
2766 gray sticky shale
2757 lime shells
2769 gray sticky shale
2789 gray sticky shale
2859 gray sticky shale
2971 hard shale with sticky streaks gray & brown
2979 hard gray shale
2981 hard lime, shells, gray
2990 brown shale
2992 gray lime, shells
2994 gray & green shale (corrected S. L. M. 3014' 7")
3018 sticky shale, sandy shale streaks (core No. 10, 3014'7"-3020' 5' 5" recovery, top sandy shale, hard, containing mica, pyrite & fossil shells)
3048 hard shale with sticky streaks
3148 hard brown & sticky shale
3162 sticky shale
3243 tough brown sticky shale
3246 gray lime
3251 sticky shale
3352 greenish gray sticky shale
3420 brown & green sticky shale
3432 greenish gray sticky shale
3434 hard gray lime
3437 hard brownish green sandy shale (core No. 12 - 3437'-3439' 2' recovery)
3439 bluish green hard sandy shale with mica, few fossils
3451 bluish green hard sandy shale with mica, few fossils, (core No. 13 3454' - 3457' 3' recovery)
3462 hard to soft sandy shale, bluish gray
3480 blue sandy shale (core No. 14 3480'-83' 3' recovery)
3483 hard gray sandy shale
3523 gray sandy shale
3549 sandy shale & shells gray & green
3551 hard lime very hard
3553 hard lime very hard (core No. 15 3555' - 58')
3603 shale—blue & gray with sticky streaks
3654 hard shale with sticky streaks
3659 hard shale with sticky streaks
3660 lime—shells
3684 sticky shale blue
3685 lime shells
3717 shale with sticky streaks, green & blue
3729 sticky shale—green

3730 lime shells
3744 sand gray (core No. 16 - 3730'-33')
3771 sandy shale, gray & black
3776 lignite—black (core No. 17-3771'-74')
3781 sand gray (core No. 18—3778-81')
3784 sand gray
3817 shale brown
3819 lime hard gray
3828 sticky shale brown
3835 sticky shale & thin streaks of sand brown (core No. 19-3829'-31½)
3841 sandy shale brown
3844 lime rock very hard gray
3848 sandy gray (core no. 20—3845'-48')
3887 sandy shale, sand with streaks sticky of shale green and gray
3936 sticky shale green
3940 sandy shale green
3942 sandy shale, greenish gray
3948 black poker chip shale (core No. 21—3943'-3946')
3976 sandy shale brown
3998 sticky shale brown
4003 sandy shale brown (core No. 22 3999½-4002)
4008 sandy shale—micaceous gray (core No. 23—4005-4008)
4042 tough sticky shale dark gray
4049 shaley sand with sticky streaks (core No. 24—4042-4045)
4116 shale with sticky shale streaks brown and gray
4143 sticky shale green
4150 mucky shale
4156 sandy limestone, very hard greenish gray
4168 black poker chip shale, hard (core No. 25—4156-4158)
4183 hard shale dark gray
4196 hard shale dark gray
4209 hard shale with thin shells
4324 hard shale with sticky streaks (core No. 26—4302-4305)
4326 hard lime gray
4341 hard shale gray
4362 sticky shale very tough
4378 hard shale with sticky streaks, brown
4380 hard lime gray
4416 hard brown shale corrected S. L. M. to 4411'
4427 hard shale sticky streaks gray (core No. 27—4411-14)
4429 hard lime gray
4451 sticky shale with little fine sand gray to green (core No. 28 4429-32)
4474 sticky shale grayish green (core No. 29—4456-58)
4477 very hard sandy limestone-greenish gray
4470 hard shale brown
4524 hard shale brown & gray
4525 hard sandy lime gray
4527 hard sandy lime gray (Witness S. L. M. 1-6-34 affidavits)
4531 hard shale brown
4573 sticky shale brown
4599 hard shale brown
4601 hard lime gray
4617 hard sandy shale gray (core No. 30 4614-17')
4629 hard shale tough gray
4631 sandy lime hard gray
4636 hard shale tough gray
4647 sticky shale gray
4661 dark steel gray poker chip shale, very hard with breaks of chalk
4670 dark steel gray poker chil shale hard (core No. 31 4662-4664')
4671 sandy lime gray
4693 dark steel gray poker chip shale very hard
4746 hard shale black (core No. 32 4746-49)
4752 hard steel gray shale (core No 33 4750-53')
4760 white chalk, very hard (continuous coring)
4765 white chalk (core No. 34—4762-65)
4780 white chalk

4811 broken chalk very hard with little black shale (core No. 38 4813-42)
4865 broken chalk with little shale (core No. 39—4842-4865')
4865 T. D.

Summary

Clays from 286-366 ft. probably Miocene
537-53 ft. to between 806 & 826 ft. Miocene
806-26 ft. to approximately 900 ft.—Oligocene
960-80 ft. to 1337—Jackson
1337-57 ft. to about 2813-36 ft.—Claiborne
2813-36 ft. to about 3940 ft.—Wilcox
3943 ft. to 4760 ft.—Midway
4760 ft to 4865 ft.—Selma chalk

REMARKS

The logs of the Bollinger, McCorquodale and L. T. Adams (Cottage Hill) wells were printed in Special Report 15, Geological Survey of Alabama, and are not reprinted here. The log of J. C. Prine well is not yet available, since this well was only recently completed.

In Special Report 15 will be found the logs of other wells in this area, the locations of which are not shown on the map.

ALABAMA GEOLOGICAL SURVEY

WALTER B. JONES, STATE GEOLOGIST

MAGNETIC MAP OF SOUTHWEST ALABAMA

PREPARED BY

E. C. NICAR, STAFF GEOPHYSICIST

UNDER SUPERVISION OF

J. BRIAN EBY, GEOLOGIST

1936

GRAPHIC SCALE

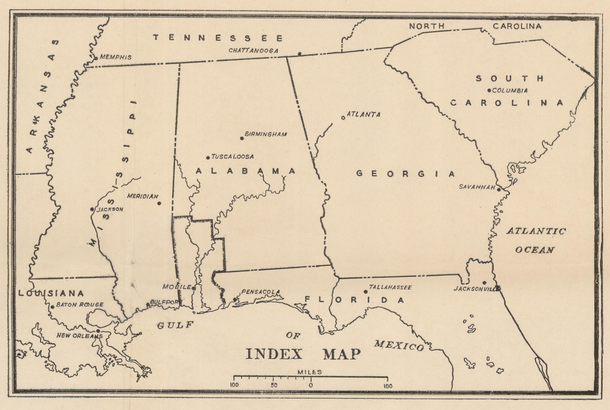
1 ½ 0 1 2 3 4 5 6 7 8 MILES

LOCATION OF MAGNETIC OBSERVATION AND VALUE IN GAMMAS..... 975

CONTOURS ARE ISOGAMS OF EQUAL VERTICAL INTENSITY WITH TEN GAMMA INTERVAL EXCEPT NORTHERN CLARK AND WASHINGTON COUNTIES WHERE TWENTY GAMMA INTERVAL IS USED.

ALL STATIONS ARE CORRELATED TO A PRIMARY BASE AT MOBILE OF ASSUMED FIVE HUNDRED GAMMA VALUE.

OBSERVATIONS MADE BY ASKANIA VERTICAL VARIOMETER.



Drawn by D.C. Stallworth — Feb. & March, 1936