

STATE OF INDIANA
INDIANA DEPARTMENT OF CONSERVATION
DIVISION OF WATER RESOURCES

BULLETIN NO. 16

GROUND-WATER RESOURCES OF
WEST-CENTRAL INDIANA

Preliminary Report: Clay County



Prepared by the
GEOLOGICAL SURVEY
UNITED STATES DEPARTMENT OF THE INTERIOR
In cooperation with the
DIVISION OF WATER RESOURCES
INDIANA DEPARTMENT OF CONSERVATION

1962

INDIANA DEPARTMENT OF CONSERVATION

Donald E. Foltz, Director

BULLETIN NO. 16

OF THE

DIVISION OF WATER RESOURCES

Charles H. Bechert, Director

GROUND-WATER RESOURCES OF WEST-CENTRAL INDIANA

Preliminary Report: Clay County

BY

F. A. WATKINS, JR., AND D. G. JORDAN

ENGINEERS, U. S. GEOLOGICAL SURVEY

Prepared by the

GEOLOGICAL SURVEY

UNITED STATES DEPARTMENT OF THE INTERIOR

In cooperation with the

DIVISION OF WATER RESOURCES

INDIANA DEPARTMENT OF CONSERVATION

1962

CONTENTS

	Page
Abstract-----	1
Introduction-----	2
Purpose and scope-----	2
Location and areal extent-----	2
Well-numbering system-----	4
Acknowledgments-----	5
Data collection and processing-----	5
General geology and sources of ground water-----	6
Confined and unconfined conditions-----	7
Types of wells-----	8
Summary-----	8
Records-----	9
Glossary of drillers' terms-----	10
Selected bibliography-----	11
Publications of the cooperative ground-water program-----	306
Index-----	309

ILLUSTRATIONS

(All plates in pocket)

	Page
Plate 1. Map of Clay County, Ind. showing location of wells and springs-----	
2. Map of Clay County showing availability of ground water-----	
3. Map of Clay County showing hardness of ground water-----	
Figure 1. Map of Indiana showing area covered by this report, areas under investigation, and areas covered by reports published under the cooperative program-----	3
2. Sketch showing well-numbering system-----	4

TABLES

	Page
Table 1. Records of wells in Clay County, Ind.-----	12
2. Selected well logs in Clay County-----	27
3. Field chemical analyses of water from wells in Clay County-----	287
4. Records of springs in Clay County-----	297
5. Field chemical analyses of water from streams in Clay County-----	298
6. Water levels in observation wells in Clay County-----	301

GROUND-WATER RESOURCES OF WEST-CENTRAL INDIANA

Preliminary Report: Clay County

By F. A. Watkins, Jr. and D. G. Jordan

ABSTRACT

Clay County, in west-central Indiana, has an area of about 364 square miles. Consolidated rocks of Pennsylvanian and Mississippian ages and unconsolidated rocks of Pleistocene age are the sources of ground water for domestic, stock, industrial and municipal supplies. Wells in rocks of Pennsylvanian age range from about 20 to 440 feet in depth; their yields range from less than 1 to about 70 gpm, with some dry holes reported. Wells in sand and gravel of Pleistocene age range from about 25 to 160 feet in depth; yields range from less than 1 to about 370 gpm. Field chemical analyses of water from these sources show that the chemical quality differs greatly. Waters from aquifers of Pennsylvanian age have an average hardness of 180 ppm, average chloride content of 30 ppm, and an average sulfate content of 55 ppm. Waters from aquifers of Pleistocene age have an average hardness of 290 ppm, average chloride content of 20 ppm, and an average sulfate content of 40 ppm. Locally, either the iron, sulfate, or chloride content exceeds the recommended standards of the U. S. Public Health Service (1946) for drinking water.

This preliminary report contains tabulated records of about 789 wells and other drilled holes giving information about well construction, water levels, conditions of occurrence, and characteristics of the water-bearing material; selected logs for about 644 wells and other drilled holes giving the drillers' description of the material encountered and a tentative interpretation by the authors of the geologic age; records of 4 springs giving information about geologic source, yield and temperature of the water; results for 393 field chemical analyses of water from wells, 4 field chemical analyses of water from springs, and 23 field chemical analyses of water from streams, giving the hardness and the bicarbonate, chloride, iron, and sulfate content; and water levels in 4 observation wells indicating the magnitude of short and long-term water-level fluctuations in the consolidated and unconsolidated rocks. These basic data include much of the material to be used in an interpretive report on ground-water resources and on the geology of the area.

A base map of Clay County shows the location of all water wells, holes drilled for purposes other than water supply, springs, and stream sampling sites listed in this report. Additional maps show availability of ground water and generalized quality of water conditions with respect to hardness, and areas of high chloride and sulfate content.

INTRODUCTION

Purpose and Scope

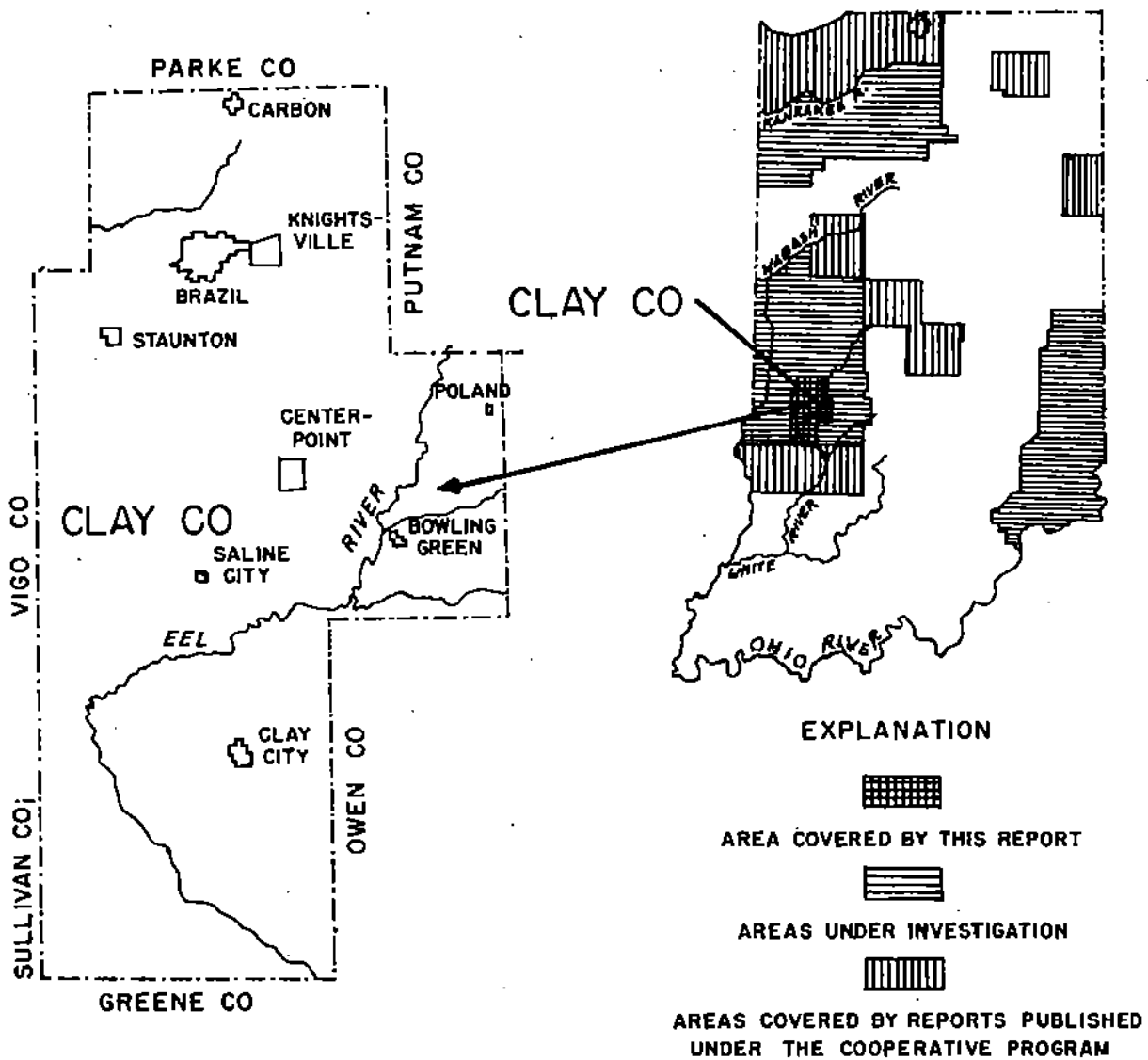
An investigation of the ground-water resources and geology of nine counties in west-central Indiana has been conducted intermittently since 1950. In 1956 the investigation was placed on a full-time basis and another county was added to the area of study. This investigation is being made by the U. S. Geological Survey in cooperation with the Division of Water Resources, Indiana Department of Conservation, as a part of a broad program of these agencies to inventory and evaluate the ground-water resources of Indiana.

This report is the third of a series of preliminary reports to be published on the ground-water resources and geology of west-central Indiana. The purpose of this report is to make the basic data collected during the investigation available to the public and to provide a preliminary evaluation of the geology and ground-water conditions as an aid to the development of the ground-water resources. A more detailed and comprehensive analysis will be published in an interpretive report on the ground-water resources and geology of the area.

The investigation was made under the general direction of A. N. Sayre and P. E. LaMoreaux, successive chiefs of the Ground Water Branch of the U. S. Geological Survey, and under the immediate supervision of F. H. Klaer and C. M. Roberts, successive district geologists of the Ground Water Branch for Indiana.

Location and Areal Extent

Clay County is in the west-central portion of Indiana (fig. 1). The county is roughly rectangular in shape and has an area of about 364 square miles. It is bounded on the north by Parke County, on the east by Putnam and Owen Counties, on the south by Greene County, and on the west by Sullivan and Vigo Counties.



SEE PAGE 306 FOR LIST OF PUBLISHED REPORTS

FIGURE 1.-- Map of Indiana showing area covered by this report, areas under investigation and areas covered by reports published under the cooperative program.

Well-numbering System

A numbering system is used to locate and identify the wells, holes drilled for purposes other than water supply, and springs in this report. The number assigned indicates the location according to the official rectangular survey of public lands. For example, in the number for well 11/6W-32D1, the part preceding the hyphen indicates that the well is in T. 11 N., R. 6 W. The first number after the hyphen indicates the section in which the well is located. Each quarter-quarter section (40-acre tract) within a section is given a letter symbol as shown on figure 2. Within the quarter-quarter section, wells are numbered serially. Therefore, well 11/6W-32D1 is the first well listed in NW $\frac{1}{4}$ NW $\frac{1}{4}$, sec. 32, T. 11 N., R. 6 W.

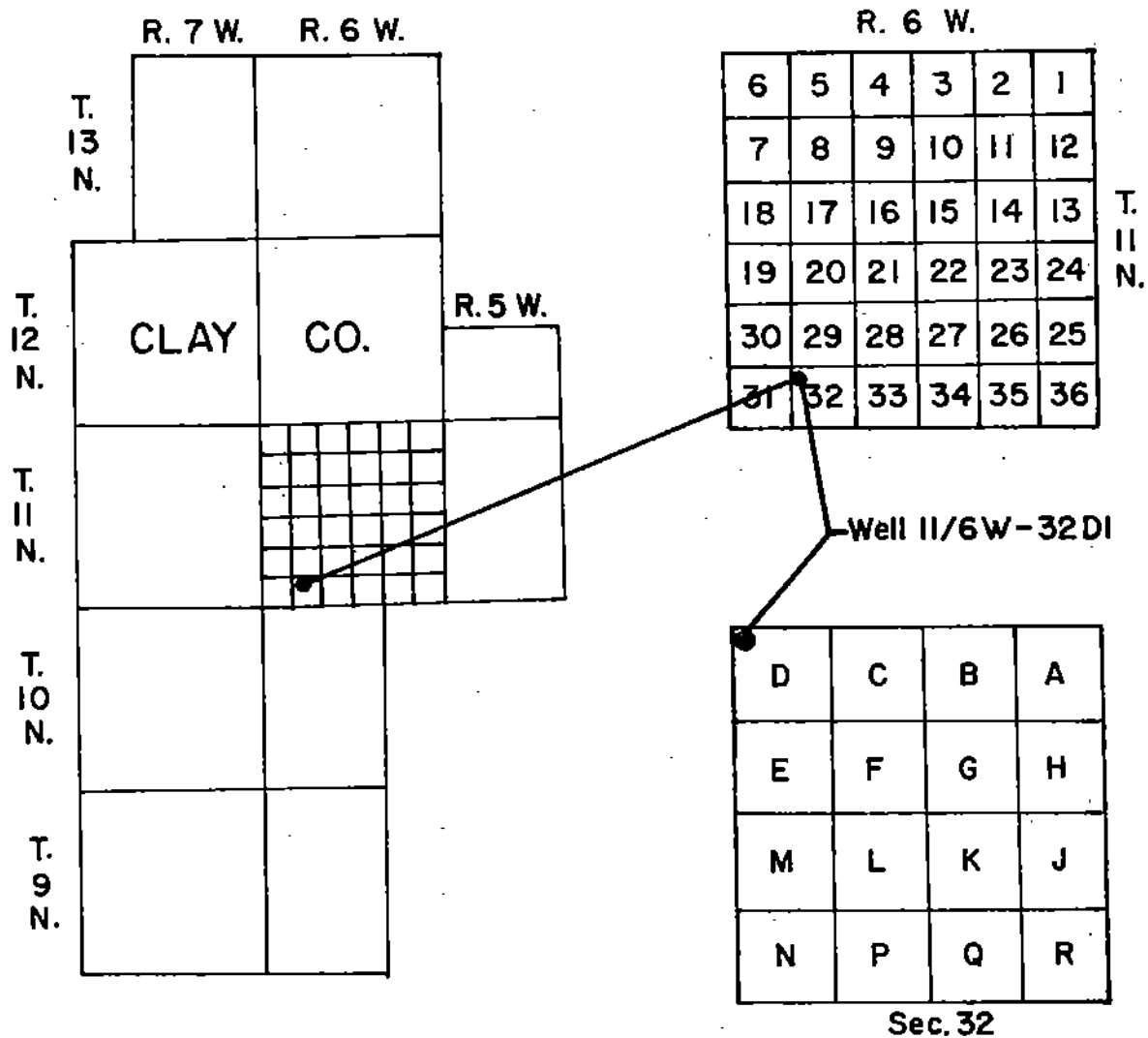


FIGURE 2.-- Sketch showing well-numbering system.

Acknowledgments

The authors thank all persons who contributed time, information, and assistance during the collection, tabulation, and processing of data for this report. We especially thank the well drillers listed in the table of well records who furnished much of the information summarized in tables 1 and 2.

The authors also thank the following government agencies which provided information for the report: the Coal Section of the Geological Survey, the Division of Oil and Gas, and Division of Water Resources, all of the Indiana Department of Conservation; and the Indiana State Highway Department.

DATA COLLECTION AND PROCESSING

The well data were collected from drillers, water works superintendents, and others. The well records obtained from drillers were of two types--written records and reports from memory. A tentative driller's location of the well record was obtained at the time of collection and this was checked against the property records in the county courthouse to verify the location, to locate the property, and to obtain the name of the current property owner. Any discrepancy between the driller's location and the location shown in the plat book was corrected. The well location was then checked in the field and its location plotted on the appropriate U. S. Geological Survey 7½ minute topographic quadrangle map. The locations given on the records of test holes, oil or gas exploration holes, and wells from other reports were accepted without further verification.

Plate 1 shows the location of water wells, oil wells, test holes, drain holes, or holes drilled for purposes other than water supply, springs, and stream sampling sites. All locations are accurate to the nearest quarter-quarter section and most locations are shown to the nearest 10 acres or quarter-quarter-quarter section. The basic data for these wells and holes drilled for purposes other than water supply are summarized in table 1. Selected drillers' logs of wells and other drilled holes with tentative interpretations by the authors of the geologic age of the materials encountered are given in table 2. Basic data for the springs are summarized in table 4.

Samples of water were collected at the time the well and spring sites were visited and from the streams during a period of low flow. These water samples were analyzed in the field office for hardness, alkalinity (expressed as bicarbonate), and chloride content by standard titration methods. Sulfate was determined by a turbidimetric method using a colorimeter when concentrations were below 100 ppm (parts per million) and by a standard titration method when concentrations exceeded 100 ppm. The total iron content was determined at the well site immediately after collection by the bipyridine method by comparison with standard color ampules having known iron concentrations. The results of the field chemical analyses (tables 3, 4 and 5) were used to select sites for collecting larger water samples for more comprehensive and accurate analyses by the laboratory of the U. S. Geological Survey.

During the investigation observation wells were established to measure the fluctuations of water-level. Table 6 contains water-level measurements obtained from these wells. The data from these observation wells show the effect of seasonal and longer term variations of the ground-water level.

GENERAL GEOLOGY AND SOURCES OF GROUND WATER

The oldest consolidated rocks underlying Clay County that are important as ground-water sources are of Early and Middle Pennsylvanian age. The rocks of Pennsylvanian age consist chiefly of sandstone, sandy shale, and shale. Limestone and coal make up a minor part of the rock units in this sequence. The limestone is of little economic importance but the coal deposits are of major economic importance.

Consolidated rocks of Pennsylvanian age crop out throughout the county. Sandstones are the principal source of ground water from consolidated rocks and are extensively used for domestic and stock supplies, a few small industrial supplies and one municipal supply. Well depths range from about 20 to 440 feet, the average depth being about 135 feet. Yields from these wells range generally from less than 1 to about 70 gpm, although some dry holes have been reported.

Consolidated rocks of Mississippian age are a minor source of ground water along the eastern edge of the county.

The unconsolidated glacial deposits of Pleistocene age overlie the consolidated rocks of Pennsylvanian and Mississippian ages. Along the Eel River and some of its tributaries there are large deposits of glaciofluvial sand and gravel laid down during the time the Eel valley was a major discharge channel for melt water from glaciers farther to the north. These deposits are an important source of ground water for domestic, stock, and industrial supplies and are the source used for public supplies by the towns and cities in the county, with the exception of Staunton, which obtains its water from rocks of Pennsylvanian age. A similar deposit of glaciofluvial sand and gravel, near Poland, is used for domestic and stock supplies. Well depths range from about 60 to 160 feet, the average depth being about 90 feet. Yields from these wells range from about 5 to 370 gpm; however, these deposits may have a much larger potential than indicated by the above yields.

Glaciofluvial sand and gravel are associated with clayey and sandy-clay till in the northern half of the county and to a lesser extent in the southern half of the county. The sand and gravel were deposited as lenses or thin stringers on bedrock and are overlain by till or interbedded with the till. There is a close relationship between the extent of pre-glacial bedrock channels and the sand and gravel deposits. In many areas these deposits are, or with proper development could be, additional sources of ground water for domestic, stock, and small industrial supplies, and locally for even larger supplies. In the upland areas the glacial deposits consist chiefly of a clayey to sandy-clay till and do not yield water freely.

Lake sediments are present in several small areas in southern Clay County. Along the Eel River and some of its tributaries these sediments were deposited on bedrock or on glaciofluvial sand and gravel. These lacustrine deposits, consisting chiefly of silt and clay, do not yield water freely, but in areas where interbedded sand and gravel lenses are present they may be potential sources for domestic and stock supplies.

Wells tapping the sand and gravel aquifers associated with the till and lacustrine deposits range in depth from about 25 to 110 feet and have yields ranging from less than 1 to about 175 gpm. At the present time many of the wells drilled in these areas pass through the sand and gravel deposits and are completed in the Pennsylvanian bedrock.

Deposits of Recent age in Clay County are thin and consist mostly of flood-plain [sediments] and wind-blown sand, which are not important as sources of ground water.

Plate 2 shows availability of ground water in the consolidated and unconsolidated rocks underlying the county. Plate 3 shows generalized quality of water conditions in the consolidated and unconsolidated rocks with respect to hardness. This map also shows areas where the chloride and sulfate content exceeds the limits for these constituents as established by the U. S. Public Health Service (1946).

The quality of water differs greatly in hardness and chemical content in the aquifers of Pennsylvanian age and to a lesser extent in aquifers of Pleistocene age. The range of hardness, and of chloride and sulfate content of water from aquifers of Pennsylvanian and Pleistocene age are shown below.

Pennsylvanian

	Hardness	Chloride	Sulfate
Maximum	1,620	2,540	1,250
Minimum	Near 0	1	5
Average <u>a/</u>	180	30	55

Pleistocene

Maximum	665	160	155
Minimum	130	Near 0	10
Average	290	20	40

CONFINED AND UNCONFINED CONDITIONS

In Clay County ground water occurs in the consolidated and unconsolidated rocks chiefly under confined (artesian) conditions, but in some places it occurs under unconfined (water-table) conditions. Under confined conditions, the saturated water-bearing material (aquifer) is overlain directly by relatively impervious material, and the water in the well bore, which is confined under pressure in the aquifer, will rise above the bottom of the impervious material. Under unconfined conditions, the water-bearing material (aquifer) is overlain directly by permeable unsaturated material and is in hydraulic continuity with the atmosphere, hence, the water does not rise above the level at which it is encountered. Thus, under confined conditions a fluctuation of water level represents a response to a pressure change in the aquifer, whereas under unconfined conditions a fluctuation of water level actually represents a change in the amount of water in storage.

a/Averages do not include those analyses having high hardness or chloride or sulfate content (over 1,000 ppm), which were a small percentage of the total analyses.

TYPES OF WELLS

Drilled wells are the principal type of water wells used in Clay County. However, a small number of driven and dug wells are still in use and wells are occasionally constructed by one of these methods. A few wells have been drilled by the rotary or reverse-rotary methods. Most water wells are 6-inches or more in diameter and are constructed by the cable-tool or percussion method of drilling. A well drilled by the cable-tool method is constructed by a combination of drilling, bailing, and driving casing. When the water-bearing material is consolidated rock, the well casing generally is driven a few inches to several feet into the rock, and the well finished as an open hole in rock. When the water-bearing material is sand and gravel, the well casing is driven into the water-bearing zone and either left as an open-end casing, or the lower end of the casing is slotted or perforated, or a well screen is set opposite the water-bearing zone below the end of the casing. A modification of the above type, the gravel-packed well, has a gravel lining between the well screen and the water-bearing material.

In Clay County municipal-supply wells drilled in sand and gravel are equipped with well screens. Most domestic and stock wells constructed in sand and gravel do not use a screen, but are finished with an open-end casing or either a slotted or perforated casing. Greater dependability and improved yields of wells in the coarser unconsolidated materials and development of wells in the finer unconsolidated materials are possible with the construction and use of properly screened wells.

In areas where the water level in the unconsolidated material is close to the surface, some water wells are constructed by driving or digging. The driven well consists of a small diameter pipe with a drive point on the end, which is driven into shallow water-bearing material. The dug well is constructed by digging a hole, usually about three feet in diameter, into the upper part of the water-bearing material and using concrete pipe, tile, brick, or stone as a casing.

The oil or gas exploration holes, test holes, drain holes, and holes drilled for purposes other than water supply are drilled by either the cable-tool or rotary method in Clay County.

SUMMARY

Preliminary evaluation of the basic data shows that adequate quantities of ground water are generally available for domestic and stock use, and in some places for small industrial and small public supplies from the rocks of Pennsylvanian age. In the sand and gravel of Pleistocene age, along the Eel River, ground water is available in adequate quantities for domestic and stock use and locally for industrial, irrigation, and public supplies. These sand and gravel deposits are the source of all large-yield wells in Clay County. Another source of domestic and stock supplies and possibly small industrial supplies are the sand and gravel deposits interbedded and overlain by till in the preglacial bed-rock channels. Interbedded sand and gravel in the lake sediments may contain ground water in adequate quantities for domestic and stock supplies.

The quality of the water from the rocks of Pennsylvanian and Pleistocene ages varies greatly. Locally water from these sources exceeds the U. S. Public Health Service (1946) drinking-water standards for either iron, chloride, or sulfate content.

RECORDS

The records of about 789 water wells and holes drilled for purposes other than water supply are given in table 1. The table gives information about well construction, water levels, yields and drawdowns, thickness and characteristics of the water-bearing material, conditions of occurrence, use, and other pertinent data. The altitude of the land surface at all wells, except oil or gas exploration holes, was determined from topographic maps. Altitudes of oil or gas exploration holes were on the records when received and were checked against the topographic maps.

Table 2 contains the selected logs of about 644 wells and other drilled holes. This table gives the drillers' description of the material encountered, pertinent remarks with regard to the material, and tentative interpretation by the authors of the geologic age of the material. The logs contain local terms used by drillers in describing the material penetrated. A glossary of drillers' terms is on page 2610

The results of 393 analyses of well waters are given in table 3. These chemical analyses were made in the field office of the U. S. Geological Survey. The table gives information about geologic source, temperature, concentration in ppm (parts per million) of iron, alkalinity (expressed as bicarbonate), sulfate, chloride, and hardness of water. The U. S. Public Health Service (1946) drinking-water standards state that the chemical constituents should not exceed the following concentrations: iron and manganese (together), 0.3 ppm; sulfate, 250 ppm; chloride, 250 ppm. No standards have been established for hardness of water; however, the following classification is generally used: 0-60 ppm, soft; 61-120 ppm, moderately hard; 121-200 ppm, hard; more than 200 ppm, very hard. Water having a hardness of more than 200 ppm requires softening for many purposes.

The records of 4 springs are given in table 4. This table gives information about geologic sources, yield, use, temperature of the water, and the results of field chemical analyses.

Table 5 gives the results of 23 field chemical analyses of water from streams in Clay County with other data.

Water levels in 4 observation wells in Clay County are given in table 6. The water levels in two of these wells were obtained by recording gages and in the other two wells by measurements made with an engineer's steel tape. Daily high water levels are given for observation wells equipped with recording gages and periodic water levels are given for the observation wells which were measured manually. The locations of these observation wells are shown on plate 1.

GLOSSARY OF DRILLERS' TERMS

- Blackjack.--Black carbonaceous shale or a clayey or shaly coal.
- Bone coal.--See Blackjack.
- Boots.--Any material, usually a shale, which when drilled adheres to the bit and stem of the drilling tools.
- Bottoms.--Underclay generally found beneath a coal; the bottom or floor of a mine entry.
- Chunky.--Breaks into small blocks or cube-shaped pieces.
- Clay rock.--Clay hardened by pressured and/or cementation by some mineral, usually a carbonate or silicate.
- Coal fault.--An irregularity in the coal, especially places where the coal is more or less displaced by fire clay, shale, or sandstone.
- Drift.--Any rock material, such as boulders, till, gravel, sand, or clay, transported by a glacier and deposited by or from the ice or by or in water derived from the melting of the ice.
- Hardpan.--A hard impervious layer composed chiefly of clay and cemented by relative insoluble materials; does not become plastic when mixed with water.
- Jack.--See Blackjack.
- Pan.--Clay of glacial origin; generally contains small pebbles and occasional boulders.
- Pasty.--Smooth, sticky, when used with a rock term.
- Redrock.--Red soft to hard sometimes sandy shale.
- Shell.--Thin and usually hard layer of rock.
- Shelly.--See shell; rock which splits in thin pieces parallel with the bedding surface; a fossiliferous rock.
- Slate.--Hard shale which splits into thin platy fragments, usually black in color.
- Smut.--Soft coal containing much earthy matter.
- Soapstone.--Hard smooth clay or shale, slippery to the touch.
- Softpan.--Hard impervious layer composed chiefly of clay, partially cemented by relative insoluble materials; becomes plastic when mixed with water.
- Steel band.--Reportedly a hard brown dolomitic fresh-water limestone. May also be used in place of the term iron band, which is generally applied to a black or brown, hard silicate or iron carbonate rock that occurs as a zone of concretions from pebble to boulder size or in thin beds.
- Sulfur.--Thin band or layer of pyrite in a coal seam.
- Wash.--Water laid glacial material consisting of sand, silt, and clay with a high percentage of twigs, leaves, and other organic material.
- White top.--White shale or fire clay.

SELECTED BIBLIOGRAPHY

- Ashley, G. H., 1899, The coal deposits of Indiana: Ind. Dept. Geology and Nat. Resources 23rd Ann. Rept., 1573 p.
- Hem, J. D., 1959, Study and interpretation of the chemical characteristics of natural water: U. S. Geol. Survey Water-Supply Paper 1473, 269 p.
- Hutchison, Harold C., Distribution, structure, and mined areas of coals in Clay County, Indiana: Ind. Dept. Conserv., Geol. Survey Preliminary Coal Map 6.
- Kottlowski, F. E., 1959, Geology and coal deposits of the Coal City quadrangle, Greene, Clay, and Owen Counties, Indiana: U. S. Geol. Survey Coal Inv. Map C-28.
- Patton, J. B., 1956, Geologic map of Indiana: Ind. Dept. Conserv., Geol. Survey Atlas of Mineral Resources Map 9.
- U. S. Geological Survey, issued annually, Water levels and artesian pressure in observation wells in the United States, part 1, Northeastern States: U. S. Geol. Survey Water-Supply Paper 840, 845, 886, 906, 936, and 1016.
- U. S. Public Health Service, 1946, Public Health Reports, reprint 2697.
- Wayne, W. J., 1958, Glacial geology of Indiana: Ind. Dept. Conserv., Geol. Survey Atlas of Mineral Resources Map 10.
- Wier, C. E., 1950, Geology and coal deposits of the Jasonville quadrangle, Clay, Greene, and Sullivan Counties, Indiana: U. S. Geol. Survey Coal Inv. Map C-1.

9/78-14Q2

10/88-3M1

Well No.	Owner	Location	Drift	4-29-52	520	62	20	50	82	Op.S	30	26	S.G	P1	C	10	357	P	Notes
14Q3	do	do	J	12-29-51	520	91	24	---	---	---	---	---	---	U	7	---	T	L, A; Dd 15 ft after 7 hr pumping at 357 gpm; screen, 10 ft of 12 in dia, No. 5 shutter	
14Q4	do	do	J	1-52	520	75	24	---	---	---	---	---	---	P1	---	---	T	L	
14Q5	do	do	J	1-31-52	520	80	24	---	---	---	---	---	---	P1	---	---	T	L	
15K1	do	do	J	3-9-49	530	105	6	---	---	---	---	---	---	P1	---	---	T	L	
16C1	Campbell Bros.	V. Laydon	Dr	7-31-57	580	311	0	37	Oh	---	---	---	---	P	---	---	D,S	L	
16C2	Sutherland Bros.	H. Knight	Dr	5-29-48	580	430	7	20	Oh	---	---	---	---	P	---	---	Oh	A. Stepan Oil Co. 1, La	
17K1	H. R. Knox	H. R. Knox	Dr	12-30-51	520	80	21	---	---	---	---	---	---	P	---	---	Oh	M. W. Kuhn 1, L, E	
21M1	City of Jasonville	City of Jasonville	J	11-46	550	96	7	58	Oh	---	---	---	---	P1	---	---	Oh	L. Logan (1926)	
28H1	W. Johnson	H. R. Knox	Dr	9-12-50	621	79	7	53	Oh	---	---	---	---	P	---	---	Oh	L. Logan (1926)	
28K1	J. Miller	C. J. Simpson	Dr	6-26	580	160	6	20	Oh	---	---	---	---	P	---	---	Oh	L. Logan (1926)	
30C1	U. S. Powder Co.	U. S. Powder Co.	Dr	3-25-55	595	194	6	19	Oh	---	---	---	---	P	---	---	Oh	L. Logan (1926)	
31E1	I. Williams	Indiana Department of Conservation	Dr	12-17-51	550	30	24	---	---	---	---	---	---	P	---	---	Oh	L. Logan (1926)	
31M1	I. Cotton	I. Cotton	Dr	12-10-51	575	21	24	---	---	---	---	---	---	P	---	---	Oh	L. Logan (1926)	
31R1	do	do	Dr	7-50	590	150	6	82	Oh	---	---	---	---	P	---	---	Oh	L. Logan (1926)	
33B1	City of Jasonville	City of Jasonville	J	---	570	261	6	104	Oh	---	---	---	---	P	---	---	Oh	L. Logan (1926)	
35E1	N. Slador	N. Slador	Dr	---	550	241	6	146	Oh	---	---	---	---	P	---	---	Oh	L. Logan (1926)	
35E1	C. W. Gambell	M. L. Bizard	Dr	---	550	241	6	129	Oh	---	---	---	---	P	---	---	Oh	L. Logan (1926)	
35E1	Protestant Church	M. L. Bizard	Dr	---	550	196	6	107	Oh	---	---	---	---	P	---	---	Oh	L. Logan (1926)	
35E1	W. Hillis	Ringo & Sen	Dr	8-23-54	565	112	6	107	Oh	---	---	---	---	P	---	---	Oh	L. Logan (1926)	
35E1	W. Rhodes	W. Rhodes	Dr	---	565	89	6	88	Oh	---	---	---	---	P	---	---	Oh	L. Logan (1926)	
3N1	E. Yegerlehner	E. Yegerlehner	Dr	11-30-53	565	89	6	88	Oh	---	---	---	---	P	---	---	Oh	L. Logan (1926)	
5E1	Indiana State Highway Department	Indiana State Highway Department	Dr	2-2-55	545	67	---	---	---	---	---	---	---	P	---	---	Oh	L. Logan (1926)	
6C1	D. Barbalet	Ringo & Sen	Dr	12-4-53	570	107	7	107	Oh	---	---	---	---	P	---	---	Oh	L. Logan (1926)	
8N1	R. E. Rector	M. O. Schreder	Dr	4-28-53	575	151	6	80	Oh	---	---	---	---	P	---	---	Oh	L. Logan (1926)	
10A1	O. Francis	Edison & Gwaltney	Dr	4-23-54	605	1,500	8	35	Oh	---	---	---	---	P	---	---	Oh	L. Logan (1926)	
10B1	V. Magens	M. O. Schreder	Dr	12-27-54	570	195	6	72	Oh	---	---	---	---	P	---	---	Oh	L. Logan (1926)	
15F1	K. Yegerlehner	Spainhower & Sons	Dr	---	560	122	7	62	Oh	---	---	---	---	P	---	---	Oh	L. Logan (1926)	
16F1	C. Yegerlehner	Spainhower & Sons	Dr	---	560	122	7	62	Oh	---	---	---	---	P	---	---	Oh	L. Logan (1926)	
16G1	C. Yegerlehner	Spainhower & Sons	Dr	---	560	122	7	62	Oh	---	---	---	---	P	---	---	Oh	L. Logan (1926)	
18J1	G. Max	M. L. Bizard	Dr	7-6-54	547	138	6	94	Oh	---	---	---	---	P	---	---	Oh	L. Logan (1926)	
17D1	Indiana State Highway Department	Indiana State Highway Department	Dr	5-5-54	556	35	---	---	---	---	---	---	---	P	---	---	Oh	L. Logan (1926)	
17M1	do	do	Dr	3-9-49	555	65	6	46	Oh	---	---	---	---	P	---	---	Oh	L. Logan (1926)	
18A1	Town of Clay City	Layno-Northern Co., Inc.	Dr	4-8-49	550	60	12	59	Oh	---	---	---	---	P	---	---	Oh	L. Logan (1926)	
18H1	do	do	Dr	---	550	60	12	59	Oh	---	---	---	---	P	---	---	Oh	L. Logan (1926)	
18E2	do	do	Dr	7-15-49	550	65	6	21	Oh	---	---	---	---	P	---	---	Oh	L. Logan (1926)	
18E3	do	do	Dr	9-14-49	550	20	6	28	Oh	---	---	---	---	P	---	---	Oh	L. Logan (1926)	
18E4	do	do	Dr	1-8-40	550	72	6	70	Oh	---	---	---	---	P	---	---	Oh	L. Logan (1926)	
19D1	J. W. Everwino	M. L. Bizard	Dr	11-18-46	586	1,875	6	61	Oh	---	---	---	---	P	---	---	Oh	L. Logan (1926)	
19J1	H. and B. Luthor	M. L. Bizard	Dr	7-19-46	570	3,200	6	---	---	---	---	---	---	P	---	---	Oh	L. Logan (1926)	
19P1	Indiana State Highway Department	Indiana State Highway Department	Dr	5-8-54	561	---	---	---	---	---	---	---	---	P	---	---	Oh	L. Logan (1926)	
19R1	do	do	Dr	11-5-54	610	145	6	21	Oh	---	---	---	---	P	---	---	Oh	L. Logan (1926)	
20H1	H. McQuary	Spainhower & Sons	Dr	---	610	171	8	28	Oh	---	---	---	---	P	---	---	Oh	L. Logan (1926)	
20L1	Frost Methodist Church	M. L. Bizard	Dr	---	600	252	8	85	Oh	---	---	---	---	P	---	---	Oh	L. Logan (1926)	
20L2	do	do	Dr	---	600	252	8	85	Oh	---	---	---	---	P	---	---	Oh	L. Logan (1926)	
20L3	do	do	Dr	---	600	252	8	85	Oh	---	---	---	---	P	---	---	Oh	L. Logan (1926)	
20P1	A. Blair	Campbell Bros.	Dr	1951(?)	590	50	6	26	Oh	---	---	---	---	P	---	---	Oh	L. Logan (1926)	
21F1	E. Neisonger	H. Ellis	Dr	---	580	160	7	110	Oh	---	---	---	---	P	---	---	Oh	L. Logan (1926)	
21L1	do	do	Dr	---	580	160	7	92	Oh	---	---	---	---	P	---	---	Oh	L. Logan (1926)	
22E1	St. Baumgartner	St. Peter's German Reformed Church	Dr	10-5-53	600	87	6	54	Oh	---	---	---	---	P	---	---	Oh	L. Logan (1926)	
22H1	do	do	Dr	9-16-53	615	250	8	51	P	---	---	---	---	P	---	---	Oh	L. Logan (1926)	
22H2	do	do	Dr	---	615	140	6	62	Oh	---	---	---	---	P	---	---	Oh	L. Logan (1926)	
22L1	F. Jackson	Spainhower & Sons	Dr	9-28-54	620	82	7	38	Oh	---	---	---	---	P	---	---	Oh	L. Logan (1926)	

Dd 20 ft pumping at 372 gpm; screen 10 ft, 12 in dia, No. 8 shutter

Dd 53 ft pumping at 10 gpm

Dd 13 ft pumping at 15 gpm

Observation well Clay 1, La

well backfilled to 251 ft

Table 1.--Records of wells, Clay County, Indiana--Continued

Well No.	Owner	Driller	Date completed	Altitude (feet)	Type of well	Depth of well below land-surface (feet)	Diameter (inches)	Depth of casing (feet)	Finish	Water-bearing zone				Yield (gpm)	Use	Remarks
										Depth to top (feet)	Thickness (feet)	Material	Geologic No.			
10/6W-28A1	W. Garlot	X. L. Biehard	11-8-54	615	Dr	228	6	83	Oh	200	29	Ss	P	C	55	L, A
29C1	C. Garrard	Spainhower & Sons		590	Dr	124	6	61	Dh	114	10	SS	P	C		L, A
29K1	E. Boyer	X. L. Biehard		570	Dr	52	8	44	Oh	227	27	Ss	P(?)		35	La; drilled into old mine workings
29E2	Clay City High School	Ringo & Son		605	Dr	18	42	18	Oh				P1		2	Observation well Clay J
29M1	K. Owan			610	Dr	86	6	63	Oh	83.3	5	Ss	P	C	47	L, A
29N1	P. Klingor	M. L. Biehard		605	Dr	130	6	90	Oh	50	5	Ss	P	C	0	L, A
29N2	T. Ron			605	Dr	77	6	23	Oh				P			L, A
29N3	R. Miller	Ringo & Son	4-47	600	Dr	78	6	22	Oh				P			L, A
29P1	G. Krauchi	V. Hayden	1946	600	Dr	255	8	95	Oh	82	3	S,G	P1		50	L, well backfilled to 93 ft
30A1	G. Ren	X. L. Biehard		575	Dr	90	8	93	P	83	2	S,G	P1		35	La; observation well Clay 4,
30A2				575	Dr	85	8	65	Oh	83.5	2.5	S,G	P		15	La; observation well Clay 4,
30B1	Town of Clay City		1948	570	Dr	86	10	20	Oh				P		20	La; 86 ft balling at 20 gpm; K
30B2				576	Dr		8	86					P			L, A
30B3	R. E. Peaty	Campbell Bros.	1951(?)	570	Dr	126	6	39	Oh	72	10	Sd-sh	P			L, A
30D1	G. Pfister			575	Dr	82	6	80	Oh	123	23	Sd-sh	P			L, A
30D2	J. Fritz			560	Dr	240	6	80	Oh	80	2	G	P1			L, (partial), A
30E1	John Gilman Lumber Co.	V. Hayden	1946	580	Dr	82	6	82	Oh				P1			L, A
30E2	O. Schlogel	Campbell Bros.		580	Dr	90			Oh				P			L, A
30H1	C. Weber	C. Ringo	1919	595	Dr	47			Oh				P			L, A
30J1	Marathon Service Sta.	H. R. Knox	12-9-47	580	Dr	108	8	35	Oh	81	3	Sd-18	P		35	L, A
30J2	Assembly of God Church		5-48	590	Dr	111	7	56	Oh	87	5	Sd-18	P			L
30J3	H. Walters	Campbell Bros.		605	Dr	80	6	50	Oh	144	9	C,Sh	P			L, A
31C1	H. VanHorn	H. Ellis	10-8-53	640	Dr	190	6		Oh	175	3.5	C	P			L, A
31F1	C. Gallespio	Campbell Bros.		610	Dr	251	6	40	Oh	60.5	10.5	Sh	P			L, A (partial), A
31K1	H. Cromwell		1951(?)	670	Dr	100	8	38	Oh				P			L, A
31L1	G. Wilkes and others	M. O. Schrader	1-24-57	650	Dr	237	6	80	Oh	153	6	Sh	P			L, A
31P1	F. L. Biehard		635	580	Dr	162	6	98	Oh	171	14	Ss	P			L, A
32K1	J. Hyatt	Spainhower & Sons	9-19-50	610	Dr	200	6	98	Oh				P			L, A
33N1	L. Garlitz		590	600	Dr	86			Oh				P			L, Ashley (1958)
33P1	Buzzard	Ringo & Son	11-51	530	Dr	71	1	29	S	25	2	S,G	P1			L, Ashley (1958)
10/7W-1D1	A. D. Loderwood			600	Dr	29							P			L, observation well Clay 4, 4 in dia screen, 6.5 ft, 4 in dia
1D2		Spainhower & Sons	12-16-57	550	Dr	142	6	116	Oh	131	8	S4	P			L, A
1J1	A. Reina	Ringo & Son	6-14-47	560	Dr	74	7	70	P	68	6	G	P1			L, A
2K1	J. Dennis	L. Adkins	10-12-40	545	Dr	68		88	Oh	68			P1			L, Hill 1; La
2L1			3-19-57	554	Dr	1,559							P			L, Hill 1; La
3A1	F. Dietz	Ringo & Son	7-11-42	570	Dr	125	6	64	Oh	120	5	Sh	P			L, A
3G1	L. L. Medesitt		5-27-57	584	Dr	1,623							P			L, A
3E1	J. McCullough	Spainhower & Sons	8-26-59	580	Dr	1,522	8	32	Oh	31	28	S4	P			L, A
3B1	R. Mendenbrock	Ringo & Son	12-56	575	Dr	86	6	50	Oh				P			L, A
5J1	J. Collins	L. Adkins	4-16-25	553	Dr	81	0	50	Oh				P			L, A
6D1	J. Ross		10-9-53	553	Dr	1,080							P			L, A
6A1	E. Seymore	L. Adkins	4-28-47	580	Dr	1,100	6	32	Oh	33	60	Ss	P			L, A
9D1	F. Gard		4-28-25	565	Dr	100	6	32	Oh	57	43	S4	P			L, A
9D2			6-7-58	571	Dr	2,807							P			L, A
11A1	H. Seymour	Ringo & Son	0-19	550	Dr	45	6	42	Oh	41	2	G	P1			L, A
12B1	J. Riddell		2-21-41	550	Dr	32	3	32	P	21	11	S,G	P1			L, A
12B2			12-9-53	550	Dr	100	6	100	Oh	65	16	S,G	P1			L, A
17Q1	G. Jackson	L. Adkins	7-15-17	565	Dr	85	8	68	Oh	22	29	Ss	P			L, A
30N1	A. Cooperider	Spainhower & Sons	8-14-54	575	Dr	210	8	68	Oh	129	47	S4-sh	P			L, A

Table 1.--Records of wells, Clay County, Indiana--Continued

Well No.	Owner	Driller	Date completed	Altitude (feet)	Type of well	Depth of well below land-surface (feet)	Diameter (inches)	Depth of casing (feet)	Fluid	Water-bearing zone				Water level (feet)	Yield (gpm)	Use	Remarks
										Depth to top (feet)	Thickness (feet)	Material	Geologic age				
11/6W-11D1	M. Crafton	Ringo & Son	6-12-50	635	Dr	83	6	44	Oh	85	4	Ss	P	15	1.5	L	
1101	C. Moon	do	7-29	625	Dr	93	6	42	Oh	87	6	Ss	P	52	20	L	Di 5 ft pumping at 20 gpm
11N1	C. Brown	L. Adkins	3-17-51	610	Dr	90	6	77	Oh	78	8	Ss	P			L	A
1361	J. Rubsly	do	4-2-51	585	Dr	173	6	39	Oh	100	10	Ss	P			L	A
14G1	C. Emsart	M. O. Schrader	10-21-57	620	Dr	245	6	31	Oh				M(?)		8	D	A
14Q1	H. Thomas	L. Adkins	2-7-56	390	Dr	100	6	65	P, Oh	28	8	Ss	P			L, A	
15D1	A. Hart	Spainhower & Sons	10-9-54	600	Dr	186	6	48	Oh	180	28	Ss	P	25	10	L, A	Ashley (1898)
16E1	G. Moss	do	600	600	Dr	70	6	11	Oh	49.3	1.5	Ss	P			L	
16N1	F. Rockhill	Campbell Bros.	1931(?)	680	Dr	42	6	55	Oh				P			L, A	
16N2	C. Futch	do	680	680	Dr	100	7	82	Oh	150	10	Ss	P	44	2	L, A	
17C1	R. Miller	Ringo & Son	10-15-50	610	Dr	100	6	60	Oh	80	14	Ss	P	42	3.5	L, A	
17C2	L. Miller	Spainhower & Sons	4-56	600	Dr	100	6	60	Oh	153	17	Ss	P			L, A	
17C3	M. Backfish	Campbell Bros.	10-11-57	600	Dr	170	6	47	Oh	90	10	Ss	P			L, A	well backfilled to 264 ft
17E1	R. W. Moss	C. Ringo	3-1-09	645	Dr	400	6	264	P				P			L, A	
17F1	R. Houk	Ringo & Son	10-9-50	650	Dr	120	6	63	Oh	87	11	Ss	P	46	4	L	
17N1	W. O. Tilley	C. Ringo	10-19-11	610	Dr	58	6	32	Oh	89	2	Ss	P	2.5		L	
18A1	H. Mann	L. Adkins	7-1-42	580	Dr	85	6	85	P	53	2	Ss	P			L	
18A2	Rockhill Gas Station	Ringo & Son	10-40	580	Dr	100	6	44	Oh	96	36	Ss	P	22	5	L, A	
18B1	C. W. Rapper	Campbell Bros.	9-8-59	585	Dr	132	6	53	Oh	92	36	Ss	P	20	11	L, A	
18N1	H. Mann	C. Ringo	1919	585	Dr	103	6	60	Oh	90	10	Ss	P			L, A	
18N1	F. Forstinger	M. O. Schrader	2-10-59	580	Dr	80	6	34	Oh	90	10	Ss	P			L, A	
20N1	L. A. Doad	C. Ringo	1911	595	Dr	94	6	47	Oh	90.5	13.5	Ss	P			L	water level 36.7 ft, 4-2-58
20P1	R. Nicason	do	8-11	590	Dr	88	6	26	Oh	87	1	S	Pl	34		L, A	
21D1	T. Rockhill	Ringo & Son	5-27-40	680	Dr	134	6	72	Oh	223	14	Ss	M(?)	48	3	L	
21E1	F. Dietz	do	6-49	600	Dr	239	6	61	P	30	2	S, G	Pl	55	6	Do	
21P1	do	do	7-23-42	575	Dr	61	6	62	S	53	7	S, G	Pl	12	12	S	Di 30 ft pumping at 25 gpm; screen, 6 ft of 8 in dia
21P2	do	do	7-53	575	Dr	62	6	62	S				P			L	
21P3	do	do	3-57	575	Dr	70	6	70	S				P			L	
22H1	G. Moon	do	6-49	645	Dr	71	6	18	Oh	84	1	S, G	Pl	11	8	L, A	
22H1	G. McKinney	Spainhower & Sons	7-5	600	Dr	105	6	63	Oh	94	11	Sd-sh	P	42	10	L, A	P. Lucht 1; L
23N1	J. Fisher	Edison & Gwaltney	4-6-53	624	Dr	1,496	6						P			L, A	
23P1	do	Campbell Bros.	600	600	Dr	71	6	44	Oh	97	6	Ss	M(?)			L, A	
24H1	J. Rumbly	Ringo & Son	7-54	610	Dr	105	6	44	Oh	127.5	18	Ss	M(?)			L, A	
26B1	Clay County Home	do	7-14	650	Dr	148	6	10	Oh				P(?)			L, A	
26B2	do	do	7-10	650	Dr	108	6	22	Oh	35	1	C	P	7	5	L, A	
26B3	do	do	7-14	580	Dr	99	6	35	Oh				P			L, A	
27D1	P. Waldbaur	Ringo & Son	10-3-54	580	Dr	140	6	46	Oh	65	35	Ss	P			L, A	well dry, 4-2-58
27G1	K. Fatch	M. O. Schrader	10-10-56	585	Dr	105	6	60	P				P			L, A	
28D1	F. Dietz	L. Adkins	3-28-41	575	Dr	105	6	105	P				P			L, A	
29A1	do	Ringo & Son	5-22-54	570	Dr	237	6	65	Oh	139	10	Ss	P	15	3	L	
29A1	do	do	5-22-54	570	Dr	163	6	55	Oh	77	5	Ss	P	12	3.5	L	
29M1	T. Collins	Spainhower & Sons	570	570	Dr	135	6	108	Oh	88	7	Ss	P			L, A	
31C1	N. Campbell	Campbell Bros.	600	600	Dr	133	6	18	Oh	115	20	Ss	P			L, A	Di 4 ft pumping at 10 gpm; screen, 7 ft of 5 in dia
31P1	S. Quackenbush	Ringo & Son	9-52	600	Dr	85	6	85	S	76	10	S, G	Pl	31	10	L, A	Di 47 ft pumping at 10 gpm
32B1	J. Fischer	do	12-54	560	Dr	121	6	100	Oh	107	4	S, G	Pl	13	10	L, A	
32D1	R. Proderman	L. Adkins	3-8-42	575	Dr	110	6	116	Oh	90	26	S	Pl			L, A	
32D2	do	Spainhower & Sons	6-55	575	Dr	125	6	106	Oh	111	14	Ss	P	6		L, A	
32E1	W. Brown	C. Ringo	6-17-07	583	Dr	436	7	128	Oh				M(?)			L	

11/6W-35F1	H. Youngblood	M. O. Schröder	3-16-53	590	Dr	90	6	44	Oh	63	27	5s	P	C	17	D.S	L, A
35J1	H. R. Rhodes	Ringo & Son	10-22-50	560	Dr	82	6	17	Oh	46	16	Ss	P	C	17	D.S	L, A
38N1	S. Thomas	do	8-27-57	800	Dr	95	6	18	Oh	15	59	Ss	P	C	39	D.S	L, A
36J1	J. Lautenschlager	M. O. Schröder	2-15-54	805	Dr	118	6	21	Oh	119	10	Ss	P	C	2.5	D.S	L, A
11/7W-		do	11-29-54	600	Dr	130	6	70	Oh	191	20	Ss	P	C	6	D.S	L, A
3D1	J. Edor	L. Adkins	8-12-46	620	Dr	280	7	115	Oh	250	30	Ss	P	C	48	D.S	L, A
3D1	R. Scott	do	3-22-47	660	Dr	170	7	115	Oh	100	10	Sn	P	C	17	D.S	L, A
4N1	J. Harr	C. Ringo	2-27-15	640	Dr	103	8	35	Oh	110	8	Sn	P	C	48	D.S	L, A
5K1	R. Modosilt	L. Adkins	4-15-41	640	Dr	110	8	35	Oh	133	4	Sn	P	C	17	D.S	L, A
5Q1	R. Miller	Ringo & Son	3-55	850	Dr	133	4	55	Oh	132	5	Sn	P	C	20	D.S	L, A
7R1	R. Morris	C. Ringo	1934	810	Dr	132	5	40	Oh	20	7	Sn	P	C	20	D.S	L, A
7L1	H. A. Warkins	L. Schell		630	Dr	55	10	20	P	170	25	Ss	P	C	17	D.S	L, A
7N1	O. Tucker	C. Ringo		815	Dr	170	10	30	Oh	145	25	Ss	P	C	17	D.S	L, A
7Q1	G. Rusell	do		610	Dr	30			Oh	13	14	Ss	P	C	17	D.S	L, A
8D1	H. Miller	L. Adkins	9-30-47	630	Dr	114			Oh	18	2	G	P	C	17	D.S	L, A
8B2	do	do	9-30-47	830	Dr	32	8	32	P	1,400			P	C	17	D.S	L, A
8P1	I. Besore	do	8-6-58	612	Dr	1,400	6	105	Oh	56	7	C.Sk	P	C	17	D.S	L, A
8J1	F. Mack	L. Adkins	9-9-48	830	Dr	66	6	80	P	74	5	S.G	P	C	17	D.S	L, A
10C1	L. Miller	do	4-3-47	640	Dr	66	6	80	P	107	23	Sb	P	C	17	D.S	L, A
11A1	A. Tiofel	do	1844	600	Dr	100			Oh	58	10	S	P	C	17	D.S	L, A
11Q1	L. Coble	Ringo & Son	10-22-54	835	Dr	79	6	79	Oh	179	11	La	P	C	17	D.S	L, A
11Q1	L. Coble	do	3-21-41	800	Dr	130	6	45	Oh	94	4	S.G	P	C	17	D.S	L, A
12C1	N. Hillman	L. Adkins	4-30	590	Dr	130	6	109	Oh	146	2	Sb	P	C	17	D.S	L, A
12C1	C. Dewart	L. Adkins	3-17-41	585	Dr	70	8	60	Oh	82	10	G.S	P	C	17	D.S	L, A
12N1	R. Harrison	do	1934	380	Dr	94	6	54	Oh	75	10	S	P	C	17	D.S	L, A
12N1	T. Collins	Ringo & Son	8-21-59	625	Dr	150	7	119	Oh	100	2	F.C	P	C	17	D.S	L, A
12N1	T. Collins	do	7-15-42	610	Dr	98	6	98	P	227	54	Ss	P	C	17	D.S	L, A
15Q1	Y. Barrett	L. Adkins	11-17-08	830	Dr	148	6	106	Oh	125	8	Ss	P	C	17	D.S	L, A
16C1	C. Rucas	C. Ringo	3-17-44	830	Dr	82	6	80	P	100	2	F.C	P	C	17	D.S	L, A
16G1	R. E. Ell	L. Adkins	6-25	820	Dr	80	6	80	Oh	100	2	F.C	P	C	17	D.S	L, A
16G2	do	do	6-25	820	Dr	243			Oh	100	2	F.C	P	C	17	D.S	L, A
16K1	C. and T. Datta	do	5-8-25	838	Dr	1,632			Oh	100	2	F.C	P	C	17	D.S	L, A
17C1	G. and T. Datta	do	7-18-58	838	Dr	260	12	37	Oh	68	34	Ss	P	C	17	D.S	L, A
17N1	E. Bailey	Ringo & Son	10-9-54	835	Dr	195	6	74	Oh	82	10	S	P	C	17	D.S	L, A
17P1	H. Miller	Spainhower & Sons	3-18-55	835	Dr	111	6	74	Oh	227	54	Ss	P	C	17	D.S	L, A
17P2	W. Utter	L. Adkins	1-6-48	830	Dr	111	6	74	Oh	125	8	Ss	P	C	17	D.S	L, A
17Q1	M. Hall	Spainhower & Sons	1938	835	Dr	115	7	64	Oh	118	13	Ss	P	C	17	D.S	L, A
17Q2	E. A. Doud	do	6-34	835	Dr	281	8	36	Oh	121	13	Ss	P	C	17	D.S	L, A
17R1	do	C. Ringo	6-34	835	Dr	772			Oh	125	8	Ss	P	C	17	D.S	L, A
18K1	Z. L. Kontor	do	7-18-58	578	Dr	1,674			Oh	101	24	Ss	P	C	17	D.S	L, A
18K1	J. Kogan and P. Weaver	do	6-28-57	820	Dr	1,674			Oh	88	42	Ss	P	C	17	D.S	L, A
18N1	W. Fell	Ringo & Son	8-2-58	820	Dr	1,65	6	52	Oh	125	8	Ss	P	C	17	D.S	L, A
19Q1	A. Koester	L. Adkins		605	Dr	138	6	28	Oh	102	30	Ss	P	C	17	D.S	L, A
19D1	R. McIntosh	do		820	Dr	126	6	28	Oh	130	30	Ss	P	C	17	D.S	L, A
19D2	do	do		820	Dr	180	6	85	Oh	87	8	Ss	P	C	17	D.S	L, A
19R1	C. Shaw	Ringo & Son	12-18-46	590	Dr	104	7	85	Oh	110	11	Ss	P	C	17	D.S	L, A
20E1	W. Fell	do	2-15-57	590	Dr	142	6	52	Oh	88	22	Ss	P	C	17	D.S	L, A
20G1	G. Spears	do	6-54	610	Dr	186	6	87	Oh	91	20	Ss	P	C	17	D.S	L, A
20H1	Bradwell	Spainhower & Sons	5-27-57	630	Dr	142	7	87	Oh	107	31	Ss	P	C	17	D.S	L, A
20H2	R. Fredman	do	11-58	630	Dr	90	6	60	Oh	104	7	Ss	P	C	17	D.S	L, A
20H3	C. Bullerlick	do	2-12-54	620	Dr	128	6	50	Oh	116	13	Ss	P	C	17	D.S	L, A
20H4	C. Bullerlick	do	2-15-54	635	Dr	154	6	63	Oh	107	31	Ss	P	C	17	D.S	L, A
20H5	Cory Methodist Church	Spainhower & Sons	3-56	635	Dr	135	7	72	Oh	118	13	Ss	P	C	17	D.S	L, A
20H5	P. Morgan	do	5-58	630	Dr	135	6	82	Oh	121	13	Ss	P	C	17	D.S	L, A
20H6	G. Clark	do	8-22-59	630	Dr	136	6	82	Oh	101	24	Ss	P	C	17	D.S	L, A
20H7	E. Modosilt	do	8-30-58	630	Dr	125	7	87	Oh	88	42	Ss	P	C	17	D.S	L, A
20J1	F. Jackson	H. L. Bilsard		630	Dr	138	6	62	Oh	125	11	Ss	P	C	17	D.S	L, A
20J2	C. Anosite	Spainhower & Sons	8-24-59	630	Dr	138	6	86	Oh	45	4	Ss	P	C	17	D.S	L, A
20K1	Cory High School	L. Adkins	6-7-41	630	Dr	88	8	21	P	86	37	S.G	P	C	17	D.S	L, A
20K2	do	do	1-4-54	630	Dr	300	8	88	Oh, P	45	4	Ss	P	C	17	D.S	L, A
21A1	P. R. Stages	L. Adkins	8-13-48	820	Dr	85	6	61	Oh	145	20	Ss	P	C	17	D.S	L, A
21B1	E. Anust	do	8-1-40	625	Dr	68	6	61	Oh	75	37	Ss	P	C	17	D.S	L, A
21D1	E. Fagg	Spainhower & Sons	5-2-44	630	Dr	178	7	178	P	75	10	Ss	P	C	17	D.S	L, A
21E1	E. Nees	do	11-17-54	630	Dr	102	6	58	Oh	75	17	S.G	P	C	17	D.S	L, A
21E1	C. Jeffers	L. Adkins	8-27-45	620	Dr	83	6	92	S	90	9	C	P	C	17	D.S	L, A
21E1	H. Ell	do	7-12-51	620	Dr	106	6	108	P	87	19	Ss	P	C	17	D.S	L, A
21E1	G. Jefferson	do	10-20-58	578	Dr	1,118	8	98	Oh	87	19	Ss	P	C	17	D.S	L, A
21E1	R. Krueger	Ringo & Son	9-10-59	612	Dr	1,118	8	98	Oh	87	19	Ss	P	C	17	D.S	L, A
21M2	J. O. Neffott	do	1-10-55	612	Dr	1,515			Oh	93	10	Ss	P	C	17	D.S	L, A
22N1	C. E. Leng	C. Ringo	1-10-55	610	Dr	1,108			Oh	88	3	C	P	C	17	D.S	L, A
23G1	L. Hardin	Ringo & Son	7-52	580	Dr	92	5	68	Oh	88	3	C	P	C	17	D.S	L, A

Dr 76 ft pumping at 5 gpm

A; water sample from lower aquifer; well deepened
A; screen 4 ft of 8 in dia
Dr 12 ft pumping at 20 gpm
S; Major 2; La
C; Harr 1; La
L; A; Dd 10 ft pumping at 30 gpm

Table 1.--Records of wells, Clay County, Indiana--Continued

Well No.	Owner	Driller	Date completed	Altitude (feet)	Type of well	Depth of well below land surface (feet)	Diameter (inches)	Depth of casing (feet)	Finish	Water-bearing zone						Remarks	
										Depth to top (feet)	Thickness (feet)	Material	Geologic age	Ground-water occurrence	Water level (feet)		Yield (gpm)
11/7W-2562	G. Perringer	Ringo & Son	8-56	580	Dr	92	6	68	Oh	86	3	C	C	16	0	D	La; Dd 34 ft pumping at 9 gpm
25H1	United Brethren Church	do	6-50	580	Dr	80	6	57	Oh	83	3	C	C	14	10	P	L; Dd 62 ft pumping at 20 gpm
25J1	Saline City Fair Grounds	do	5-27-37	575	Dr	88	6	73	Oh	82	2	C	C	8	20	P	L
26A1	C. B. Nicolson	Spainhower & Sons	4-56	505	Dr	110	7	107	Oh					20	10	N	L
26D1	C. Hart	L. Adkins	7-21-53	613	Dr	1,547	6	87	Oh	143	2	C	P			Ok	C. Hart 2; L
26S1	C. Dieks	Ringo & Son	7-11-54	590	Dr	145	6	6	Oh	51	3	C	P	12		D,S	L, A
26P1	A. Jeffers	L. Adkins	8-7-54	570	Dr	54	6	54	Oh	47	7	G	P	12		D	L, A
26P2	do	do	8-8-54	570	Dr	54	6	54	Oh	47	7	G	P	12		D	L, A
26R1	C. B. Nicolson	do	8-25-51	560	Dr	65	4	48	P					30	5	S	L
27A1	E. A. Doud	C. Ringo	1-22	630	Dr	114	6	35	Oh					30	5	S	L
27A2	C. Hart	L. Adkins	7-10-52	630	Dr	225	6	64	Oh	72	5	C, Sh	P	7	10	D, S	L, A
27C1	J. W. Hastings	Ringo & Son	5-19	625	Dr	80	6	29	Oh	77	5	S, G	P	54	10	D, S	L, A
27D1	H. Palmer	do	7-9-54	620	Dr	82	6	82	Oh	45	25	S4	P	25	2	D, S	L, A
28Q1	E. Shaver	Spainhower & Sons	12-58	620	Dr	70	7	39	Oh	45	25	S4	P	25	2	D, S	L, A
28P1	C. L. Robertson	Ringo & Son	9-1-54	610	Dr	201	6	89	Oh	95	17	S4	P	40	3	D	L, A
29H1	M. Warkon	Spainhower & Sons	9-2-59	620	Dr	113	6	93	Oh							Ok	Logan (1928); L
20K1	J. Rocco	do	2-18-54	570	Dr	2,855	6	61	Oh	61	34	S4	P	28	7.5	D, S	L, A
22A1	D. Morgan	H. Willis	7-25-40	600	Dr	105	6	51	Oh	96	8	S4	P			D, S	L, A
22H1	E. McCullough	L. Adkins	12-21-58	583	Dr	48	8	41	Oh							D, S	L, A
23D1	R. W. Mowmitt	T. & H. Corp.	9-18-57	592	Dr	1,670			Oh							Ok	K. Kuhn and D. Jones 1; S
23M1	E. and F. McCullough	do	12-22-56	613	Dr	1,630			Oh							Ok	T. & H. Corp. 1; L
24K1	K. Spack	L. Adkins	8-3-54	550	Dr	235	0	90	Oh	32	2	S, G	P			Ok	G. Rector 1; L
25Q1	Zion Church	do	7-28-43	550	Dr	32	6	32	P	62	5	S, G	P			D, S	L, A
25E1	E. McCullough	do	8-27-41	590	Dr	97	6	50	P	105	16	S4	P			D, S	L, A
25M1	R. Mowmitt	do	2-18-54	570	Dr	119	6	30	Oh	108	7	S4	P			D, S	L, A
25M2	E. Mowmitt	do	6-5-47	555	Dr	67	7	30	Oh	63	1	C	P			Ok	W. A. Sago and others 1; L
25M2	C. Shary	Ringo & Son	9-15-58	634	Dr	1,488			Oh	37	4	L4	M			D, S	L, A
26B1	C. and Z. Donahio	Ringo & Son	3-5-55	560	Dr	41	6	51	Oh							D, S	L, A
12/5W-19C1	W. Rodows	C. Ringo	4-19-22	670	Dr	107	6	70	Oh							D, S	L, A
20N1	L. Kidd	Ringo & Son	8-22-58	640	Dr	85	6	102	P	82	7	S, G	P	43	10	D, S	L, A; Dd 17 ft pumping 10 gpm
21L1	Kaitan	do	1915	635	Dr	70	6	70	Oh	70	15	S4	P	11	40	D	L, A
28L1	R. Sonnenfeld	do	9-54	580	Dr	55	6	40	Oh	40	15	S4	P	8	5	D	L, A
28P1	F. Ballardick	K. Stahl	9-54	670	Dr	80	6	21	Oh	22	27	S4	P	8	5	D	L, A
30J1	D. Stieglor	Ringo & Son	9-10-59	620	Dr	135	6	104	Oh	103	31	S4	P	52	20	D, S	L, A; Dd 10 ft after 4 hr pumping at 20 gpm
31F1	L. Plunkett	A. D. Schrader	4-40	670	Dr	75	6	37	Oh							P	L, A
32J1	A. Meyer	do	8-40	665	Dr	162	6	162	Oh	162	6	G	P	21	17	P	L, A
33R1	Girl Scout Camp	Ringo & Son	8-40	680	Dr	115	6	115	Oh	95	20	S, G	P	20	6	D	L, A
34B1	J. Kaitman	Ringo & Son	8-40	680	Dr	107	6	107	Oh	107	20	S, G	P	35	10	D	L, A; Dd 20 ft pumping at 10 gpm
34E2	F. Steiner	W. Stull	6-45	645	Dr	85	6	85	Oh							D	L, A
34D3	L. Beary	do	7-10	690	Dr	70	6	70	Oh	80	1	S4	P			D	L, A
34C1	D. Mustard	do	7-10	690	Dr	200	6	18	Oh	177	23	S4	P	114	3.5	P	L, A
34F1	F. Spallbrink	A. O. Schrader	7-11-59	700	Dr	50	6	38	Oh	30	1	S, G	P	30	3.5	D	L, A
34P1	Zion Church of Christ	Ringo & Son	4-20-48	610	Dr	166	6	6	Oh	43	5	S4	P	24	3	D	L, A
12/6W-1Q1	W. E. Bornhoebr	do	12-1-46	645	Dr	138	6	50	Oh	125	22	S4	P	21	8	D	L, A
2N1	G. Rabb	do	12-11-50	645	Dr	149	6	100	Oh	127	20	S4	P	21	7	D	L, A
38I	F. A. Price	Ringo & Son	8-31-53	670	Dr	150	6	81	Oh	85	31	S4	P	20	2	S	L, A
5D1	L. Duregger	do	12-15-58	655	Dr	133	6	88	Oh	122	10	S4	P	20	2	S	L, A
5Q1	G. K. Ball	do	2-12-48	670	Dr	205	6	108	Oh	170	95	S4	P	66	2.5	D	L, A
5R1	C. E. Rollings	do	3-10-55	660	Dr	152	6	95	Oh	142	28	S4	P	111	10	L, A	L, A; Dd 24 ft pumping at 10 gpm
6A1	L. Duregger	Ringo & Son	2-27-50	655	Dr	170	6	75	Oh							D, S	L, A
7D1	J. B. Timberman	do	5-26-50	655	Dr	170	6	75	Oh							D, S	L, A
7F1	S. Kivchnor	do			Dr				Oh								

Table 1.--Records of wells, Clay County, Indiana--Continued

Well No.	Owner	Driller	Date completed	Altitude (feet)	Type of well	Depth of well below land-surface (feet)	Diameter (inches)	Depth of casing (feet)	Finish	Water-bearing zone					Remarks	
										Depth to top (feet)	Thickness (feet)	Material	Geologic age	Ground-water occurrence		Water level (feet)
12/79-1R2	P. Butt	M. O. Schrader	8-22-57	650	Dr	59	6	26	Oh	59	---	C	P	---	---	Ls
2E1	W. Reynolds	do	10-7-53	630	Dr	210	6	30	Oh	---	---	---	P	---	---	L
2E2	R. Koester	do	7-17-53	620	Dr	57	6	40	Oh	---	---	---	P	---	---	Ls
2E3	A. Bell	Crappell Bros.	9-16-47	630	Dr	92	6	55	Oh	---	---	---	P	---	---	L
2E4	Wabash Valley Trucking Co.	Ringo & Son	10-22-53	630	Dr	134	6	70	Oh	---	---	---	P	---	---	L, A
2F2	C. A. Keator, Jr.	M. O. Schrader	7-2-54	630	Dr	83	6	43	Oh	---	---	---	P	---	---	Ls
2G1	E. R. Sheese	do	3-1-56	630	Dr	105	6	52	Oh	---	---	---	P	---	---	L
2G2	C. Cunnahan	do	8-18-53	630	Dr	92	6	45	Oh	---	---	---	P	---	---	Ls
2G3	C. H. Lillyblade	do	3-23-53	630	Dr	92	6	45	Oh	---	---	---	P	---	---	Ls; well dry 8-7-58
2G4	D. Stough	do	1-16-58	630	Dr	94	6	35	Oh	---	---	---	P	---	---	Ls, A
2G5	J. Timberman	do	8-16	633	Dr	194	6	61	Oh	---	---	---	P	---	---	Ls, A
3A1	J. C. Van Ness	Ringo & Son	3-5-56	630	Dr	22	8	22	Oh	---	---	---	P	---	---	L, A; Del 40 ft. pumping at 20 rpm; rpm; supplios 4 houses
3A2	H. Gilbert	D. Chavia	9-17-52	640	Dr	250	6	113	Oh	---	---	---	P	---	---	L, A
3A3	V. Wobster	M. O. Schrader	9-17-52	635	Dr	232	6	119	Oh	---	---	---	P	---	---	L, A
3F1	C. F. Denkins	do	2-55	620	Dr	100	6	27	Oh	---	---	---	P	---	---	L, A
3J1	Cassiana Dairy Farm	Ringo & Son	11-2-55	610	Dr	264	6	147	Oh	---	---	---	P	---	---	L, A; Del 67 ft. pumping at 20 rpm
3L2	Y. Trout	do	5-53	615	Dr	193	6	33	Oh	---	---	---	P	---	---	L, A; Del 110 ft. pumping 15 rpm
3M1	J. Sinek	do	10-13-56	620	Dr	52	6	52	Oh	---	---	---	P	---	---	L, A; Del 6 ft. pumping at 15 rpm
3M2	D. French	do	5-56	620	Dr	46	6	48	Oh	---	---	---	P	---	---	Ls
3M3	I. Mead	do	10-18-56	620	Dr	50	6	50	S	---	---	---	P	---	---	L, A; Del 8 ft. pumping at 20 rpm; screen, 8 ft. of 6 in. dia. with 1/8 -inch openings
3M4	R. Schrazoyer	do	10-18-56	620	Dr	50	6	50	S	---	---	---	P	---	---	L, A; Del 30 ft. after 1 hr. bailing at 15 rpm
3M5	M. Modest	do	4-56	620	Dr	136	6	40	Oh	---	---	---	P	---	---	L
3M6	E. E. Snyder	L. Adkins	9-20-47	620	Dr	70	4	70	P	---	---	---	P	---	---	L
3M7	J. Dirger	Ringo & Son	1-55	620	Dr	151	6	37	Oh	---	---	---	P	---	---	Ls
3M8	F. Tiede	do	9-53	620	Dr	98	6	50	Oh	---	---	---	P	---	---	Ls
3M9	J. Ringo	do	4-52	625	Dr	30	6	30	P	---	---	---	P	---	---	Ls
3M10	J. Watts	do	8-52	625	Dr	90	6	45	Oh	---	---	---	P	---	---	Ls
3M11	V. Howard	do	7-16-53	625	Dr	40	6	40	Oh	---	---	---	P	---	---	Ls
3M12	L. Hodge	do	9-24-59	625	Dr	46	6	46	S	---	---	---	P	---	---	Ls
3M13	R. Tallman	do	10-27-59	625	Dr	62	6	41	Oh	---	---	---	P	---	---	L, A; Del 64 ft. after 2 hr. bailing at 15 rpm
3M14	E. Snyder	do	10-27-59	620	Dr	285	6	60	Oh	---	---	---	P	---	---	L, A
3N1	H. Houser	do	5-53	620	Dr	43	6	43	Oh	---	---	---	P	---	---	L
3N2	K. Brown	do	3-28-51	615	Dr	37	6	37	P	---	---	---	P	---	---	L
3N3	do	M. O. Schrader	6-50	620	Dr	125	6	43	Oh	---	---	---	P	---	---	L, A
3R1	H. J. Pierce	P. Schrader	6-50	620	Dr	156	6	6	Oh	---	---	---	P	---	---	L, A
4J1	E. Winklopleck	Ringo & Son	9-18-45	625	Dr	251	6	50	Oh	---	---	---	P	---	---	Well deepened
4J2	F. C. Kennedy	L. Adkins	9-15-45	635	Dr	50	6	50	P	---	---	---	P	---	---	Ls
4J3	E. Winklopleck	Ringo & Son	10-21-50	625	Dr	51	6	51	P	---	---	---	P	---	---	Ls
4J4	J. Krider	L. Adkins	6-14-45	635	Dr	52	6	43	Oh	---	---	---	P	---	---	L, A; Del 2 ft. pumping at 15 rpm
4J5	R. Faller	Ringo & Son	7-51	620	Dr	51	6	51	Oh	---	---	---	P	---	---	L, A
4J6	R. French	do	4-10-56	625	Dr	49	6	48	Oh	---	---	---	P	---	---	L, A
4J7	S. McBride	do	10-51	615	Dr	37	6	37	P	---	---	---	P	---	---	L, A
4K1	A. Powers	do	3-50	615	Dr	34	6	34	Oh	---	---	---	P	---	---	L, A; Del 5 ft. pumping at 10 rpm
4K2	K. Drees	do	3-51	615	Dr	30	6	30	P	---	---	---	P	---	---	L, A
4L1	J. Lorenz	do	9-30-59	610	Dr	128	6	43	Oh	---	---	---	P	---	---	L
4M1	M. E. Nailiff	do	7-20-59	605	Dr	136	6	103	Oh	---	---	---	P	---	---	L, A
4Q1	Indiana State Highway Department	L. Adkins	2-49	610	Dr	250	6	---	Oh	---	---	---	P	---	---	L, A
4Q2	J. W. Welch	M. O. Schrader	4-10-56	590	Dr	282	8	26	Oh	---	---	---	P	---	---	Ls (partial), A
4Q3	R. Pinson	L. Adkins	4-14-47	600	Dr	40	6	40	P	---	---	---	P	---	---	L, A

12/79	404	S. Ripplio	10-30-57	600	Dr	292	6	135	Oh	205	15	Sg	P	C	73	J	D	L	Notes
404	404	Ringo & Son	8-14-48	605	Dr	135	6	72	Oh	32	5	S.G	P	C	23	20	D	La	L, A; Dd 6 ft pumping at 20 gpm
405	405	do	8-55	615	Dr	50	4	50	P				P	C			D	La	L, A; cement plug set in bottom 11 ft
406	406	do	9-53	605	Dr	77	6	66	P				P	C			D	La	L, A; Dd 65 ft after 2 hr balling at 5 gpm
407	407	do	2-15-80	605	Dr	73	6	42	Oh	69	1	C	P	C	5	7	D	La	Well deepened; Dd 80 ft pumping at 3 gpm
408	408	Campbell Bros. Ringo & Son	11-20-58	610	Dr	86	4	51	Oh	70	16	Ss	P	C	28	2	D	La	L, A; Dd 10 ft pumping at 10 gpm
501	501	L. Lynch	5-21-57	800	Dr	54	6	54	Oh	29	4	S.G	P	C	24	17	P	La	L, A; Dd 2 ft pumping at 25 gpm
501	501	C. T. Swinger	4-51	635	Dr	34	6	54	Oh	50	13	S.G	P	C	24	10	D	La	L, A; Dd 5 ft pumping at 20 gpm
501	501	R. Chuasano	1-50	620	Dr	57	6	54	P	45	12	S.G	P	C	24	25	D	La	L, A; screen 6 ft of 6 in dia
502	502	E. Maham	5-52	625	Dr	54	8	54	P	35	19	S.G	P	C	28	20	D	La	L, A; Dd 10 ft pumping at 10 gpm
601	601	F. Rapson	5-53	580	Dr	35	6	107	S	98	9	S.G	P	C	57	17	D	La	L, A; Dd 10 ft pumping at 10 gpm
601	601	C. Burges	11-54	580	Dr	107	6	107	S	98	9	S.G	P	C	57	17	D	La	L, A; Dd 10 ft pumping at 10 gpm
601	601	J. D. Wilson	11-54	590	Dr	95	6	83	P	45	6	C	P	C	22	15	D	La	L, A; Dd 10 ft pumping at 10 gpm
601	601	F. H. H. Hoff	7-58	575	Dr	63	6	83	P	45	6	C	P	C	22	15	D	La	L, A; Dd 10 ft pumping at 10 gpm
601	601	D. Wadsworth	6-55	575	Dr	41	6	83	P	45	6	C	P	C	22	15	D	La	L, A; Dd 10 ft pumping at 10 gpm
601	601	L. Adkins	3-2-46	595	Dr	100	6	89	Oh	75	23	S.G	P	C	38	20	D	La	L, A; Dd 10 ft pumping at 10 gpm
601	601	Ringo & Son	11-54	595	Dr	89	6	89	Oh	80	17	S.G	P	C	38	20	D	La	L, A; Dd 10 ft pumping at 10 gpm
601	601	J. Kyo	6-3-57	610	Dr	70	6	70	P	52	3	S.G	P	C	38	20	D	La	L, A; Dd 10 ft pumping at 10 gpm
601	601	Isaac Walton Longue	10-12-44	590	Dr	295	8	88	Oh	245	50	Ss	P	C	34	10	D	La	L, A; Dd 10 ft pumping at 10 gpm
601	601	J. Kitchner	8-56	605	Dr	85	6	85	Oh	49	1	S.G	P	C			D	La	L, A; Dd 10 ft pumping at 10 gpm
702	702	W. Harris	4-53	605	Dr	135	6	27	Oh				P	C			D	La	L, A; Dd 10 ft pumping at 10 gpm
701	701	C. Wentzel	6-4-45	605	Dr	50	10	27	Oh				P	C			D	La	L, A; Dd 10 ft pumping at 10 gpm
702	702	B. Rausch	7-24-44	600	Dr	100	6	100	P				P	C			D	La	L, A; Dd 10 ft pumping at 10 gpm
702	702	W. R. Guire	3-52	610	Dr	167	6	99	Oh	90	7	S	P	C	55	3	D	La	L, A; Dd 10 ft pumping at 10 gpm
701	701	E. P. D. Erp	8-24-55	600	Dr	107	6	67	Oh	100	7	Ss	P	C	50	10	D	La	L, A; Dd 15 ft pumping at 10 gpm
701	701	H. Jones	4-26	610	Dr	89	6	67	Oh	77	8	C	P	C	50	10	D	La	L, A; Dd 15 ft pumping at 10 gpm
701	701	L. Baber	8-54	610	Dr	100	10	65	Oh	93	4	C	P	C	57	10	D	La	L, A; Dd 28 ft pumping at 10 gpm
701	701	H. Swearinger	1954	603	Dr	99	10	39	P	35	5	C	P	C			D	La	L, A; Dd 28 ft pumping at 10 gpm
701	701	do	5-52	605	Dr	92	6	80	Oh	82	7	C	P	C	47	4	D	La	L, A; Dd 21 ft pumping at 9 gpm
701	701	do	6-54	610	Dr	96	6	87	Oh	88	6	C	P	C	49	9	D	La	L, A; Dd 21 ft pumping at 9 gpm
701	701	do	8-20-56	605	Dr	88	6	83	Oh	68	2	S.G	P	C	35	10	D	La	L, A; Dd 21 ft pumping at 9 gpm
701	701	do	12-18	600	Dr	93	4	83	P	50	7	S	P	C	27	10	D	La	L, A; Dd 21 ft pumping at 9 gpm
701	701	do	12-18	605	Dr	70	6	80	Oh	68	2	S.G	P	C	30	10	D	La	L, A; Dd 21 ft pumping at 9 gpm
701	701	do	2-3-47	610	Dr	112	6	91	Oh	89	2	S.G	P	C	35	20	D	La	L, A; Dd 21 ft pumping at 9 gpm
701	701	do	12-51	610	Dr	157	6	112	Oh	120	12	Ss	P	C	38	20	D	La	L, A; Dd 21 ft pumping at 9 gpm
702	702	R. Burnett	11-24-39	600	Dr	44	6	44	P	34	5	S.G	P	C	20	8	D	La	L, A; Dd 15 ft after 2 hr balling at 8 gpm
703	703	do	9-58	600	Dr	85	8	78	P, Oh	70	5	S	P	C	29	10	D	La	L, A; Dd 20 ft pumping at 10 gpm
701	701	J. Bowles	8-13-55	600	Dr	308	6	220	Oh	255	51	Ss	P	C	74	11	D	La	L, A; Dd 28 ft pumping at 11 gpm
701	701	L. Morris	8-24-55	600	Dr	125	6	75	Oh				P	C			D	La	L, A; Dd 28 ft pumping at 11 gpm
701	701	G. Deal	12-57	600	Dr	92	6	51	Oh				P	C			D	La	L, A; Dd 28 ft pumping at 11 gpm
701	701	Indiana State Highway	10-19-40	610	Dr	210	6	51	Oh				P	C			D	La	L, A; Dd 28 ft pumping at 11 gpm
802	802	R. Parsons	1948	600	Dr	75	6	45	Oh	60	15	Ss	P	C	30	6	D	La	L, A; Dd 40 ft after 1 hr balling at 8 gpm
803	803	J. W. Hendrix	8-22-50	610	Dr	84	6	45	Oh	62	29	Ss	P	C	31	1.5	D	La	L, A; Dd 40 ft after 1 hr balling at 8 gpm
804	804	G. Ascher	3-52	605	Dr	94	7	43	Oh	63	31	Ss	P	C	29	2	D	La	L, A; Dd 40 ft after 1 hr balling at 8 gpm
802	802	D. Carpenter	4-18-59	800	Dr	102	6	70	P, Oh	25	2	S.G	P	C	9	7	D	La	L, A; Dd 20 ft pumping at 20 gpm
803	803	D. Carpenter	10-4-59	605	Dr	100	8	55	Oh	54	20	Ss	P	C	31	5	D	La	L, A; Dd 20 ft pumping at 20 gpm
804	804	L. Hugg	8-52	610	Dr	92	6	40	P, Oh	35	9	S.G	P	C	5	20	D	La	L, A; Dd 40 ft after 1 hr balling at 8 gpm
801	801	D. Carpenter	8-52	610	Dr	54	6	54	Oh	44	43	Ss	P	C	5	20	D	La	L, A; Dd 40 ft after 1 hr balling at 8 gpm
801	801	G. Carpenter	1958	675	Dr	128	6	35	Oh	51	12	Ss	P	C	26	15	S	La	L, A; Dd 30 ft pumping at 15 gpm
1101	1101	M. Tilley	8-10-40	670	Dr	272	6	10	Oh				P	C			D	La	L, A; Dd 12 ft pumping at 15 gpm
1201	1201	C. W. Bohler	8-11-53	660	Dr	64	6	38	Oh	220	52	Ss	P	C			D	La	L, A; Dd 12 ft pumping at 15 gpm
1202	1202	M. A. Kuep	1-4-53	660	Dr	165	6	38	Oh	38	11	Ss	P	C	55	1	D	La	L, A; Dd 12 ft pumping at 15 gpm
1203	1203	M. Nolte	6-11-53	660	Dr	182	6	38	Oh	108	7	Ss	P	C	55	1	D	La	L, A; Dd 12 ft pumping at 15 gpm
1204	1204	G. Tieberman	4-10-40	640	Dr	102	6	14	Oh				P	C			D	La	L, A; Dd 12 ft pumping at 15 gpm
1201	1201	J. A. Hughes	1948	640	Dr	182	6	14	Oh				P	C			D	La	L, A; Dd 12 ft pumping at 15 gpm
1201	1201	M. Francis	1948	640	Dr	182	6	14	Oh				P	C			D	La	L, A; Dd 12 ft pumping at 15 gpm
1202	1202	G. Shultz	1948	640	Dr	125	6	61	P	80	16	Ss	P	C	98	3.5	D	La	L, A; Dd 21 ft pumping at 6 gpm

Table 1.--Records of wells, Clay County, Indiana--Continued

Well No.	Owner	Driller	Date completed	Altitude (feet)	Type of well	Depth of well below land surface (feet)	Diameter (inches)	Depth of casing (feet)	Flats	Depth to top (feet)	Water-bearing zone				Water level (feet)	Yield (gpm)	Use	Remarks
											Thickness (feet)	Material	Geologic age	Ground-water occurrence				
13/6W-2742	L. Thomas	Ringo & Son	1-10-51	670	Dr	157	6	43	Oh	---	---	---	---	---	---	---	---	---
2743	do	M. O. Schrader	670	Dr	100	6	43	Oh	---	---	---	---	---	---	---	---	---	---
2744	do	Ringo & Son	675	Dr	112	6	48	Oh	---	---	---	---	---	---	---	---	---	---
2745	United Brethren Church	do	5-25-51	670	Dr	141	6	48	Oh	---	---	---	---	---	---	---	---	---
2801	P. Degan	do	1-48	700	Dr	110	6	61	Oh	---	---	---	---	---	---	---	---	---
2801	P. Degan	do	10-4-54	690	Dr	224	6	70	Oh	---	---	---	---	---	---	---	---	---
2801	J. Riddell	C. Ringo	9-34	695	Dr	53	6	45	Oh, Oh	---	---	---	---	---	---	---	---	---
2811	J. Colburn	Ringo & Son	2-48	675	Dr	204	6	58	Oh	---	---	---	---	---	---	---	---	---
2812	L. Butler	M. O. Schrader	5-17-51	675	Dr	65	6	58	Oh	---	---	---	---	---	---	---	---	---
2812	R. Stearnly	Ringo & Son	10-53	680	Dr	125	6	88	Oh	---	---	---	---	---	---	---	---	---
2812	L. Nyndham	do	11-53	680	Dr	90	0	90	Oh	---	---	---	---	---	---	---	---	---
2813	W. Keightley	do	1-3-54	675	Dr	70	6	70	Oh	---	---	---	---	---	---	---	---	---
2814	Sunset Saddle Club	do	12-4-41	685	Dr	102	0	82	Oh	---	---	---	---	---	---	---	---	---
2814	M. O. Schrader	do	11-18-55	685	Dr	220	0	90	Oh	---	---	---	---	---	---	---	---	---
2814	P. Cunningham	do	7-55	685	Dr	75	6	75	Oh	---	---	---	---	---	---	---	---	---
2814	D. V. Miller	Ringo & Son	11-49	670	Dr	155	6	77	Oh	---	---	---	---	---	---	---	---	---
2814	E. Fugate	do	8-4-50	680	Dr	118	6	70	Oh	---	---	---	---	---	---	---	---	---
2814	G. Green	do	8-14-55	670	Dr	55	6	52	Oh	---	---	---	---	---	---	---	---	---
2814	V. Abernathy	do	6-6-56	670	Dr	96	0	52	Oh	---	---	---	---	---	---	---	---	---
2814	F. Machis	do	1-29-54	710	Dr	165	6	16	Oh	---	---	---	---	---	---	---	---	---
2814	J. P. Colthrop	do	7-10-51	685	Dr	248	6	80	Oh	---	---	---	---	---	---	---	---	---
2814	S. L. Turner	do	6-5-56	680	Dr	52	0	48	Oh	---	---	---	---	---	---	---	---	---
2814	do	Campbell Bros.	6-5-56	680	Dr	40	8	38	Oh, P, Oh	---	---	---	---	---	---	---	---	---
2814	do	M. O. Schrader	6-5-56	680	Dr	85	6	56	Oh	---	---	---	---	---	---	---	---	---
2814	M. Godfrey	Ringo & Son	9-14-59	690	Dr	145	6	58	Oh	---	---	---	---	---	---	---	---	---
2814	L. H. Miller, Jr.	do	9-25-59	675	Dr	120	7	57	P	---	---	---	---	---	---	---	---	---
2814	J. Diendorf	Campbell Bros.	9-25-59	675	Dr	120	7	57	P	---	---	---	---	---	---	---	---	---
2814	F. Hornaling	Ringo & Son	9-4-59	670	Dr	55	6	55	Oh	---	---	---	---	---	---	---	---	---
2814	R. Lawrence	do	10-16	670	Dr	140	6	82	Oh	---	---	---	---	---	---	---	---	---
2814	Libby Food Products	do	2-10-14	665	Dr	251	8	76	Oh	---	---	---	---	---	---	---	---	---
2814	do	C. Ringo	1813	665	Dr	22	---	---	---	---	---	---	---	---	---	---	---	---
2814	do	do	1813	685	Dr	40	---	---	---	---	---	---	---	---	---	---	---	---
2814	do	do	1913	665	Dr	24	---	---	---	---	---	---	---	---	---	---	---	---
2814	do	do	6-48	650	Dr	26	---	---	---	---	---	---	---	---	---	---	---	---
2814	R. Caughnauer	Ringo & Son	6-48	650	Dr	26	---	---	---	---	---	---	---	---	---	---	---	---
2814	Flick's Drive-Inn	M. Scober	---	600	Dr	600	8	250	Oh	---	---	---	---	---	---	---	---	---
2814	G. Tisko	Ringo & Son	9-27-47	650	Dr	30	6	580	P	---	---	---	---	---	---	---	---	---
2814	do	do	1951	650	Dr	54	6	54	P	---	---	---	---	---	---	---	---	---
2814	do	do	3-11-57	650	Dr	22	8	23	Oh	---	---	---	---	---	---	---	---	---
2814	do	do	12-9-55	675	Dr	140	6	64	Oh	---	---	---	---	---	---	---	---	---
2814	E. McColloster	M. O. Schrader	4-17	660	Dr	85	6	46	Oh	---	---	---	---	---	---	---	---	---
2814	H. McShanok	Ringo & Son	675	675	Dr	201	6	108	Oh	---	---	---	---	---	---	---	---	---
2814	Mr. Price	C. Ringo	9-3-47	670	Dr	130	7	50	Oh	---	---	---	---	---	---	---	---	---
2814	W. Bell	Ringo & Son	7-51	675	Dr	121	6	57	Oh	---	---	---	---	---	---	---	---	---
2814	D. Martin	do	6-14-52	680	Dr	140	6	104	Oh	---	---	---	---	---	---	---	---	---
2814	Clay County Orphan's Home	do	9-08	680	Dr	132	6	103	Oh	---	---	---	---	---	---	---	---	---
2814	do	do	4-17	680	Dr	121	6	82	Oh	---	---	---	---	---	---	---	---	---
2814	H. McShanok	Ringo & Son	9-22	675	Dr	131	6	100	Oh	---	---	---	---	---	---	---	---	---
2814	Town of Knightsville	Ringo & Son	7-55	680	Dr	45	6	69	Oh	---	---	---	---	---	---	---	---	---
2814	I. Christopher	Ringo & Son	11-17-52	680	Dr	60	6	27	Oh	---	---	---	---	---	---	---	---	---
2814	M. O. Schrader	do	6-51	675	Dr	60	6	60	S	---	---	---	---	---	---	---	---	---
2814	C. D. Guillard	Campbell Bros.	5-52	665	Dr	57	0	57	P	---	---	---	---	---	---	---	---	---
2814	E. Buchholz	Ringo & Son	11-1-47	660	Dr	48	0	48	Oh	---	---	---	---	---	---	---	---	---

Table 1.--Records of wells, Clay County, Indiana--Continued

Well No.	Owner	Driller	Date completed	Altitude (feet)	Type of well	Depth of well below land-surface (feet)	Diameter (inches)	Depth of casing (feet)	Finish	Water-bearing zone						Water level (feet)	Yield (gpm)	Use	Remarks
										Depth to top (feet)	Thickness (feet)	Material	Geologic age	Ground-water occurrence					
137W-36N1	City of Brazil	Ringo & Son	10-14	620	Dr	102	8		P	26	14	S.G	Pl	--	--	N	L		
36N4	do	C. Ringo		620	Dr	100	4		P	10	12	S.G	Pl	--	--	N	L		
36N5	do	Ringo & Son	5-18	620	Dr	100	8	100	P	20	13	S.G	Pl	U(?)	--	N	L		
36N6	do	do		620	Dr	126	8		S	40	10	S.G	Pl	C	15	O.H	Observation well Clay 2. W		
36N1	Brazil Ice Co.	Smith	3-19	620	Dr	102	8	102	S	40	10	S.G	Pl	C	15	1	A; DM 2 ft after 10 days pump- ing at 175 gpm		
36N2	do	C. Ringo		625	Dr	120			P	37	17	S.G	Pl	C	--	N	L		
36N3	do	do	1913	630	Dr	120	10	30	P	18	22	S.G	Pl	--	--	N	L		
36N4	City of Brazil	Ringo & Son		620	Dr	50			P	45	3	S.G	Pl	--	--	N	L		
36N5	do	do	6-16-18	630	Dr	133	8	133	P	21	30	S.G	Pl	U	24	N	L		
36N6	do	do	7-52	630	Dr	135		80	S	29	25	S.G	Pl	--	--	N	L		
36N7	Brazil Ice Co.	C. Ringo	4-13-10	620	Dr	90	6	52	P, Oh	18	14	S.G	Pl	--	--	N	L		

Table 2.--Selected well logs, Clay County, Indiana

Remarks: T.D., total depth in feet, complete log
or sample log not given; W.B., water bearing

Well 9/6W- 4E1

Type of record: Driller's log Altitude: About 570 feet

Material	Thick- ness (feet)	Depth (feet)	Remarks
Open well-----	27	27	
Pennsylvanian system:			
Lower series:			
Sandstone-----	11	38	
Shale, dark-gray-----	16	54	
Sandstone-----	4	58	
Shale, sandy, gray-----	5	63	
Sandstone-----	41	104	W.B

Well 9/6W- 4R1

Type of record: Driller's log. Altitude: About 595 feet

Quaternary system:			
Recent and Pleistocene series:			
Surface and pan-----	23	23	
Pennsylvanian system:			
Lower series:			
Shale, sandy, dark to gray-	37	60	
Coal and jack-----	.5	60.5	
Clay and gray shale-----	2	62.5	
Shale, sandy, gray-----	13.5	76	
Shale, sandy, dark-gray---	2	78	
Sandstone-----	3	81	
Shale, sandy, dark-gray---	6	87	
Shale, sandy, gray-----	4	91	
Shale, sandy, dark-gray---	3	94	
Sandstone-----	1.5	95.5	
Shale, sandy, dark-gray---	1.5	97	
Sandstone-----	54	151	W.B

Well 9/6W- 5J1

Type of record: Driller's log. Altitude: About 580 feet.

Quaternary system:			
Recent and Pleistocene series:			
Open well-----	18	18	
Shale, soft, yellow-----	25	43	Clay (?)
Pennsylvanian system:			
Lower series:			
Shale, gray-----	4	47	
Coal-----	2	49	
Clay-----	1	50	
Shale, sandy, gray-----	14	64	
Sandstone-----	1	65	
Shale, sandy, gray-----	4	69	

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 9/6W- 6F1

Type of record: Driller's log. Altitude: About 600 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Surface-----	20	20	
Softpan, gray-----	28	48	
Pennsylvanian system:			
Lower series:			
Slate, blue-----	16	64	
Fire clay, soft-----	8	72	
Shale, sandy, light-----	5	77	
Shale, sandy, gray-----	23	100	
Shale, dark-blue-----	12	112	
Coal-----	1	113	W.B.
Fire clay, hard-----	2	115	
Shale, light-blue-----	15	130	
Shale, sandy, gray-----	10	140	
Shale, dark-gray-----	7	147	
Shale, sandy, gray-----	5	152	

Well 9/6W- 8M1

Type of record: Driller's log. Altitude: About 580 feet.

Quaternary system:			
Recent and Pleistocene series:			
Surface clay-----	20	20	
Clay, sandy-----	15	35	
Pennsylvanian system:			
Lower series:			
Shale, sandy-----	25	60	
Shale-----	10	70	
Shale, sandy-----	5	75	
Sandstone and limestone---	35	110	
Coal-----	3	113	
Sandstone and limestone---	17	130	
Sandstone-----	10	140	
Shale, sandy-----	20	160	
Sandstone-----	75	235	
Mississippian? system:			
Chester? series:			
Shale-----	20	255	
Sandstone and limestone---	25	280	
Limestone-----	20	300	
Shale, red and green-----	20	320	
Sandstone-----	13	333	
Shale-----	27	360	
Sandstone-----	30	390	
Limestone, shaly-----	10	400	T.D. 1,730 ft

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 9/6W- 9J1

Type of record: Driller's log.

Altitude: About 590 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	13	13	
Pennsylvanian system:			
Lower series:			
Sandstone, brown-----	9	22	
Shale, gray-----	21	43	
Coal-----	2	45	
Fire clay-----	2	47	
Shale, gray-----	14	61	
Coal-----	1	62	
Shale, gray-----	22	84	
Shale, sandy, gray-----	6	90	
Shale, gray-----	37	127	
Sandstone, gray-----	13	140	
Shale, sandy, gray-----	57	197	
Shale, gray-----	6	203	
Shale, sandy, gray-----	30	233	
Sandstone, white-----	23	256	W.B.

Well 9/6W-15N1

Type of record: Driller's log.

Altitude: About 600 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Surface-----	7	7	
Pennsylvanian system:			
Lower series:			
Sandstone-----	11	18	
Shale, sandy, dark-gray---	7	25	
Sandstone-----	3	28	W.B.
Shale, dark-gray-----	14	42	
Shale, sandy, gray-----	20	62	W.B.

Well 9/6W-15R1

Type of record: Driller's log.

Altitude: About 647 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Surface clay, soft, yellow	10	10	
Pennsylvanian system:			
Lower series:			
Sandstone, soft, white---	12	22	
Coal, soft, blue-----	1	23	
Shale, soft, blue-----	8	31	
Coal-----	2	33	
Shale, soft, gray-----	37	70	
Coal-----	3	73	
Shale, sandy, soft, blue-	100	173	

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 9/6W-15R1--Continued

Material	Thick- ness (feet)	Depth. (feet)	Remarks
Pennsylvanian system:			
Lower series:			
Shale, soft, blue-----	37	210	
Sandstone, hard, brown---	10	220	
Mississippian system:			
Chester? series:			
Shale, soft, white-----	18	238	
Limestone, hard, white---	22	260	
Shale, dark-----	12	272	
Red rock-----	7	279	
Slate, dark-----	5	284	
Limestone, caved, light--	12	296	Porous
Limestone, broken, dark--	6	302	
Sandstone, broken, dark-gray	6	308	
Red rock, soft-----	5	313	
Red rock, sandy, firm----	4	317	
Slate, sandy, soft, dark-	8	325	
Limestone, hard, dark----	3	328	
Limestone, soft, dark----	4	332	
Red rock, soft-----	4	336	T.D. 480 ft

Well 9/6W-16N1

Type of record: Driller's log.

Altitude: About 530 feet.

Quaternary system:			
Recent and Pleistocene series:			
Surface-----	20	20	
Sand, dirty, and clay----	5	25	
Softpan, gray, with streaks of sand and gravel-----	7	32	
Hardpan, gray-----	7	39	
Softpan, dark-----	31	70	
Sand and gravel-----	--	70	W.B.

Well 9/6W-16P1

Type of record: Driller's log.

Altitude: About 545 feet.

Quaternary system:			
Recent and Pleistocene series:			
Surface-----	12	12	
Clay, yellow-----	18	30	
Pennsylvanian system:			
Lower series:			
Slate, blue-----	4	34	
Coal, trace-----	--	34	
Fire clay (?)-----	4	38	
Shale (?), light-----	6	44	
Shale, sandy, light-----	9	53	
Coal-----	1	54	

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 9/6W-16P1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Pennsylvanian system:			
Lower series:			
Fire clay (?)-----	3	57	
Shale, sandy, blue-----	15	72	
Shale, sandy, light-----	3	75	
Sandstone, white-----	4	79	
Slate, dark-blue-----	7	86	

Well 9/6W-17N1

Type of record: Driller's log

Altitude: About 555 feet.

Quaternary system:			
Recent and Pleistocene series:			
Surface-----	13	13	
Sand-----	4	17	
Pennsylvanian system:			
Lower series:			
Shale, sandy-----	5	22	
Shale, blue-----	3	25	
Shale, sandy, brown-----	24	49	
Shale, gray-----	12	61	
Shale, blue-----	9	70	
Shale, dark-gray-----	6	76	
Shale, light-gray-----	10	86	
Shale, dark-gray-----	9	95	
Shale, dark-----	2	97	
Shale, gray-----	2	99	
Shale, sandy, gray-----	7	106	
Sandstone, gray-----	4.5	110.5	
Shale, dark-----	17.5	128	
Limestone and slate-----	2	130	
Sandstone, gray-----	6	136	
Shale, dark-----	2.5	138.5	
Coal-----	.5	139	
Shale, gray-----	7	146	
Sandstone, dark-----	3	149	
Shale, dark-----	4	153	
Sandstone, dark-----	4	157	
Shale, sandy, gray-----	12	169	
Sandstone, gray-----	23	192	
Sandstone, dark-----	10	202	
Shale, gray-----	16	218	
Sandstone, gray-----	4	222	
Shale, gray-----	6	228	
Sandstone, gray-----	9	237	
Shale, sandy-----	4	241	

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 9/6W-18G1

Type of record: Driller's log.

Altitude: About 555 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay and gravel-----	8	8	
Hardpan, dark-----	3	11	
Hardpan, gray-----	4	15	
Pennsylvanian system:			
Lower series:			
Fire clay-----	1	16	
Shale, sandy, dark-----	19	35	
Shale, dark-----	6	41	
Shale, sandy, broken-----	14	55	W.B
Shale, dark-----	5	60	
Coal-----	2	62	
Fire clay-----	1	63	
Sandstone-----	23	86	
Slate, dark-----	15	101	
Sandstone, gray-----	26	127	
Sandstone, hard, black----	3	130	
Sandstone, dark-----	22	152	
Sandstone, brown-----	15	167	
Sandstone, gray-----	5	172	
Sandstone, dark-----	43	215	
Shale, dark-----	15	230	
Limestone, sandy, brown---	12	242	
Sandstone, hard, dark----	2	244	
Sandstone-----	21	265	
Limestone-----	6	271	

Well 9/6W-18G2

Type of record: Driller's log.

Altitude: About 550 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Soil and sand-----	20	20	
Pan, blue-----	44	64	
Pennsylvanian system:			
Lower series:			
Sandstone, brown to gray--	11	75	
Conglomerate-----	1	76	"Bad water"
Shale, sandy, medium-hard, gray-----	26	102	
Shale, sandy, gray-----	6	108	
Sandstone-----	18	120	
Sandstone, dark-gray-----	15	135	W.B.

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 9/6W-18L1

Type of record: Driller's log.

Altitude: About 540 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Soil and pan-----	40	40	
Pennsylvanian system:			
Lower series:			
Shale, blue-----	10	50	
Coal-----	2	52	
Clay, grading to gray shale-	17	69	
Shale, medium-hard, gray---	2	71	
Shale, sandy, gray-----	30	101	
Sandstone-----	20	121	
Shale, medium-hard, dark-			
gray-----	7	128	
Sandstone-----	9	137	W.B.

Well 9/6W-20C1

Type of record: Driller's log.

Altitude: About 550 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Open well-----	27	27	
Pennsylvanian system:			
Lower Series:			
Shale, sandy-----	4	31	
Shale, blue-----	19	50	
Rock, black-----	2	52	Limestone (?)
Shale, sandy-----	8	60	
Shale, blue-----	40	100	
Coal-----	2	102	
Shale-----	6	108	
Sandstone-----	37	145	W.B.
Shale, blue-----	--	145	

Well 9/6W-20D1

Type of record: Driller's log.

Altitude: About 555 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Surface-----	19	19	
Sand-----	8	27	
Pennsylvanian system:			
Lower series:			
Shale, sandy, gray-----	2	29	
Shale, gray-----	3	32	
Shale, dark-----	2	34	
Coal-----	1	35	
Shale, gray-----	3	38	
Shale, blue-----	5	43	
Shale, gray-----	19.5	62.5	
Coal-----	1	63.5	
Fire clay-----	4	67.5	
Shale, gray-----	12.5	80	

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 9/6W-20D1--Continued			
Material	Thick- ness (feet)	Depth (feet)	Remarks
Pennsylvanian system:			
Lower series:			
Shale, light-gray-----	13	93	
Sandstone, gray-----	1.5	94.5	
Shale, gray-----	2	96.5	
Shale, blue-----	2	98.5	
Coal-----	.5	99	
Shale, gray-----	11	110	
Shale, dark-----	15.5	125.5	
Sandstone, gray-----	9.5	135	
Shale, blue-----	4.5	139.5	
Shale, gray-----	3.5	143	
Sandstone, gray-----	6	149	
Shale, dark-----	6	155	
Shale, gray-----	17	172	
Sandstone, gray-----	24	196	W.B.
Sandstone, dark-----	18	214	W.B.
Shale, gray-----	6	220	

Well 9/6W-21K1

Type of record: Driller's log.

Altitude: About 535 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	16	16	
Hardpan-----	3	19	
Mud, dark, and gravel-----	57	76	
Sand-----	2	78	W.B.
Gravel-----	2	80	W.B.

Well 9/6W-21K2

Type of record: Driller's log.

Altitude: About 545 feet.

Quaternary system:			
Recent and Pleistocene series:			
Surface-----	10	10	
Pan-----	30	40	
Pennsylvanian system:			
Lower series:			
Sandstone-----	12	52	
Shale, sandy, gray-----	36	88	
Coal-----	3	91	W.B.
Clay-----	3	94	
Shale, sandy, gray-----	6	100	

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 9/6W-21R1

Type of record: Driller's log. Altitude: About 565 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Old well-----	25	25	
Pennsylvanian system:			
Lower series:			
Shale, dark-----	75	100	
Coal and shale, mixed----	3	103	W.B.
Shale, sandy-----	23	126	

Well 9/6W-22M1

Type of record: Driller's log. Altitude: About 540 feet.

Quaternary system:			
Recent and Pleistocene series:			
Surface-----	12.5	12.5	
Hardpan-----	10	22.5	
Pan, smooth-----	7.5	30	
Sand and gravel-----	3	33	
Softpan-----	13	46	
Sand and gravel-----	1	47	
Pennsylvanian system:			
Lower series:			
Shale, gray-----	1	48	
Sandstone-----	14	62	
Shale, sandy, gray-----	12.5	74.5	
Coal-----	3.5	78	
Clay-----	1	79	
Shale, sandy, gray-----	8	87	
Sandstone-----	3	90	
Shale, sandy, gray-----	10	100	

Well 9/6W-27J1

Type of record: Driller's log. Altitude: About 560 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay-----	12	12	
Slate-----	36	48	Fissile clay (?)
Sand and gravel-----	10	58	
Pennsylvanian system:			
Lower series:			
Slate-----	29	87	
Sandstone-----	73	160	
Slate-----	37	197	
Sandstone-----	5	202	
Shale-----	35	237	
Mississippian system:			
Chester series:			
Limestone, brown-----	13	250	
Red rock and green shale--	20	270	
Shale-----	48	318	

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 9/6W-27J1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Mississippian system:			
Chester series:			
Sandstone-----	41	359	W.B.
Limestone-----	3	362	
Slate-----	17	379	T.D. 1,670 ft

Well 9/6W-28A1

Type of record: Driller's log		Altitude: About 575 feet.	
Quaternary system:			
Recent and Pleistocene series:			
Surface-----	8	8	
Softpan-----	3	11	
Hardpan-----	12	23	
Pan, sandy, smooth-----	7.5	30.5	
Pennsylvanian system:			
Lower series:			
Shale, sandy, gray-----	44.5	75	
Shale, sandy, dark-gray-----	7	82	
Sandstone-----	4	86	
Shale, sandy, dark-gray-----	8	94	

Well 9/6W-31D1

Type of record: Driller's log.		Altitude: About 525 feet.	
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	12	12	
Quicksand-----	38	50	
Muck, blue-----	1	51	
Gravel-----	11	62	W.B.

Well 9/7W- 1D1

Type of record: Driller's log.		Altitude: About 550 feet.	
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	22	22	
Pennsylvanian system:			
Lower series:			
Sandstone-----	6	28	
Shale, gray-----	17	45	
Shale, sandy-----	20	65	W.B.
Sandstone-----	10	75	W.B.
Coal-----	3	78	
Fire clay-----	4	82	
Shale, gray-----	--	82	

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 9/7W- 6C1--Continued			
Material	Thick- ness (feet)	Depth (feet)	Remarks
Pennsylvanian system:			
Middle series:			
Shale, gray-----	9	28	
Sandstone-----	35	63	W.B. 60 to 63 ft
Shale, dark-----	2	65	

Well 9/7W- 6G1

Type of record: Driller's log.

Altitude: About 640 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay-----	10	10	
Pennsylvanian system:			
Middle series:			
Shale-----	15	25	
Sandstone-----	13	38	
Shale, gray-----	17	55	
Shale, dark, and trace of coal	5	60	
Limestone-----	1	61	
Shale-----	14	75	
Sandstone-----	35	110	W.B.
Shale, dark-----	15	125	
Slate, black-----	8	133	
Shale, gray-----	7	140	
Sandstone-----	3	143	
Shale, light-----	11	154	
Shale, sandy, broken-----	10	164	
Sandstone-----	21	185	
Shale, gray-----	5	190	
Shale, sandy-----	9	199	
Slate-----	--	199	

Well 9/7W- 7C1

Type of record: Driller's log.

Altitude: About 570 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	9	9	
Pennsylvanian system:			
Middle series:			
Sandstone-----	21	30	
Mud, gray-----	8	38	
Sandstone, green-----	8	46	
Sandstone, brown-----	7	53	
Shale, sandy-----	7	60	
Sandstone-----	7	67	W.B.
Shale, sandy-----	3	70	

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 9/7W- 8L1			
Type of record: Driller's log.		Altitude: About 595 feet.	
Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Surface-----	10	10	
Pennsylvanian system:			
Middle series:			
Sandstone, soft-----	4	14	W.B.
Coal-----	.5	14.5	W.B.
Clay-----	.5	15	
Shale, sandy, gray-----	10	25	
Shale, gray-----	14	39	
Coal-----	4	43	W.B.
Clay-----	4	47	
Shale, gray-----	3	50	
Sandstone-----	30	80	
Slate, black-----	2	82	
Coal-----	3	85	W.B.
Clay-----	1	86	
Shale, gray-----	9	95	
Sandstone-----	8	103	
Shale, gray-----	2	105	
Sandstone-----	13	118	
Shale, gray-----	5	123	
Slate, black-----	2	125	
Coal-----	1	126	W.B.
Clay-----	1	127	
Shale, gray-----	1	128	
Sandstone-----	4	132	

Well 9/7W- 9M1			
Type of record: Driller's log.		Altitude: About 542 feet.	
Record missing-----	35	35	
Pennsylvanian system:			
Middle series:			
Coal-----	2	37	
Record missing-----	8	45	
Shale, gray and light-gray, with sandy laminations--	39	84	
Coal-----	3	87	
Shale, gray and light-gray, with sandy laminations--	23	110	
Sandstone, fine-grained, tight, hard, shaly-----	9	119	
Lower(?) series:			
Shale, gray, with sandy laminations-----	11	130	
Shale, bituminous, micace- ous, gray to dark-gray--	10	140	

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 9/7W- 9M1--Continued			
Material	Thick- ness (feet)	Depth (feet)	Remarks
Pennsylvanian system:			
Lower(?) series:			
Sandstone, dirty, shaly, gray--	10	150	
Shale, sandy, gray-----	20	170	
Shale, gray-----	9	179	
Underclay-----	2	181	
Shale, gray-----	4	185	
Shale, dark-gray, with sandstone laminations-----	15	200	
Underclay-----	1	201	
Shale, gray-----	14	215	
Underclay-----	1	216	
Shale, gray-----	3	219	
Underclay-----	1	220	
Shale, gray-----	20	240	
Shale, slaty, dark-gray to black	5	245	
Underclay-----	1	246	
Shale, slaty, dark-gray to black	16	262	
Underclay-----	1	263	
Shale, slaty, dark-gray to black	5	268	
Sandstone, coarse-grained, clear, angular grains, moderate to well-cemented, fair porosity, gray-----	20	288	"Free oil"
Limestone-----	2	290	
Sandstone, coarse-grained, clear, angular grains, moderate to well-cemented, fair porosity, gray-----	10	300	
Sandstone, coarse-grained, angu- lar, incoherent, partly cal- careous, siderite stained and cemented, pyritic, gray-----	70	370	
Sandstone, coarse-grained, angu- lar, calcareous and shaly, gray, with dark-gray to black, silty and bituminous, shale; large, clear to milky quartz grains-----	30	400	T.D. 1,788 ft

Well 9/7W- 9R1

Type of record: Driller's log.

Altitude: About 605 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay-----	14	14	
Pennsylvania system:			
Middle series:			
Sandstone-----	8	22	

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 9/7W-9R1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Pennsylvanian system:			
Middle series:			
Shale, dark-----	8	30	
Coal-----	2	32	
Sandstone-----	5	37	
Shale, gray-----	12	49	
Rock and sandstone, gray---	11	60	Limestone (?) and sandstone
Shale, dark-----	5	65	
Coal-----	2	67	
Fire clay-----	3	70	
Shale, sandy-----	7	77	
Shale, gray-----	15	92	
Limestone-----	3	95	
Shale, light-gray-----	30	125	
Sandstone-----	15	140	
Pennsylvanian system:			
Lower series:			
Shale, gray-----	12	152	
Coal-----	1	153	
Fire clay-----	4	157	
Shale, gray-----	5	162	
Sandstone, gray-----	22	184	
Shale, sandy, dark-----	10	194	
Shale, dark-----	4	198	
Limestone-----	2	200	
Shale, dark-----	34	234	
Sandstone-----	6	240	
Sandstone, broken-----	13	253	
Sandstone-----	19	272	
Sandstone, broken-----	7	279	
Shale, dark-----	13	292	
Shale, gray-----	8	300	
Shale, dark-----	20	320	

Well 9/7W-12A1

Type of record: Driller's log.

Altitude: About 570 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	15	15	
Shale, sandy-----	8	23	Clay (?)
Sand and gravel-----	9	32	
Shale, sandy-----	34	66	Clay (?)
Sand and gravel-----	1	67	
Shale, sandy-----	18	85	Clay (?)

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 9/7W-12A1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Pennsylvanian system:			
Lower series:			
Shale, blue-----	9	94	
Coal-----	3	97	
Fire clay-----	2	99	
Sandstone-----	3	102	
Shale, gray-----	14	116	
Coal-----	.5	116.5	
Fire clay-----	3.5	120	
Shale, gray-----	23	143	
Shale, black-----	12	155	
Coal-----	3	158	
Fire clay-----	1	159	
Shale, sandy, gray-----	9	168	

Well 9/7W-14Q1

Type of record: Driller's log.

Altitude: About 520 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	2	2	
Clay, sandy-----	10	12	
Sand, medium-----	9	21	W.B.
Clay, gray-----	13	34	
Sand, fine-----	6	40	W.B.
Sand, medium, and gravel-----	18	58	W.B.
Clay, hard-----	--	58	

Well 9/7W-14Q2

Type of record: Driller's log.

Altitude: About 520 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	2	2	
Clay, yellow-----	10	12	
Sand, coarse-----	10	22	W.B.
Clay, gray-----	14	36	
Sand, medium-----	14	50	W.B.
Sand, medium, and gravel-----	12	62	W.B.
Clay, hard, gray-----	--	62	

Well 9/7W-14Q3

Type of record: Driller's log.

Altitude: About 520 feet.

Quaternary system:			
Recent and Pleistocene series:			
Fill-----	6	6	
Sand, fine-----	30	36	W.B.
Clay-----	12	48	

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 9/7W-14Q3--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, coarse, and gravel----	8	56	W.B.
Clay-----	16	72	
Sand, fine-----	13	85	W.B.
Clay-----	6	91	
Pennsylvanian system:			
Lower series:			
Rock-----	--	91	

Well 9/7W-15K1

Type of record: Driller's log.

Altitude: About 530 feet.

Quaternary system:			
Recent and Pleistocene series:			
Surface-----	18	18	
Pennsylvanian system:			
Middle series:			
Shale, gray-----	4	22	
Shale, sandy, gray-----	7	29	
Coal and jack-----	3	32	
Clay-----	1.5	33.5	
Shale, gray-----	4.5	38	
Shale, dark-gray-----	6	44	
Coal-----	1	45	
Clay-----	1	46	
Shale, gray-----	5	51	
Shale, sandy, gray-----	4	55	
Shale, sandy, dark-gray----	2	57	
Sandstone-----	1	58	
Lower(?) series:			
Shale, sandy, dark-gray----	4	62	
Sandstone-----	9	71	
Shale, sandy, gray-----	13	84	
Coal-----	1.5	85.5	
Clay-----	1	86.5	
Shale, dark-gray-----	3.5	90	
Sandstone-----	4	94	
Shale, sandy, gray-----	7	101	
Coal-----	1.5	102.5	
Clay-----	1	103.5	
Shale, gray-----	1.5	105	

Well 9/7W-16C1

Type of record: Driller's log.

Altitude: About 617 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay-----	18	18	

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 9/7W-16C1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Pennsylvanian system:			
Middle series:			
Sandstone-----	18	36	
Shale, dark-----	3	39	
Coal-----	3	42	
Limestone-----	1	43	
Fire clay-----	4	47	
Shale, gray-----	3	50	
Sandstone, gray-----	5	55	
Shale, sandy-----	5	60	
Shale, gray-----	12	72	
Sandstone, gray-----	8	80	
Shale, dark-----	4	84	
Coal-----	1	85	
Shale, light-gray-----	84	169	
Lower(?) series:			
Coal-----	1	170	
Fire clay-----	4	174	
Shale, gray-----	9	183	
Shale, dark-----	4	187	
Sandstone-----	2	189	
Shale, dark-----	5	194	
Shale, gray-----	8	202	
Shale, sandy, dark-----	22	224	
Shale, sandy, gray-----	9	233	
Sandstone-----	10	243	
Shale, sandy, broken-----	49	292	
Sandstone, brown-----	19	311	
Shale-----	--	311	

Well 9/7W-16C2

Type of record: Driller's log.

Altitude: About 580 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay and soil-----	12	12	
Pennsylvanian system:			
Middle series:			
Sandstone-----	10	22	
Shale and slate, black-----	13	35	
Limestone-----	2	37	
Sandstone-----	15	52	
Sandstone, shaly-----	6	58	
Shale, dark-gray-----	6	64	
Coal-----	1	65	
Sandstone, shaly-----	49	114	
Coal-----	1	115	
Shale, light-gray-----	26	141	

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 9/7W-16C2--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Pennsylvanian system:			
Lower series:			
Shale, gray-----	13	154	
Coal-----	1	155	
Shale-----	9	164	
Coal-----	1	165	
Shale, sandy-----	32	197	
Shale, sandy, gray-----	15	212	
Coal-----	1	213	
Fire clay-----	1	214	
Sandstone-----	1	215	Oil
Sandstone, shaly-----	4	219	
Shale, and some sandstone-	2.5	221.5	
Sandstone, and some shale-	4.5	226	
Sandstone, brown-----	3	229	Oil
Sandstone-----	1	230	Oil
Sandstone, brown-----	2	232	Oil
Sandstone-----	18	250	
Sandstone, shaly-----	20	270	
Shale, sandy, broken-----	34	304	

Well 9/7W-17K1

Type of record: Driller's log.

Altitude: About 620 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay-----	11	11	
Pennsylvanian system:			
Middle series:			
Sandstone, brown-----	20	31	
Limestone and black shale-	5	36	
Shale, shelly-----	8	44	
Coal-----	3	47	
Fire clay and shale-----	11	58	
Shale, blue-----	27	85	
Shale, gray-----	5	90	
Shale, sandy-----	18	108	
Shale, black-----	6	114	
Coal-----	2	116	
Fire clay-----	4	120	
Shale, sandy-----	35	155	
Shale, gray-----	10	165	
Coal-----	1	166	
Fire clay-----	2	168	
Shale, sandy-----	8	176	
Sandstone-----	19	195	W.B.
Lower series:			
Shale, sandy-----	8	203	
Shale, blue-----	17	220	
Shale, black-----	2	222	

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 9/7W-17K1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Pennsylvanian system:			
Lower series:			
Coal-----	1	223	
Fire clay, shaly-----	8	231	
Shale, sandy-----	28	259	
Coal and fire clay-----	1	260	
Shale, gray-----	41	301	
Shale, sandy-----	31	332	
Coal and black shale-----	4	336	
Fire clay-----	4	340	
Shale, brown-----	6	346	
Shale, gray-----	15	361	
Coal, trace-----	--	361	
Fire clay-----	2	363	
Coal and fire clay-----	7	370	
Shale, black-----	3	373	
Shale, gray-----	8	381	
Limestone, shell-----	3	384	
Sandstone, brown-----	3	387	
Shale, dark-----	38	425	
Sandstone-----	5	430	W.B.

Well 9/7W-17N1

Type of record: Driller's log.

Altitude: About 580 feet.

Quaternary system:			
Recent and Pleistocene series:			
Drift-----	8	8	
Pennsylvanian system:			
Middle series:			
Sandstone-----	2	10	
Shale-----	20	30	
Coal-----	1	31	
Shale-----	4	35	
Limestone-----	2	37	
Sandstone-----	43	80	W.B.
Coal-----	1	81	
Shale-----	3	84	
Coal-----	4	88	
Fire clay-----	4	92	
Sandstone, brown-----	1	93	
Fire clay-----	2	95	
Shale, sandy-----	2	97	
Sandstone-----	12	109	W.B.
Fire clay-----	4	113	
Sandstone-----	6	119	
Shale, black-----	8	127	
Coal-----	1	128	
Shale, white-----	4	132	

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 9/7W-17N1--Continued			
Material	Thick- ness (feet)	Depth (feet)	Remarks
Pennsylvanian system:			
Middle series:			
Sandstone-----	3	135	
Shale, white-----	2	137	
Limestone-----	2	139	
Sandstone-----	4	143	
Coal-----	2	145	
Shale-----	2	147	
Limestone-----	8	155	
Shale-----	8	163	
Coal-----	2	165	
Sandstone-----	5	170	
Lower(?) series:			
Shale-----	6	176	
Coal-----	1	177	
Shale-----	5	182	
Limestone-----	6	188	
Coal-----	12	200	
Shale-----	32	232	
Limestone, brown-----	5	237	
Shale-----	40	277	
Coal-----	1	278	
Shale-----	24	302	
Coal-----	5	307	
Shale-----	30	337	
Limestone-----	2	339	
Shale, brown-----	10	349	
Shale-----	16	365	
Sandstone-----	5	370	W.B.

Well 9/7W-21N1

Type of record: Driller's log.

Altitude: About 585 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	15	15	
Pennsylvanian system:			
Middle series:			
Sandstone-----	31	46	W.B.
Coal-----	4	50	
Fire clay-----	2	52	

Well 9/7W-23G1

Type of record: Driller's log.

Altitude: About 520 feet.

Quaternary system:			
Recent and Pleistocene series:			
Soils-----	10	10	
Sand, fine-----	14	24	W.B.

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 9/7W-23G1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay-----	40	64	
Sand, medium-----	3	67	W.B.
Clay-----	13	80	
Pennsylvanian system:			
Lower series:			
Rock-----	--	80	

Well 9/7W-28H1

Type of record: Driller's log. Altitude: About 550 feet.

Quaternary system:			
Recent and Pleistocene series:			
Mud, blue-----	60	60	
Quicksand-----	7	67	
Pennsylvanian system:			
Middle series:			
Sandstone, white-----	29	96	W.B.

Well 9/7W-28K1

Type of record: Driller's log. Altitude: About 560 feet.

Quaternary system:			
Recent and Pleistocene series:			
Surface-----	12	12	
Shale, sand and gravel-----	40	52	Clay(?), sand and gravel
Pennsylvanian system:			
Middle series:			
Shale, blue-----	18	70	
Fire clay-----	9	79	W.B.

Well 9/7W-30F1

Type of record: Driller's log. Altitude: About 620 feet.

Quaternary system:			
Recent and Pleistocene series:			
Hardpan-----	22	22	
Pennsylvanian system:			
Middle series:			
Limestone, hard-----	4	26	
Slate, black-----	3	29	
Coal-----	4	33	
Shale, dark-----	7	40	
Sandstone-----	15	55	W.B.
Shale, dark-----	8	63	

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 9/7W-31M1

Type of record: Driller's log Altitude: About 570 feet.

Material	Thick-ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Surface; clay-----	21	21	
Pennsylvanian system:			
Middle series:			
Sandstone-----	7	28	
Shale, sandy-----	17	45	
Sandstone-----	10	55	
Slate, gray-----	13	68	
Sandstone-----	7	75	
Shale, gray-----	10	85	
Limestone-----	5	90	
Coal-----	3	93	
Sandstone-----	32	125	
Shale, gray-----	27	152	
Shale, dark-----	18	170	
Coal-----	3	173	
Shale, dark-----	5	178	
Sandstone, gray-----	16	194	
Mine opening-----	--	194	

Well 9/7W-31R1

Type of record: Driller's log Altitude: About 595 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	16	16	
Pennsylvanian system:			
Middle series:			
Sandstone-----	6	22	
Shale, gray-----	29	51	
Shale, sandy-----	10	61	
Sandstone-----	12	73	W.B.
Shale, gray-----	27	100	W.B.

Well 9/7W-35E1

Type of record: Driller's log Altitude: About 590 feet.

Quaternary system:			
Recent and Pleistocene series:			
Surface-----	11	11	
Pennsylvanian system:			
Middle series:			
Sandstone, yellow-----	13	24	Trace of coal at 21 ft
Shale, sandy, gray-----	6	30	
Shale, soft, dark-gray----	7	37	
Slate and coal-----	2	39	
Shale, soft, light-gray---	14	53	
Coal-----	1.5	54.5	

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 9/7W-35E1--Continued

Material	Thick-- ness (feet)	Depth (feet)	Remarks
Pennsylvanian system:			
Middle series:			
Boulder and sandstone-----	3	57.5	Concretion(?) and sandstone
Coal and fire clay-----	1.5	59	
Shale, gray-----	3	62	
Shale, sandy, light-gray-----	10.5	72.5	
Sandstone, light-gray-----	8.5	81	
Shale, moderately-hard, gray----	2.5	83.5	
Coal-----	.5	84	
Sandstone, gray-----	8	92	
Sandstone and medium-gray, sandy shale-----	13	105	
Shale, sandy, gray-----	12	117	
Shale, hard, gray-----	4.5	121.5	Gas
Lower series:			
Slate, black-----	1	122.5	
Coal-----	1.5	124	
Slate, black-----	3	127	
Coal and sulfur-----	1.5	128.5	
Fire clay-----	2.5	131	
Shale, sandy, gray-----	4	135	
Sandstone, gray-----	2	137	
Shale, sandy, gray-----	4	141	
Coal-----	3	144	Gas
Fire clay-----	2.5	146.5	
Shale, sandy, gray-----	3.5	150	

Well 9/7W-35K1

Type of record: Driller's log.

Altitude: About 570 feet.

Quaternary system:			
Recent and Pleistocene series:			
Surface-----	14	14	
Pennsylvanian system:			
Middle series:			
Sandstone, soft-----	10	24	
Shale, black-----	14	38	
Shale, gray, and soft sandstone-----	31	69	
Coal-----	2	71	
Fire clay-----	7	78	
Coal-----	2.5	80.5	
Fire clay-----	10	90.5	
Coal-----	3	93.5	
Shale-----	1.5	95	
Sandstone, gray-----	32	127	W.B.
Steel band-----	3	130	
Shale, black-----	2	132	
Sandstone, hard-----	--	132	

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 9/7W-36E1		Altitude: About 550 feet.	
Type of record: Driller's log.			
Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Surface-----	13	13	
Pennsylvanian system:			
Middle(?) series:			
Sandstone-----	32	45	
Lower series:			
Shale, dark-----	24	69	
Slate, black-----	6	75	
Coal-----	1	76	
Fire clay-----	2	78	
Shale, gray-----	14	92	
Slate-----	2	94	
Coal-----	1	95	
Fire clay-----	2	97	
Shale, sandy, dark-----	6.5	103.5	
Sandstone-----	13.5	117	
Shale, gray-----	8	125	
Shale, sandy-----	10	135	
Sandstone-----	25	160	
Sandstone, dark-----	18	178	
Sandstone-----	8	186	
Coal-----	1	187	
Fire clay-----	2	189	
Sandstone-----	11	200	
Coal-----	3	203	
Fire clay-----	2	205	
Shale, sandy-----	16	221	
Sandstone-----	17.5	238.5	
Coal-----	.5	239	
Fire clay-----	1	240	
Sandstone-----	11	251	
Shale, gray-----	10	261	

Well 9/7W-36L1		Altitude: About 550 feet.	
Type of record: Driller's log.			
Quaternary system:			
Recent and Pleistocene series:			
Surface-----	13	13	
Pennsylvanian system:			
Middle(?) series:			
Sandstone, yellow-----	8	21	
Lower series:			
Shale, gray-----	17	38	
Slate, black-----	2	40	
Coal-----	2	42	
Fire clay-----	9	51	

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 9/7W-36L1--Continued			
Material	Thick- ness (feet)	Depth (feet)	Remarks
Pennsylvanian series:			
Lower series:			
Sandstone-----	2	53	
Shale, white-----	5	58	
Shale, gray-----	13	71	
Shale, soft, dark-----	2.5	73.5	
Coal-----	1.5	75	
Fire clay-----	3	78	
Sandstone-----	2	80	
Shale, gray-----	11	91	
Sandstone-----	2	93	
Coal-----	1	94	
Bottoms-----	2	96	
Shale, gray-----	25	121	
Sandstone, hard-----	2	123	
Sandstone, pink-----	3	126	
Shale, gray-----	11	137	
Sandstone, gray-----	1	138	
Sandstone, dark-----	12	150	
Shale, dark-----	10	160	
Sandstone-----	12	172	
Shale, sandy-----	2	174	
Slate, black-----	1	175	
Fire clay-----	4	179	
Shale, dark-----	36	215	
Sandstone, white-----	11	226	W.B.
Shale-----	2	228	
Sandstone-----	2	230	
Shale, dark-----	6	236	
Sandstone, dark-----	5	241	

Well 9/7W-36M1

Type of record: Driller's log.

Altitude: About 550 feet.

Quaternary system:		
Recent and Pleistocene series:		
Surface-----	12	12
Pennsylvanian system:		
Middle(?) series:		
Sandstone-----	28	40
Lower series:		
Shale, gray-----	30	70
Slate, black-----	6	76
Coal-----	1	77
Fire clay-----	2	79
Shale, sandy, dark-----	14	93
Coal-----	2.5	95.5
Fire clay-----	2	97.5
Shale, sandy, dark-----	6.5	104

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 9/7W-36M1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Pennsylvanian system:			
Lower series:			
Coal-----	1	105	
Fire clay-----	2	107	
Shale, gray-----	22	129	
Sandstone-----	20	149	
Shale, sandy-----	21	170	
Slate, black-----	4	174	
Coal-----	.5	174.5	
Fire clay-----	2.5	177	
Sandstone and sandy shale-	19	196	
Slate, black-----	--	196	

Well 10/6W- 3M1

Type of record: Driller's log.

Altitude: About 565 feet.

Quaternary system:			
Recent and Pleistocene series:			
Surface sand-----	13	13	
Clay, yellow-----	7	20	
Sand and gravel, dirty----	17	37	
Hardpan, gray-----	10	47	
Softpan, gray-----	23	70	
Sand and gravel, dirty----	10	80	
Wash, gray-----	20	100	
Wash, dark-----	7	107	
Sand and gravel-----	2	109	W.B.
Pennsylvanian system:			
Lower series:			
Shale, sandy, light-----	3	112	

Well 10/6W- 3N1

Type of record: Driller's log.

Altitude: About 565 feet.

Quaternary system:			
Recent and Pleistocene series:			
Soil, sandy-----	25	25	
Sand, dirty, yellow-----	18	43	
Softpan, gray-----	15	58	
Softpan, dark-----	8	66	
Wash, yellow-----	9	75	
Sand and gravel, dirty, yellow-----	10	85	W.B.
Sand and gravel, coarse, blue-----	4	89	W.B.

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 10/6W- 5E1

Type of record: Driller's log.

Altitude: About 546 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Sand, fine to coarse, some silt, loose, brown-----	4	4	
Sand, fine to coarse, some silt, medium-dense, brown----	2	6	
Sand, fine, trace of silt, medium-dense, brown-----	3	9	
Sand, fine to coarse, medium- dense, brown-----	4.5	13.5	
Sand, fine to coarse, trace of gravel, medium-dense, brown-	5	18.5	
Sand, fine to coarse, trace of gravel, medium-dense, gray---	6.5	25	
Sand, fine to medium, trace of silt, dense, gray-----	18.5	43.5	3-inches of gravel at 27 ft
Sand, fine, dense, gray-----	5	48.5	
Sand, fine, some silt, trace of wood, very dense, gray-----	5	53.5	
Sand, fine to medium, trace of gravel, very dense, brown and gray-----	4	57.5	
Sand, fine, trace of silt, very dense, gray-----	9.6	67.1	

Well 10/6W- 6C1

Type of record: Driller's log.

Altitude: About 570 feet.

Quaternary system:			
Recent and Pleistocene series:			
Surface-----	14	14	
Hardpan, dark-----	52	66	
Sand, dirty, gray-----	12	78	
Sand and gravel-----	11	89	
Wash (sandy muck)-----	17	106	
Gravel-----	1	107	W.B.
Pennsylvanian system:			
Lower series:			
Shale, blue-----	--	107	

Well 10/6W- 6N1

Type of record: Driller's log.

Altitude: About 550 feet.

Quaternary system:			
Recent and Pleistocene series:			
Surface-----	17	17	
Drift-----	37	54	
Sand-----	16	70	
Pan-----	9	79	

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 10/6W- 6N1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Pennsylvanian system:			
Lower series:			
Sandstone-----	14	93	
Shale, gray-----	7	100	
Shale, sandy, gray-----	22	122	
Sandstone-----	2	124	
Shale, sandy, gray-----	16	140	
Sandstone-----	11	151	W.B.

Well 10/6W-10E1

Type of record: Driller's log.

Altitude: About 605 feet.

Quaternary system:			
Recent and Pleistocene series:			
Surface-----	17	17	
Pennsylvanian system:			
Lower series:			
Coal-----	3.5	20.5	
Clay-----	6.5	27	
Shale, dark-gray-----	10.5	37.5	
Coal-----	4.5	42	
Sandstone-----	13	55	W.B.
Shale, sandy, gray-----	17	72	
Sandstone-----	49	121	
Shale, sandy, gray-----	7	128	
Sandstone-----	32	160	
Shale, sandy, gray-----	7	167	
Mississippian system:			
Chester series:			
Limestone-----	6	173	
Shale, sandy, gray-----	56	229	
Limestone-----	5	234	
Shale, gray-----	23	257	
Limestone-----	10	267	
Shale, sandy, gray-----	25	292	
Limestone-----	6	298	
Shale, limy-----	2	300	

Well 10/6W-16F1

Type of record: Driller's log.

Altitude: About 570 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	20	20	
Quicksand-----	7	27	
Pennsylvanian system:			
Lower series:			
Shale, sandy, gray-----	41	68	
Sandstone-----	7	75	

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 10/6W-16F1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Pennsylvanian system:			
Lower series:			
Shale, sandy, gray-----	20	95	W.B.
Sandstone-----	15	110	
Shale, sandy, gray-----	14	124	
Shale, gray-----	68	192	
Coal-----	.5	192.5	
Sandstone-----	2.5	195	

Well 10/6W-16G1

Type of record: Driller's log.

Altitude: About 560 feet.

Quaternary system:				
Recent and Pleistocene series:				
Surface-----	27	27	W.B.	
Pennsylvanian system:				
Lower series:				
Shale, dark-----	25	52		
Sandstone, gray-----	58	110		
Shale, gray-----	12	122		

Well 10/6W-16J1

Type of record: Driller's log.

Altitude: About 590 feet.

Quaternary system:				
Recent and Pleistocene series:				
Surface-----	19	19	W.B.	
Pennsylvanian system:				
Lower series:				
Coal-----	1	20		
Shale, gray-----	20.5	40.5		
Coal-----	.5	41		
Fire clay-----	2	43		
Sandstone-----	2	45		
Shale, dark-----	45.5	90.5		
Limestone-----	4	94.5		
Sandstone-----	21.5	116		
Shale, sandy, dark-----	5	121		
Sandstone-----	17	138		
Shale, dark-----	--	138		

Well 10/6W-17D1

Type of record: Driller's log.

Altitude: About 547 feet.

Quaternary system:			
Recent and Pleistocene series:			
Fill; sand, gravel and silt----	2	2	
Clay and silt, trace of sand, stiff, brown and gray-----	2	4	

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 10/6W-17D1--Continued			
Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay and silt, trace of sand, stiff, brown, and gray-----	9.5	13.5	
Silt, some clay, loose, blue and green-----	2.5	16	
Sand, fine to medium, some silt, medium-dense, gray-	7.5	23.5	
Sand, fine to medium, trace of silt and gravel, dense, gray-----	5	28.5	
Sand, fine to medium, some silt, trace of gravel, dense-----	10	38.5	
Sand, fine to coarse, some silt, trace of gravel, very dense, gray-----	3.5	42	

Well 10/6W-17M1			
Type of record: Driller's log.			Altitude: About 556 feet.
Asphalt-----	2	2	
Quaternary system:			
Recent and Pleistocene series:			
Silt and fine sand, medium- dense, brown-----	2	4	
Sand, fine to coarse, some silt and fine gravel, loose, brown-----	2	6	
Silt, some fine sand, loose, brown and gray, and sand, seams-----	7.5	13.5	
Silt, organic, some fine sand, medium-dense, gray-	5	18.5	
Silt, organic, trace of sand, loose, brown and gray-----	5	23.5	
Silt, organic, trace of sand, loose, gray-----	7.5	31	
Silt, organic, some sand, loose, gray-----	2	33	
Pennsylvanian(?) system:			
Lower(?) series:			
Shale(?), hard-----	2	35	

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 10/6W-18A1

Type of record: Driller's log.

Altitude: About 555 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Silt and muck soil-----	10	10	
Sand, fine-----	1	11	
Clay, sandy-----	5	16	
Sand, muddy-----	6	22	
Sand, medium, clean-----	6	28	W.B.
Gravel, coarse-----	6	34	W.B.
Sand, coarse, and gravel-----	23	57	W.B.
Gravel, coarse-----	3	60	W.B.
Clay and muddy gravel-----	5	65	

Well 10/6W-18H1

Type of record: Driller's log.

Altitude: About 550 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay, tough-----	18	18	
Clay, sandy, fine-----	10	28	
Sand, fine, muddy-----	11	39	
Sand, fine, and medium gravel, muddy-----	10	49	W.B.
Sand, medium, and gravel, clean-----	10	59	W.B.
Sand, muddy-----	1	60	

Well 10/6W-18H3

Type of record: Driller's log.

Altitude: About 550 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Muck-----	12	12	
Sand-----	.5	12.5	W.B.
Pennsylvanian system:			
Lower series:			
Shale, blue-----	1.5	14	
Sandstone-----	6	20	

Well 10/6W-19J1

Type of record: Driller's log.

Altitude: About 580 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Surface-----	29	29	
Pennsylvanian system:			
Lower series:			
Shale, sandy-----	21	50	
Coal-----	1.5	51.5	
Fire clay-----	7.5	59	
Shale, sandy, blue-----	65	124	

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 10/6W-19J1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Pennsylvanian system:			
Lower series:			
Slate, black-----	3	127	
Coal-----	1	128	
Fire clay-----	3	131	
Sandstone-----	4	135	
Shale, dark-----	--	135	

Well 10/6W-19P1

Type of record: Driller's log.

Altitude: About 570 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	12	12	
Sand and gravel-----	48	60	
Pennsylvanian system:			
Middle series:			
Sandstone, hard-----	5	65	
Lower series:			
Shale, dark-----	40	105	
Coal-----	5	110	W.B.
Shale, dark-----	11	121	
Coal-----	4	125	
Clay-----	10	135	
Shale, dark-----	10	145	
Sandstone-----	9	154	
Limestone-----	3	157	
Sandstone-----	58	215	
Mississippian system:			
Chester(?) series:			
Shale, dark-----	20	235	
Limestone-----	8	243	
Sandstone-----	25	268	
Limestone-----	42	310	
Shale, dark-----	15	325	
Limestone and red and green shale-----	20	345	
Limestone-----	3	348	
Shale, green-----	12	360	T.D. 3,200 ft

Well 10/6W-19R1

Type of record: Driller's log.

Altitude: About 561 feet.

Quaternary system:			
Recent and Pleistocene series:			
Silt, some sand, medium- dense, brown-----	4	4	
Sand, medium, silt, medium, dense, brown----	3	7	
Clay and silt, trace of sand, stiff, green-----	2	9	

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 10/6W-19R1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Silt, some clay, trace of sand, medium-stiff, green-	4.5	13.5	
Silt, organic, trace of sand, loose, green and brown-----	5	18.5	
Silt, organic, trace of sand, medium-dense, green and brown-----	2.5	21	
Sand, fine, some organic silt, medium-dense, green and brown-----	2.5	23.5	
Pennsylvanian(?) system:			
Lower (?) series:			
Shale, sandy, hard, brown and blue-----	3.2	26.7	
Silt, hard, shale, and trace of sand, blue-----	1.1	27.8	

Well 10/6W-20H1

Type of record: Driller's log.

Altitude: About 610 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	17	17	
Pennsylvanian system:			
Middle series:			
Sandstone-----	7	24	
Shale, gray-----	1	25	
Sandstone-----	3	28	
Lower(?) series:			
Shale, gray-----	6	34	
Fire clay-----	7	41	
Shale, gray-----	27	68	
Sandstone-----	6	74	
Shale, gray-----	22	96	
Coal, trace-----	---	96	
Fire clay-----	3	99	
Shale, gray-----	6	105	
Coal-----	1	106	
Fire clay-----	3	109	
Shale, gray-----	16	125	
Coal-----	2	127	
Fire clay-----	3	130	
Shale-----	15	145	

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 10/6W-20L1

Type of record: Driller's log.

Altitude: About 610 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Surface-----	14	14	
Pennsylvanian system:			
Middle(?) series:			
Sandstone-----	13.5	27.5	
Lower(?) series:			
Shale, gray-----	10.5	38	
Shale, sandy, dark-----	8	46	
Sandstone-----	12	58	
Shale, sandy, dark-----	12	70	
Shale, dark-----	28	98	
Coal-----	2	100	
Fire clay-----	3	103	
Shale, dark-----	14	117	
Coal-----	4	121	
Fire clay-----	1	122	
Sandstone-----	10	132	
Shale, sandy, gray-----	3	135	
Slate, black-----	1.5	136.5	
Coal-----	.5	137	
Sandstone-----	10	147	
Shale, gray-----	2	149	
Sandstone-----	21	170	W.B.
Shale, sandy, dark-----	1	171	

Well 10/6W-20L2

Type of record: Driller's log.

Altitude: About 600 feet.

Old well-----	191.5	191.5	
Pennsylvanian system:			
Lower series:			
Slate and dark shale-----	18.5	210	
Sandstone-----	15	225	
Slate-----	6	231	
Shale, gray-----	6	237	
Mississippian system:			
Chester series:			
Sandstone-----	30	267	
Limestone-----	23	290	
Shale, sandy, gray-----	10	300	
Shale, red-----	14	314	
Shale, sandy, gray-----	11	325	
Sandstone-----	6	331	
Shale, sandy, red-----	3	334	
Shale, sandy, gray-----	6	340	
Sandstone, white-----	12	352	"Salt water"

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 10/6W-20L3		Altitude: About 600 feet.	
Type of record: Driller's log.			
Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Surface-----	16	16	
Pennsylvanian system:			
Lower series:			
Shale, gray-----	27	43	
Coal-----	1.5	44.5	
Fire clay-----	2	46.5	
Shale, sandy, dark-----	15	61.5	
Shale, dark-----	23	84.5	
Sandstone, white-----	20	104.5	W.B.
Shale, sandy, gray-----	17	121.5	
Coal-----	4	125.5	
Fire clay and shale-----	5	130.5	
Sandstone-----	10	140.5	
Sandstone, gray-----	4	144.5	
Sandstone-----	30	174.5	
Shale, sandy, dark-----	38	212.5	
Sandstone-----	12	224.5	
Shale, gray-----	.5	225	

Well 10/6W-20P1		Altitude: About 590 feet.	
Type of record: Driller's log.			
Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Surface-----	13	13	
Softpan-----	12	25	
Pennsylvanian system:			
Lower series:			
Shale, brown-----	6	31	
Coal-----	1.5	32.5	
Shale, dark-gray-----	17.5	50	

Well 10/6W-21F1		Altitude: About 590 feet.	
Type of record: Driller's log.			
Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Surface-----	13	13	
Shale-----	7	20	Clay (?)
Shale, sandy, and gravelly-----	3	23	Clay (?), sandy and gravelly
Pennsylvanian system:			
Lower series:			
Shale-----	5	28	
Rock, hard-----	1	29	Limestone (?), hard
Shale-----	36	65	

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 10/6W-21F1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Pennsylvanian system:			
Lower series:			
Coal-----	3	68	
Fire clay-----	3.5	71.5	
Sandstone-----	5.5	77	
Shale, soft, dark-----	8	85	
Sandstone, white-----	12	97	
Shale, sandy, dark-----	3	100	
Slate, black, and coal----	2	102	
Fire clay-----	2	104	
Sandstone-----	1.5	105.5	
Coal-----	2	107.5	
Bottoms, hard-----	2.5	110	
Sandstone, white-----	11	121	
Shale, dark-----	66	187	
Rock, hard-----	2	189	Limestone (?), hard
Shale-----	9	198	
Slate-----	1.5	199.5	
Sandstone, white-----	8	207.5	
Shale, dark-----	75.5	283	
Sandstone, white-----	8	291	
Sandstone-----	26	317	
Mississippian(?) system:			
Chester(?) series:			
Shale, red-----	7	324	
Sandstone, white-----	4	328	"Salt water"

Well 10/6W-21L1

Type of record: Driller's log.

Altitude: About 590 feet.

Quaternary system:			
Recent and Pleistocene series:			
Surface-----	16	16	
Pennsylvanian system:			
Lower series:			
Shale, sandy-----	25	41	
Shale-----	29.5	70.5	
Slate, black-----	1.5	72	
Coal-----	1	73	
Fire clay-----	9	82	
Sandstone-----	1	83	
Shale, dark-----	2.5	85.5	
Coal-----	3.5	89	
Fire clay-----	2.5	91.5	
Sandstone-----	9.5	101	
Coal-----	.5	101.5	
Fire clay-----	3.5	105	
Sandstone, white-----	2.5	107.5	W.B.
Shale, dark-----	2.5	110	

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 10/6W-21L1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Pennsylvanian system:			
Lower series:			
Sandstone, dark-----	14	124	W.B.
Slate, black-----	1	125	
Coal-----	3	128	
Bottoms, hard-----	1	129	
Sandstone, white-----	8.5	137.5	W.B.
Shale, white-----	4	141.5	
Shale, blue-----	18.5	160	

Well 10/6W-22E1

Type of record: Driller's log.

Altitude: About 600 feet.

Quaternary system:			
Recent and Pleistocene series:			
Surface-----	21	21	
Pennsylvanian system:			
Lower series:			
Shale, gray-----	5	26	
Slate, black-----	2	28	
Coal-----	1	29	
Fire clay-----	3	32	
Shale, gray-----	14	46	
Shale, sandy-----	2	48	
Coal-----	.5	48.5	
Fire clay-----	4.5	53	
Sandstone-----	16	69	
Coal-----	2	71	W.B.
Fire clay-----	8	79	
Shale, gray-----	3	82	
Slate, black-----	2	84	
Shale, gray-----	4	86	
Sandstone-----	11	97	

Well 10/6W-22H1

Type of record: Driller's log.

Altitude: About 615 feet.

Quaternary system:			
Recent and Pleistocene series:			
Surface-----	21	21	
Shale, gravelly-----	20	41	Clay (?), gravelly
Shale, gray-----	7	48	Clay (?), gray
Sand-----	1.5	49.5	W.B.
Pennsylvanian system:			
Lower series:			
Shale, gray-----	2.5	52	
Slate, black-----	3	55	
Shale, gray-----	46	101	
Coal-----	1	102	

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 10/6W-22H1--Continued			
Material	Thick- ness (feet)	Depth (feet)	Remarks
Pennsylvania system:			
Lower series:			
Fire clay-----	3	105	
Sandstone-----	14	119	
Shale, gray-----	14	133	
Sandstone-----	2	135	
Shale, gray-----	13	148	
Coal-----	.5	148.5	
Fire clay-----	3.5	152	
Sandstone-----	24	176	
Limestone-----	24	200	
Sandstone-----	2	202	
Shale, gray-----	6	208	
Shale, red-----	4	212	
Shale, gray-----	10	222	
Sandstone-----	12	234	
Shale, gray-----	5	239	
Sandstone-----	2	241	
Shale, gray-----	4	245	
Sandstone-----	5	250	

Well 10/6W-22H2

Type of record: Driller's log.

Altitude: About 615 feet.

Quaternary system:			
Recent and Pleistocene series:			
Surface-----	20	20	
Pennsylvanian system:			
Lower series:			
Shale, dark-----	35	55	
Sandstone-----	10	65	
Shale, sandy, dark-----	5	70	
Sandstone-----	35	105	
Shale, sandy, dark-----	10	115	
Sandstone-----	10	125	W.B.
Shale, sandy, dark-----	5	130	
Sandstone-----	10	140	W.B.
Shale, dark-----	--	140	

Well 10/6W-28A1

Type of record: Driller's log.

Altitude: About 615 feet.

Quaternary system:			
Recent and Pleistocene series:			
Surface-----	17	17	
Pennsylvanian system:			
Lower series:			
Shale, gray-----	12	29	
Limestone-----	5	34	

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 10/6W-28A1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Pennsylvanian system:			
Lower series:			
Shale, dark-----	3	37	
Coal-----	2	39	
Fire clay-----	2	41	
Shale, gray-----	34	75	
Coal-----	3	78	
Fire clay-----	4.5	82.5	
Sandstone-----	3	85.5	
Shale, sandy-----	6.5	92	
Sandstone-----	20	112	
Slate, black-----	5	117	
Coal-----	2	119	
Fire clay-----	1	120	
Shale, sandy, gray-----	15	135	
Shale, dark-----	60	195	
Shale, gray-----	5	200	
Sandstone-----	29	229	W.B.

Well 10/6W-29C1

Type of record: Driller's log.

Altitude: About 590 feet.

Quaternary system:			
Recent and Pleistocene series:			
Top soil-----	17	17	
Quicksand-----	5	22	
Pennsylvanian system:			
Middle(?) series:			
Shale, gray-----	38	60	
Shale, sandy-----	8	68	
Lower(?) series:			
Shale, gray-----	18	86	
Coal-----	3	89	
Fire clay-----	5	94	
Sandstone-----	10	104	W.B.
Shale, black-----	3	107	
Coal-----	3	110	
Shale, sandy-----	4	114	
Sandstone-----	10	124	W.B.

Well 10/6W-29E2

Type of record: Driller's log.

Altitude: About 605 feet.

Quaternary system:			
Recent and Pleistocene series:			
Surface-----	18	18	
Pennsylvanian system:			
Middle(?) series:			
Sandstone, yellow-----	22	40	

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 10/6W-29E2--Continued			
Material	Thick- ness (feet)	Depth (feet)	Remarks
Pennsylvanian system:			
Lower (?) series:			
Slate-----	5	45	
Coal-----	1	46	
Fire clay-----	3	49	
Slate, gray-----	29	78	
Shale, gray-----	22	100	
Coal-----	1	101	
Clay-----	2	103	
Shale, clayey, light-----	25	128	
Limestone, sandy-----	15	143	
Shale, hard, dark-----	24	167	
Shale, light-----	40	207	
Shale, black-----	20	227	
Sandstone, white-----	27	254	W.B.
Limestone, sandy-----	11	265	

Well 10/6W-29N1

Type of record: Driller's log.

Altitude: About 605 feet.

Quaternary system:			
Recent and Pleistocene series:			
Surface-----	20	20	
Pennsylvanian system:			
Lower series:			
Shale, gray-----	6.5	26.5	
Shale, sandy, gray-----	10.5	37	
Sandstone-----	15	52	
Shale, sandy, gray-----	4	56	
Coal-----	2	58	
Fire clay-----	6.5	64.5	
Shale, sandy, gray-----	21	85.5	
Coal-----	.5	86	W.B.

Well 10/6W-29N2

Type of record: Driller's log.

Altitude: About 605 feet.

Quaternary system:			
Recent and Pleistocene series:			
Surface-----	20	20	
Pennsylvanian system:			
Lower series:			
Shale, gray-----	33	53	
Coal-----	2	55	
Fire clay-----	3	58	
Shale, sandy-----	12	70	
Shale, dark-----	20	90	
Sandstone-----	5	95	W.B.
Shale, sandy, gray-----	13	108	

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 10/6W-29N2--Continued			
Material	Thick- ness (feet)	Depth (feet)	Remarks
Pennsylvanian system:			
Lower series:			
Shale, dark-----	10	118	
Coal-----	1	119	
Fire clay-----	3	122	
Sandstone-----	5	127	
Shale, sandy, gray-----	3	130	

Well 10/6W-29N3

Type of record: Driller's log.

Altitude: About 600 ft.

Quaternary system:			
Recent and Pleistocene series:			
Surface-----	14	14	
Hardpan-----	4	18	
Pennsylvanian system:			
Lower series:			
Sandstone, yellow-----	2	20	
Slate, light-blue-----	2	22	
Shale, very sandy, hard, light---	14	36	
Sandstone, gray-----	10	46	
Coal-----	.5	46.5	
Fire clay, white-----	3.5	50	
Shale, gray-----	4	54	
Shale, blue-----	11	65	
Shale, sandy, light-----	10	75	
Slate-----	2	77	

Well 10/6W-30A1

Type of record: Driller's log.

Altitude: About 575 ft.

Quaternary system:			
Recent and Pleistocene series:			
Surface-----	20	20	
Shale, sandy, gray-----	65	85	Sandy clay (?)
Pennsylvanian system:			
Lower series:			
Shale, sandy, white-----	4	89	
Coal-----	.5	89.5	
Fire clay-----	4.5	94	
Sandstone-----	13	107	
Shale, blue-----	88	195	
Sandstone-----	9	204	
Coal-----	1	205	
Fire clay-----	2	207	
Sandstone-----	9	216	
Shale, gray-----	4	220	
Mississippian(?) system:			
Chester(?) series:			
Limestone-----	12	232	

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 10/6W-30A1--Continued			
Material	Thick- ness (feet)	Depth (feet)	Remarks
Mississippian(?) system: Chester(?) series: Sandstone-----	23	255	

Well 10/6W-30A2			
Type of record: Driller's log.		Altitude: About 575 feet.	
Quaternary system:			
Recent and Pleistocene series:			
Surface-----	20	20	
Shale, sandy-----	4	24	Sandy clay (?)
Shale, soft, gray-----	58	82	Soft clay (?)
Sand and gravel-----	3	85	W.B.
Pennsylvanian system:			
Lower series:			
Shale, blue-----	8.5	93.5	
Coal-----	.5	94	
Fire clay-----	5	99	
Sandstone-----	--	99	

Well 10/6W-30B2			
Type of record: Driller's log.		Altitude: About 576 feet.	
Quaternary system:			
Recent and Pleistocene series:			
Surface-----	19	19	
Shale, sandy-----	42	61	Sandy clay (?)
Shale, soft, gray-----	21.5	82.5	Soft clay (?)
Coal-----	1	83.5	
Sand and gravel-----	2.5	86	W.B.

Well 10/6W-30B3			
Type of record: Driller's log.		Altitude: About 570 feet.	
Quaternary system:			
Recent and Pleistocene series:			
Surface-----	11.5	11.5	
Hardpan-----	8.5	20	
Sand and gravel-----	1	21	
Hardpan-----	.8	29	
Sand and gravel-----	2	31	
Hardpan, sandy streaks----	14	45	
Pan, soft, smooth-----	32	77	
Pennsylvanian system:			
Lower series:			
Shale, gray-----	3	80	
Clay-----	1.5	81.5	
Shale, sandy, gray-----	10.5	92	
Coal-----	2.5	94.5	

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 10/6W-30B3--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Pennsylvanian system:			
Lower series:			
Clay-----	1.5	96	
Shale, gray-----	4	100	
Sandstone-----	2	102	
Shale, dark-gray-----	.5	102.5	
Coal-----	3	105.5	
Clay-----	4.5	110	
Shale, gray-----	7	117	
Shale, sandy, gray-----	3	120	
Sandstone-----	1	121	
Shale, sandy, gray-----	2	123	
Slate, black-----	3	126	

Well 10/6W-30D1

Type of record: Driller's log.

Altitude: About 570 feet.

Quaternary system:			
Recent and Pleistocene series:			
Surface-----	16	16	
Hardpan-----	8	24	
Softpan-----	13.5	37.5	
Pennsylvanian system:			
Lower series:			
Sandstone-----	3.5	41	
Shale, sandy, gray-----	26	67	
Shale, sandy, dark-gray-----	5	72	
Shale, sandy, gray-----	10	82	W.B.

Well 10/6W-30D2

Type of record: Driller's log.

Altitude: About 560 feet.

Quaternary system:			
Recent and Pleistocene series:			
Surface-----	13	13	
Hardpan-----	13	26	
Softpan-----	43	69	
Sand and gravel-----	16	85	
Pennsylvanian system:			
Lower series:			
Shale, gray-----	6	91	
Shale, sandy, gray-----	17	108	
Sandstone-----	15	123	
Shale, sandy, gray-----	23	146	W.B.
Sandstone-----	2	148	
Shale, sandy, gray-----	14	162	
Record missing-----	78	240	

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 10/6W-30G1

Type of record: Driller's log. Altitude: About 580 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Clay-----	12	12	
Hardpan-----	64	76	
Shale-----	4	80	Clay (?)
Gravel-----	2	82	W.B.

Well 10/6W-30G2

Type of record: Driller's log. Altitude: About 580 feet.

Quaternary system:			
Recent and Pleistocene series:			
Surface-----	14	14	
Hardpan-----	28	42	
Pennsylvanian system:			
Lower series:			
Shale, gray-----	9	51	
Shale, dark-gray-----	1	52	
Shale, sandy, gray-----	12	64	
Coal-----	2	66	
Clay-----	2	68	
Shale, sandy, gray-----	20	88	
Coal-----	2	90	

Well 10/6W-30H1

Type of record: Driller's log. Altitude: About 595 feet.

Quaternary system:			
Recent and Pleistocene series:			
Sand-----	7	7	
Drift-----	14	21	
Hardpan, gray-----	20	41	
Pennsylvanian system:			
Lower(?) series:			
Slate, black-----	1	42	
Fire clay-----	5	47	
Shale, sandy-----	--	47	

Well 10/6W-30J2

Type of record: Driller's log. Altitude: About 590 feet.

Quaternary system:			
Recent and Pleistocene series:			
Clay, yellow-----	17	17	
Hardpan-----	4	21	
Mud, blue, and sand-----	21	42	

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 10/6W-30J2--Continued			
Material	Thick- ness (feet)	Depth (feet)	Remarks
Pennsylvanian system:			
Middle(?) series:			
Shale, soft-----	13	55	
Shale, sandy-----	32	87	W.B.
Lower series:			
Slate, blue-----	4	91	
Coal-----	1	92	W.B.
Shale, dark-----	10	102	
Coal-----	2	104	
Fire clay-----	3	107	
Limestone, broken-----	4	111	W.B.

Well 10/6W-31C1			
Type of record: Driller's log.			Altitude: About 640 feet.
Quaternary system:			
Recent and Pleistocene series:			
Surface, sandy-----	25	25	
Pennsylvanian system:			
Lower series:			
Limestone-----	7	32	
Shale, gray-----	16	48	
Slate, black-----	4.5	52.5	
Coal-----	1.5	54	
Fire clay-----	5	59	
Shale, gray-----	30	89	
Sandstone-----	32	121	
Coal, trace-----	--	121	
Sandstone and shale-----	23	144	
Coal, trace-----	--	144	W.B.
Sandstone-----	9	153	W.B.
Shale, light-gray-----	3	156	
Sandstone and shale-----	19	175	
Coal-----	3.5	178.5	W.B.
Fire clay-----	4.5	183	
Shale, gray-----	7	190	

Well 10/6W-31K1			
Type of record: Driller's log.			Altitude: About 670 feet.
Quaternary system:			
Recent and Pleistocene series:			
Surface, sandy-----	15	15	
Pennsylvanian system:			
Middle series:			
Sandstone-----	15.5	30.5	
Coal-----	7	37.5	
Clay-----	7.5	45	
Limestone-----	5.5	50.5	

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 10/6W-31K1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Pennsylvanian system:			
Middle series:			
Shale, sandy, gray-----	10	60.5	W.B.
Shale, dark-gray-----	10.5	71	
Sandstone-----	2	73	
Lower? series:			
Coal-----	2	75	
Shale, dark-gray-----	5	80	
Shale, sandy, dark-gray-----	20	100	

Well 10/6W-31L1

Type of record: Driller's log.

Altitude: About 650 feet.

Quaternary system:			
Recent and Pleistocene series:			
Surface-----	18	18	
Hardpan-----	7	25	
Pennsylvanian system:			
Middle series:			
Coal, soft-----	5	30	
Coal, clay, and shale-----	10	40	
Sandstone-----	4.5	44.5	
Shale, light-gray-----	19.5	64	
Lower? series:			
Slate, black-----	7	71	
Shale, sandy, gray-----	82	153	
Sandstone-----	4	157	
Shale, sandy, gray-----	3	160	
Shale, gray-----	13	173	
Coal-----	1	174	
Clay-----	3	177	
Shale, light-----	5	182	
Shale, dark-gray-----	3	185	
Shale, light-----	8	193	
Shale, sandy, gray-----	2	195	
Sandstone-----	9	204	
Shale, dark-gray-----	8	212	
Limestone-----	4.5	216.5	
Shale, limy-----	.5	217	
Sandstone-----	20	237	

Well 10/6W-31P1

Type of record: Driller's log.

Altitude: About 635 feet.

Quaternary system:			
Recent and Pleistocene series:			
Surface-----	28	28	

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 10/6W-31P1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Pennsylvanian system:			
Middle? series:			
Shale, gray-----	25	53	
Lower? series:			
Slate-----	4	57	
Coal-----	1.5	58.5	
Fire clay-----	5	63.5	
Shale, gray-----	16.5	80	
Sandstone-----	4	84	
Sandstone and shale-----	66	150	
Coal-----	1	151	
Fire clay-----	2	153	
Sandstone-----	6	159	W.B.
Shale, blue-----	3	162	
Shale, sandy, blue-----	--	162	

Well 10/6W-32K1

Type of record: Driller's log.

Altitude: About 610 feet.

Quaternary system:			
Recent and Pleistocene series:			
Surface-----	18	18	
Pennsylvanian system:			
Lower series:			
Shale, gray-----	18	36	
Shale, boots, gray-----	28	64	
Slate, black-----	2	66	
Coal-----	3	69	
Fire clay-----	2	71	
Shale, boots, gray-----	24	95	
Shale, sandy, boots, gray--	2	97	
Sandstone, gray-----	3	100	
Slate, black-----	8	108	
Shale, dark-gray-----	19	127	
Shale, sandy, dark-gray----	7	134	
Shale, sandy, light-gray---	10	144	
Shale, sandy, dark-gray----	10	154	
Coal-----	1	155	
Sandstone, gray-----	12	167	
Shale, sandy, gray-----	4	171	
Sandstone, gray-----	14	185	W.B.
Shale, dark-gray-----	15	200	
Limestone, dark-gray-----	--	200	

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 10/6W-33N1

Type of record: Driller's log.

Altitude: About 590 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Surface clay-----	15.5	15.5	
Pennsylvanian system:			
Lower series:			
Shale, gray-----	15.7	31.2	
Shale, blue-----	2.2	33.4	
Coal-----	2.1	35.5	
Fire clay-----	3.1	38.6	
Sandstone and gray shale-----	11.5	50.1	
Shale, blue-----	3.5	53.6	
Coal-----	3.1	56.7	
Fire clay and shaly sandstone-----	11.4	68.1	
Shale, blue-----	14.1	82.2	
Fire clay, sandstone, and shale-----	3.8	86	

Well 10/6W-33P1

Type of record: Driller's log.

Altitude: About 600 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Surface clay-----	24	24	
Gravel-----	3	27	
Boulder clay-----	5.9	32.9	
Pennsylvanian system:			
Lower series:			
Shale, gray-----	8.1	41	
Fire clay-----	11.5	52.5	
Shale, gray-----	8.5	61	
Shale, blue, with plates of sandstone-----	6.8	67.8	
Coal-----	2.4	70.2	
Fire clay-----	.6	70.8	

Well 10/7W-1D1

Type of record: Driller's log.

Altitude: About 550 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Surface-----	16	16	
Sand, yellow-----	4	20	
Softpan-----	5	25	
Sand and gravel-----	2	27	
Hardpan-----	2	29	

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 10/7W-1D2

Type of record: Driller's log. Altitude: About 550 feet.

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Surface-----	12	12	
Shale, rotten-----	9	21	Clay (?)
Quicksand-----	6	27	
Pea gravel, fine-----	2	29	W.B.
Shale, rotten-----	36	65	Clay (?)
Sand-----	30	95	
Pennsylvanian system:			
Lower series:			
Coal-----	1	96	
Fire clay-----	1	97	
Shale, gray-----	15	112	
Slate, black-----	4	116	
Coal-----	2	118	
Fire clay-----	3	121	
Shale, gray-----	12	133	
Sandstone-----	6	139	W.B.
Shale, gray-----	3	142	

Well 10/7W-1J1

Type of record: Driller's log. Altitude: About 560 feet.

Quaternary system:			
Recent and Pleistocene series:			
Surface-----	10	10	
Muck, soft, light-----	15	25	
Softpan, yellow-----	10	35	
Hardpan, gray with blue gravel streaks-----	30	65	
Softpan, dark-yellow-----	4	69	
Pennsylvanian system:			
Lower series:			
Slate, soft, blue-----	1	70	
Sandstone, white-----	4	74	

Well 10/7W-2K1

Type of record: Driller's log. Altitude: About 545 feet.

Quaternary system:			
Recent and Pleistocene series:			
Surface-----	18	18	

Table 2.--Selected well logs, Clay County, Indiana--Continued

Well 10/7W-2K1--Continued

Material	Thick- ness (feet)	Depth (feet)	Remarks
Quaternary system:			
Recent and Pleistocene series:			
Hardpan-----	50	68	
Gravel-----	--	68	W.B.

Well 10/7W-3A1

Type of record: Driller's log.

Altitude: About 570 feet.

Quaternary system:			
Recent and Pleistocene series:			
Surface-----	20	20	
Hardpan-----	18	38	
Sand and gravel-----	2	40	
Hardpan-----	12	52	
Sand, dirty-----	6	58	
Pennsylvanian system:			
Lower series:			
Shale, blue-----	62	120	
Sandstone, gray-----	5	125	W.B.

Well 10/7W-4E1

Type of record: Driller's log.

Altitude: About 580 feet.

Quaternary system:			
Recent and Pleistocene series:			
Surface-----	12	12	
Hardpan-----	17	29	
Sand, yellow-----	2	31	
Pennsylvanian system:			
Middle (?) series:			
Sandstone, brown-----	26	57	W.B.
Coal-----	--	57	

Well 10/7W-5B1

Type of record: Driller's log.

Altitude: About 575 feet.

Quaternary system:			
Recent and Pleistocene series:			
Surface-----	15	15	
Hardpan, gray-----	15	30	
Pennsylvanian system:			
Middle series:			
Sandstone, clayey, yellow-----	38	68	
Sandstone, gray-----	5	73	
Sandstone, white-----	5	78	
Sandstone, yellow-----	8	86	