Illinois Preliminary Geologic Map
IPGM Pulaski-G

1:24,000

Geology of Pulaski Quadrangle

Pulaski County, Illinois

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What this map shows and how it was made

This map shows the geologic materials that lie at or close to the ground surface in the Pulaski Quadrangle. Some of the youngest materials that occur at the surface are not shown on the map. These include the wind-blown silt, or loess, that covers nearly all upland areas of the quadrangle to depths of 15 to more than 30 feet. Although not mapped, the loess units (identified as the Peoria, Roxana, and Loveland Silts) are shown in the stratigraphic column and accompanying unit descriptions. Stream sediments identified as the Cahokia Formation are mapped in upland areas of the quadrangle where the streams have distinct level to gently sloping bottom lands. In the Cache Valley, which covers a large area of the northwestern part of the quadrangle, the Cahokia Formation overlies older sediments of the Equality and Henry Formations, and the map indicates the generalized distribution of all three.

The Pulaski Quadrangle is a difficult place for geologic mapping. The geologic units beneath the Cahokia Formation and the loess are exposed in only a few deep ravines, stream cuts, and artificial excavations. Outcrops discovered during field work or described by previous geologists are indicated on the map by green triangles. These few outcrops were supplemented by data from wells on public file at the ISGS. These wells include:

Residential and municipal water wells are most numerous, but least informative. For most, the only log is a driller's log that is cursory at best. Wherever possible, well locations were verified by interviewing current landowners; but some locations are probably still inaccurate. Samples (cuttings) from some water wells were submitted to the ISGS and logged by geologists. Accuracy of such sample logs is limited by uncertainty as to how samples were collected and labeled and by the fact that the cuttings have been crushed by the drill and frequently mixed with caved material and other contaminants.

Engineering test borings were made by the Illinois Department of Transportation (IDOT) to determine foundation conditions for bridges and highway overpasses. The original samples were either taken directly from augers or were split-spoon samples, the latter being more representative of the materials drilled. Logs are moderately detailed, but focus on soil and engineering properties rather than geologic features. In addition to material descriptions, most IDOT logs tabulate physical data, including penetration rate, unconfined compressive strength, and water content of the samples. Samples from a few IDOT boreholes were acquired and logged by ISGS geologists.

Two oil-test holes drilled in the quadrangle, and seven others close to the quadrangle provide the only detailed record of bedrock strata to depths of nearly 3,000 feet. All of these wells have sample logs made by ISGS geologists, and are subject to the same inaccuracies as sample logs from water wells.

Six stratigraphic test holes were drilled specifically for the mapping project. These holes (identified by tan circles on the map) range in depth from 28 to 80 feet, and yielded continuous core samples for study. Samples for these holes are stored at the ISGS Samples Library in Champaign.

In the Cache Valley area, geologic mapping is based on a combination of borehole data, inferences from topography and landforms, and the soil map of Pulaski County by Parks and Fehrenbacher (1968)

General Geologic History

The bedrock foundation of the Pulaski Quadrangle is formed of rocks more than 330 million years old assigned to the Mississippian and older periods of geologic time. As shown by the stratigraphic column and unit descriptions, these rocks include limestone, dolomite, chert, shale, and sandstone. All of these strata originated as sediments deposited within or around the margins of warm, shallow seas that formerly occupied much of the North American Midcontinent.

Probably during Cretaceous time, the bedrock of the Pulaski area was raised and tilted toward the northeast by the uplift of the Pascola Arch, which was centered in the "bootheel" area of Missouri. Thus these rocks dip gently northeast, away from the Pascola Arch and toward the Illinois Basin. The sea withdrew from the region, and the bedrock was deeply eroded, leaving Devonian rocks exposed at the surface in the southwestern part of the quadrangle, and Mississippian rocks in the northeastern part, during the Cretaceous Period. These bedrock exposures subsequently were covered by younger sediments.

During the late Cretaceous Period, about 70 to 80 million years ago, the region that is now the lower Mississippi Valley was downwarped into a deep trough, open to the south. This trough, known as the Mississippi Embayment, became a northeast-trending arm of the Gulf of Mexico, extending into southernmost Illinois. The Cretaceous Post Creek, McNairy and Owl Creek Formations and the Tertiary Clayton, Porters Creek, and Wilcox Formations were deposited in bays, deltas, and tidal flats bordering the Embayment seaway. Following deposition of the Wilcox about 50 million years ago, the sea again withdrew from southern Illinois and erosion resumed.

The next episode of sedimentation took place late in Tertiary time (roughly 2 to 10 million years ago) when big rivers, related to the ancestral Mississippi and Tennessee Rivers, coursed across the lowlands of the northern Mississippi Embayment. These rivers deposited coarse red and brown sand and gravel now known as the Mounds Gravel. The flood plain was then eroded to approximately the 400-foot elevation contour of today, such that in most of the map area the Mounds Gravel is found at or above 400 feet above sea level. Toward the end of this episode, the ancestral Tennessee River eroded a broad valley near the modern Ohio River from Paducah, Kentucky to Cairo, Illinois; and passing through the southeast corner of the Pulaski Quadrangle. Mounds Gravel was deposited upon the floor of this valley. Then the ancestral Tennessee apparently shifted, leaving only small, meandering creeks within its older valley. The mostly fine-grained deposits of these smaller streams are now mapped as the Metropolis Formation (Nelson et al., 1999b).

While these events were taking place, the Ohio River was flowing far north of its present course through the Teays-Mahomet bedrock valley in east-central Illinois. When Pleistocene continental glaciers advanced across central Illinois, the Teays-Mahomet Valley was buried in glacial drift and the Ohio had to seek a southern route. Its new course lay close to the modern one, but in southern Illinois the Ohio carved out a deep and wide valley now known as the Cache Valley. Flooded periodically by glacial meltwater, the Ohio deposited thick sand and gravel (Pearl and Henry Formations) within the main Cache Valley, and finer silt and clay (Equality Formation) in lowlands bordering the main valley. It was not until near the end of the last ice age, about 8,000 to 12,000 years ago, that the Ohio River abandoned the Cache Valley for its present course (Masters and Reinertsen, 1987; Esling et al., 1989).

Following each episode of glacial retreat and melt-off during the Pleistocene, the wind carried vast quantities of dust from the exposed river bottom lands across the entire Midwestern region. This wind-blown silt now constitutes the loess that blankets uplands of the Pulaski Quadrangle to depths greater than 30 feet in places.

At present, most of the Pulaski area is undergoing gradual erosion. The only areas where new sediments accumulate are bottom lands of streams and rivers (where not confined by artificial levees). Alluvial deposits, largely silt, that have formed since the end of the final ice age are mapped as the Cahokia Formation.

Faults and Earthquakes

Faults are fractures in the earth's crust along which movement has taken place. Many faults are the products of deep-seated stresses and when they move, earthquakes are produced. Pulaski lies only about 80 miles north of New Madrid, Missouri, where during the winter of 1811-1812, took place the greatest series of earthquakes in central North America during historic times. New Madrid lies near the center of a larger region of ongoing seismic activity known as the New Madrid Seismic Zone. The northern terminus of the New Madrid Seismic Zone is near Cairo, Illinois within 20 miles of the map area.

Hence, faults are a matter of concern in the Pulaski area. Unfortunately, faults are difficult to map given the scarcity of outcrops and good well records in the area. Only one fault is shown on the geologic map, and its existence must be considered questionable. It is drawn along the east edge of the quadrangle in Secs. 20 and 29, T15S, R1E. The evidence consists of abrupt differences in elevation of Mississippian and Devonian bedrock formations among four wells in the eastern portion of the Pulaski and western Olmsted quadrangles. The best marker formation identified on these well logs is the New Albany Shale. Comparing the logs of the four wells, the New Albany appears to be downthrown 125 to 300 feet on the southeast side of a fault that strikes north-northeast. Also, water-well data in Section 29 suggest that the Mounds Gravel is downthrown 30 to 50 feet on the southeast side of the same fault. If the Mounds Gravel actually is displaced by the fault, this could mean the fault has been active within the last 2 million years.

Records of several wells in and near the village of Pulaski raise the suspicion of faults. There appear to be substantial differences here in the elevation of Devonian and Mississippian formations and also in the elevation of the bedrock surface, as shown by red structure contour lines on the geologic map. Samples from the Illinois Central Railroad well at Pulaski suggest that limestone formations have been silicified, possibly by hydrothermal or hot-spring activity arising along a fracture zone. Shale samples from this well possibly represent the Ordovician Maquoketa Shale, which if correctly identified, would be upthrown some 1,600 feet relative to Devonian formations in adjacent wells. However, the samples and logs of all of the relevant wells are too doubtful to allow any definite statements on the geology here.

In an unpublished field note (1958, ISGS open files), Wayne Pryor briefly mentioned a small vertical fault he observed displacing "gray to brown clayey silt with limonite concretions" near Kay's Lake in the SW 1/4 SE 1/4 SE 1/4 of Sec. 9, T16S, R1W. Pryor interpreted the faulted silt as Quaternary colluvium, and did not record the strike trend of the fault. We visited the area described by Weller and did not locate the outcrop. Moreover, Pryor and Ross (1962) did not mention the fault. A tectonic fault displacing loess or colluvium would be a significant find, but it appears likely that the feature Pryor observed was the product of landsliding or slumping.

During September of 2001, the ISGS conducted seismic reflection surveys in the Olmsted Quadrangle (bordering the Pulaski Quadrangle on the east). The resulting seismic profiles indicate that numerous large faults are present in both bedrock and Cretaceous to Tertiary deposits. Most of these faults went undetected through previous mapping using outcrops and well data. Given these findings, absence of faults in the Pulaski Quadrangle would be surprising.

In summary, direct evidence for faults in the Pulaski Quadrangle is meager. Data from neighboring quadrangles indicates that many faults are present, but when these were last active and whether they are still capable of producing earthquakes, are subjects for speculation.

Regardless of whether any faults in the Pulaski Quadrangle are capable of producing tremors, the New Madrid Seismic Zone remains of concern. The Pulaski area was sparsely populated in 1812 and no reports are available of the effects of the 1811-1812 quakes here. Street and Nuttli (1984) indicated modified Mercalli intensities of VII and VIII during the largest earthquakes of 1811 and 1812 at the stations nearest to Pulaski such as Cairo, Illinois and Cape Girardeau, Missouri.

In 1895, an earthquake of estimated Richter magnitude 6.2 struck near Charleston, Missouri, about 20 miles southwest of Pulaski. The damage at Cairo was considerable: hundreds of chimneys toppled, the public library and other masonry buildings seriously damaged, and a bridge pier cracked. It was also reported that soil liquefaction took place in Missouri just across the river from Cairo. This damage was assigned a modified Mercalli intensity of VIII (Hopper and Algermissen, 1980). The effects of a magnitude 7.5 or 8.0 earthquake at the northern end of the New Madrid zone (near Cairo) can only be imagined. Keep in mind that an increase of 1.0 on the Richter scale entails a ten-fold increase in energy.

Local geology has a large effect on the ground motion and intensity of an earthquake. Shaking is amplified least on bedrock and most strongly on loosely compacted, water-saturated soil such as alluvium. The Pulaski Quadrangle contains no areas having bedrock at the surface. The map by Bauer et al. (1999) indicates that in uplands underlain by Metropolis, Mounds, Wilcox, Porters Creek, and McNairy Formations, earthquake ground motion may be amplified 1.5 to 2.4 times. Stronger amplification, and possible liquefaction of soil, may take place in the Cache Valley. The risk of liquefaction is greatest in areas where sand of the Henry Formation is close to the surface, and where the water table is high.

Economic Geology

Clay. The Porters Creek Clay has been mined in Pulaski County as a source of absorbent clay for more than a century. Activity has centered around Olmsted, a few miles east of the map area, where large deposits of Porters Creek lie under thin overburden. Porters Creek

Clay is ideally suited for making products such as cat litter and clay for absorbing oil spills. At the time of mapping, one clay pit was active west of Olmsted, and the Oil-Dri Corp. operated a processing plant at Mounds, immediately south of the map area.

Large deposits of Porters Creek Clay occur within the map area. The most attractive area for mining seems to be near Villa Ridge, including parts of Secs. 25 and 33-36, T15S, R1W. Here the clay is more than 50 feet thick, and in many places it is covered only by loess (silt), which is easy to excavate. Under the higher hills, the Mounds Gravel is added to the overburden. The Porters Creek pinches out a few miles north of Villa Ridge, where it was eroded before the Mounds Gravel was deposited. Southward from Villa Ridge, the Porters Creek gradually drops to lower elevation, and the Wilcox Formation is added to its overburden. Near Spencer Heights, the top of the Porters Creek is below the flood plain. The clay is absent in the southeastern part of the quadrangle, where the Metropolis Formation is mapped at the surface.

Sand and Gravel. The Mounds Gravel has been mined in many small pits in southern Illinois and used for surfacing secondary roads, lanes, and driveways. Although the Pulaski Quadrangle contains extensive

gravel deposits, little mining activity has occurred here. The only gravel pit on record operated some 40 years ago near U.S. Rt. 51 south of Villa Ridge; this pit has been backfilled and landscaped. Elsewhere in southern Illinois, gravel mining is a part-time activity, as demand is not currently high enough to sustain full-time or permanent operations. Some factors that may have suppressed gravel quarrying in the map area are (1) the loess overburden is unusually thick, commonly being 15 to more than 30 feet thick, and (2) particularly in the southern part of the quadrangle, the Mounds seems to contain more sand and less gravel than it does in nearby areas.

Oil and Gas. Two test holes for oil and gas are on record within the Pulaski Quadrangle, and several others have been drilled near the map area. In 1954 the Vick Oil Company drilled two test holes, the No. 1 Boyd and No. 1 Roberts, both in the southeastern part of the map area in Sec. 5, T16S, R1E. The Boyd well was drilled to a total depth of 1,366 feet in the Bailey Limestone (Lower Devonian), whereas the Roberts well was drilled to a depth of 2,189 feet in the Plattin Limestone (Middle Ordovician). Both holes were plugged and abandoned, and no shows of oil were reported. Sample logs from both holes are on file at the ISGS, and the samples themselves reside at the ISGS Samples Library.

The ISGS has records of seven additional petroleum test holes drilled within two miles of the Pulaski Quadrangle. All were plugged and abandoned, but two encountered shows of oil. The R.G. Williams #1 Richey (also written as Rickey) test in Sec. 9, T15S, R1E, Olmsted Quadrangle, reported shows of oil in the Plattin Limestone (Ordovician). Oil-stained samples were logged in the Bailey Limestone (Lower Devonian) in the Cache Oil Co. #1 Moses test hole, in Sec. 17, T16S, R1W, Cairo Quadrangle. Both shows are rather curious, as no oil production has been achieved from the Bailey or the Plattin anywhere in the Illinois Basin, and these formations have never been cited as potential source rocks. Possibly, oil migrated into the Bailey and Plattin along faults or fractures.

Hydrocarbon potential of the Pulaski area is difficult to evaluate. The nearest production is more than 40 miles to the north, in Jackson and Williamson Counties, Illinois. Bedrock geology is poorly known, but large faults and folds are suspected that could produce structural traps. An anticline mapped in the Dongola Quadrangle to the north (Nelson et al., 1999) might extend into the Pulaski Quadrangle. Another unknown factor is possible deep-seated igneous and hydrothermal activity that is believed responsible for widespread silicification (Berg and Masters, 1995). This could mean higher heat flow, higher maturation, driving hydrocarbons to the margins of the heat source. Unaltered and unfractured rocks, surrounding the margins of the silica district may offer the best hope for oil and gas.

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PULASKI QUADRANGLE - LIST OF WELLS FROM WHICH GEOLOGIC INFORMATION WAS OBTAINED

Number refers to ISGS county number or IDOT boring number, as appropriate. All water-well locations were field-checked by the authors. In the case of Illinois Department of Transportation (IDOT) bridge borings, generally there are two or more borings per site. The information listed here is for the deepest boring at each site.

T. 14S., R.1E.

Number	Operator	Farm or Site	Type of Well	Location	Sec.	T.D.	Formation at T.D.	Type of Log(s)
3038	IDOT	drainage ditch	bridge boring	700' SL, 1900' EL	31	76'	Equality	engineer's
20368	J. Beanland	Mark Taake	water well	2900' SL, 1400' WL	32	113'	limestone	driller's

T. 15S., R. 1E.

Number	Operator	Farm or Site	Type of Well	Location	Sec.	T.D.	Formation at T.D.	Type of Log(s)
3059	IDOT	drainage ditch	bridge boring	0' NL, 0' WL	5	58.5'	McNairy?	engineer's
3113	IDOT	tributary	bridge boring	2600' NL, 1600' WL	6	51'	McNairy?	engineer's
20239	C.M. Luton	Bob Blanchard	water well	1600' SL, 1750' EL	6	40'	Mounds Gravel	driller's
	ISGS	R.W. Taake	stratigraphic	2400' SL, 2400' EL	6	60'	McNairy	sample log
20334	C.M. Luton	Arthur Helton	water well	1100' SL, 1750' EL	7	57'	Mounds Gravel	driller's
20240	C.M. Luton	F. Otero	water well	500' SL, 950' EL	7	54'	Mounds Gravel	driller's
20218	W.E. Sergent	Larry Owens	water well	2600' SL, 2900' EL	7	510'	broken rock	driller's
	ISGS	#1 G. Bankson	stratigraphic	2300' SL, 2800' WL	7	28.3'	Mounds Gravel	sample log
	ISGS	#2 G. Bankson	stratigraphic	1700' SL, 800' WL	7	40'	McNairy	sample log
20580	R. Beanland	Freeman Collier	water well	1000' NL, 2100' WL	17	530'	chert	driller's
20350	C.M. Luton	Simmons L. & C.	water well	2150' NL, 2200' WL	17	80'	Porters Creek Clay	driller's
3116	IDOT	tributary	bridge boring	2650' SL, 400' EL	18	66'	McNairy	engineer's
20508	L. Beanland	Gary Lefevre	water well	2450' SL, 2500' EL	18	62'	Porters Creek Clay	driller's
3042	IDOT	Hodges Creek	bridge boring	2700' NL, 2200' EL	19	75'	McNairy	driller's
20544	L. Beanland	Reba Waddy	water well	2550' NL, 2400' WL	19	75'	Porters Creek Clay	driller's
20480	W.E. Sergent	John Carol	water well	1600' SL, 3000' WL	20	575'	Middle Devonian	driller's
20339	C.M. Luton	Edward Walters	water well	2600' NL, 2650' WL	20	50'	Mounds Gravel	driller's
38	W.R. White	#1 John Goza*	oil test	990' SL, 1650' EL	20	1,150'	Clear Creek	sample log
20448	Paul Horman	Arthur Ervin	water well	2700' NL, 3000' WL	29	71'	Porters Creek Clay	driller's
20509	Paul Horman	Bruce Giltner	water well	2650' NL, 2350' WL	29	56'	Mounds Gravel	driller's
20250	C.M. Luton	A.M. Atherton	water well	2100' SL, 950' EL	30	49'	Porters Creek Clay	driller's
20308	C.M. Luton	John Manley	water well	200' NL, 2500' WL	30	57'	Porters Creek Clay	driller's
20309	C.M. Luton	Levern Estes	water well	100' SL, 900' WL	31	65'	Porters Creek Clay	driller's
20274	C.M. Luton	John Mathis	water well	1400' SL, 250' WL	31	52'	Porters Creek Clay	driller's
20449	Paul Horman	Richard McMunn	water well	550' NL, 1050' EL	31	63'	Porters Creek Clay	driller's

* This well is just outside the Pulaski Quadrangle

T. 15S, R.1W.

32	IDOT	Eastwood Rd./I-57	bridge boring	1320' SL, 0' EL	1	55.5'	McNairy	engineer's
3085	IDOT	Briar Creek	bridge boring	1300' SL, 1950' EL	1	56'	Henry	engineer's
	ISGS	Gerald Thurston	stratigraphic	900' SL, 1700' EL	2	35'	McNairy	sample log
3026	IDOT	county rd/Mill Creek	bridge boring	1250' NL, 300' EL*	6	71'	Henry	engineer's
20199	J. Beanland	Milo Thurston	water well	2550' SL, 2600' WL	8	111'	Henry	driller's
2009	IDOT	Briar Creek	bridge boring	2400' SL, 2400' EL	10	81'	Equality	engineer's
20248	R. Beanland	Gefford Wood	water well	2600' SL, 1300' EL	11	300'	McNairy	driller's
20513	L. Beanland	Darrell Adams	water well	1200' NL, 1800' WL	12	70'	gravel	driller's
20311	C.M. Luton	William Sharp	water well	100' SL, 2550' WL	12	60'	Mounds Gravel	driller's
20219	J. Beanland	Janet Williams	water well	950' SL, 1800' WL	12	155'	McNairy	driller's
33	IDOT	Pulaski Rd./ I-57	bridge boring	950' SL, 150' EL	13	66'	McNairy	engineer's
20315	C.M. Luton	Raymond Starling	water well	1500' NL, 1900' EL	13	50'	Porters Creek Clay	driller's
3084	IDOT	Sow Creek	bridge boring	1300' SL, 2000' EL	14	61'	McNairy	engineer's
20436	Paul Horman	Charles Jones	water well	1200' SL, 2400' EL	14	56'	McNairy	driller's
	ISGS	Hendricks	stratigraphic	1550' SL, 450' WL	14	60'	McNairy	sample log
6007	IDOT	Pulaski city street	bridge boring	1600' NL, 1000' WL	15	76'	black shale	engineer's
9	Weldon Wells	Illinois Central R.R.	Water well	990' NL, 1650' WL	15	365'	bedded chert	sample log
20268	McRaven	Pulaski city well	water well	1400' NL, 1350' WL	16	218'	Lower Devonian	sample log
20701	IDOT	cty rd/Plski Slough	engineering	1150' SL, 0' EL	20	61'	Henry	engineer's
20384	R. Beanland	John Crain	water well	100' NL, 1420' EL	21	145'	Middle Devonian	driller's
20484	R. Beanland	Wayman Butler	water well	100' NL, 300' EL	21	85'	limestone	driller's
20536	Paul Horman	Marion Parker	water well	650' NL, 2500' WL	22	68'	McNairy	driller's
3110	IDOT	Sow Creek	bridge boring	1500' NL, 2650' WL	23	91'	Equality	engineer's
131	W.E. Sergent	Homer Essex	water well	400' SL, 1500' EL	23	285'	broken rock	driller's
20515	R. Beanland	Rick Healey	water well	2550' NL, 2300' EL	24	60'	Mounds Gravel	driller's
20386	C. Kohnen	P. Robinson	water well	500' SL, 2550' EL	24	59'	Porters Creek Clay	driller's
20547	R. Beanland	Jerry Williams	water well	150' NL, 300' WL	25	60'	McNairy	driller's
3097	IDOT	Boar Creek	bridge boring	1400' SL, 2700' EL	26	90.5'	McNairy	engineer's
12	Weldon Wells	J.H. Aldrich	water well	500' SL, 500' EL	26	470'	Lower Devonian?	sample log
20364	W.E. Sergent	Paul Helman	water well	250' SL, 2600' EL	26	340'	Dutch Creek?	driller's
54	Weldon Wells	A.O. Paulich	unknown	900' SL, 1600' WL	27	265'	Lower Devonian?	sample log
35	IDOT	Boar Creek	bridge boring	1450' NL, 2500' EL	27	86.5'	Equality	engineer's
5006	IDOT	unnamed creek	bridge boring	0' SL, 2000' EL	27	71'	McNairy	engineer's

3077	IDOT	drainage ditch	bridge boring	0' SL, 1100' EL	27	66.5'	Equality	engineer's
3115	IDOT	Boar Creek	bridge boring	900' SL, 0' WL	28	81'	gravel	engineer's
20485	R. Beanland	Nathan Johnson	water well	700' SL, 100' WL	28	100'	Lower Devonian?	driller's
20458	L. Beanland	Darrell Blake	water well	2400' SL, 100' EL	29	110'	Lower Devonian?	driller's
20486	R. Beanland	Herman Jeter	water well	1300' SL, 350' EL	29	128'	Lower Devonian?	driller's
3118	IDOT	tributary	bridge boring	0' SL, 0' WL	33	106'	McNairy	engineer's
20200	J. Beanland	Edward Ballard	water well	100' NL, 2650' WL	33	95'	Henry	driller's
20438	Paul Horman	Benson Britton	water well	1800' NL, 1500' WL	34	62'	McNairy	driller's
20230	C.M. Luton	Florence Chambliss	water well	300' SL, 1100' WL	34	74'	Porters Creek Clay	driller's
55	Schneider	Hay	water well	1400' SL, 1500' EL	34	150'	McNairy	sample log
14	Schneider	Whelan	water well	NE SE SW	34	140'	McNairy	sample log
20243	C.M. Luton	W.C. Essex	water well	500' SL, 1850' WL	34	54'	Mounds Gravel	driller's
20517	L. Beanland	Wayne Rose	water well	1450' SL, 1050' EL	34	310'	Lower Devonian?	driller's
20237	C.M. Luton	Charles Durham	water well	1200' SL, 2000' EL	35	56'	Mounds Gravel	driller's
20463	Paul Horman	E.F. Dyas	water well	550' SL, 2500' WL	35	66'	Mounds Gravel	driller's
190	McRaven	Gary Parker	water well	900' SL, 600' EL	35	178'	McNairy	driller's
20709	IDOT	Omlsted Rd./I-57	bridge boring	2650' SL, 1650' EL	35	39.7'	Mounds Gravel	engineer's
20549	Paul Horman	R.C. Hinman	water well	1100' SL, 200' WL	36	55'	Mounds Gravel	driller's
20337	C.M. Luton	Brian Moyers	water well	100' SL, 100' EL	36	40'	Porters Creek Clay	driller's
5	Moore	Endicott	water well	NE NW SE	36	170'	McNairy	sample log
				T. 16S., R. 1E.				
11	W.E. Vick	#1 Boyd	oil test	2310' SL, 1650' WL	5	1,366'	Lower Devonian	sample log
6	W.E. Vick	#1 Roberts	oil test	990' SL, 330' WL	5	2,189'	Decorah	sample log
20318	C.M. Luton	William Brennecke	water well	2600' NL, 3000' WL	5	87'	Mounds Gravel	driller's
20450	Paul Horman	George Clancy	water well	200' NL, 100' WL	6	70'	Porters Creek Clay	driller's
155	C.M. Luton	Minnie Clancy	water well	100' NL, 300' WL	6	59'	Mounds Gravel	driller's
3082	IDOT	Interstate Connector	bridge boring	0' SL, 400' WL	7	61.5'	Mounds Gravel	engineer's
20519	L. Beanland	Christine Bryars	water well	2600' NL, 2400' WL	8	72'	Mounds Gravel	driller's
20550	L. Beanland	Albert Ingram	water well	2300' NL, 100' WL	8	70'	Mounds Gravel	driller's
20831	L. Beanland	Sam Johnson	water well	250' NL, 2250' WL	8	78'	Mounds Gravel	driller's
20261	C.M. Luton	Russell Terrell	water well	2600' SL, 2400' WL	8	53'	Mounds Gravel	driller's
3094	IDOT	Hess Creek	bridge boring	0' NL, 1000' WL	17	46.5'	Mounds Gravel	engineer's
3093	IDOT	Hess Creek	bridge boring	0' NL, 50' EL	18	46'	Mounds Gravel	engineer's
				T. 16S., R. 1W.				
31	IDOT	Shumaker Rd./ I-57	bridge boring	0' SL, 600' WL	1	70'	Porters Creek Clay	engineer's
20388	C. Kohnen	Stuart Crisman	water well	2600' NL, 1950' EL	1	51'	Porters Creek Clay	driller's

20526	L. Beanland	Dale Kerr	water well	2600' SL, 1950' WL	1	70'	Porters Creek Clay	driller's (two wells)
56	Schneider	F.X. Wheeler	water well	2200' NL, 1300' WL	2	110'	Porters Creek Clay	sample log
20322	C. Kohnen	L.E. Green	water well	200' NL, 1300' WL	2	85'	Porters Creek Clay	driller's
20357	C.M. Luton	Joe Hancock	water well	300' NL, 750' WL	2	97'	Porters Creek Clay	driller's
20323	C.M. Luton	Thomas Nichols	water well	1150' SL, 50' EL	2	60'	Wilcox?	driller's
20488	Beanland R.	Shiloh Bapt. Church	water well	100' NL, 1200' EL	4	130'	chert	driller's
20440	Beanland	Buddy Beasley	water well	1150' SL, 500' EL	5	200'	chert	driller's
20232	C.M. Luton	Lonnie Crow	water well	1400' SL, 2300' WL	5	57'	Porters Creek Clay	driller's
20324	C.M. Luton	Edna Lee	water well	500' NL, 150' WL	5	92'	McNairy	driller's
20233	C.M. Luton	Russell Martin	water well	1800' NL, 100' WL	5	96'	McNairy	driller's
20358	C.M. Luton	William Duneway	water well	1100' NL, 1300' WL	8	62'	Porters Creek Clay	driller's
20395	Sergent W.E. R.	J. & M. Eaves	water well	1300' NL, 1250' WL	8	300'	Lower Devonian	driller's
20396	Beanland	William Hull	water well	1400' NL, 1400' WL	8	93'	Porters Creek Clay	driller's
20796	Horman	New Bethel Church	water well	100' SL, 2450' EL	8	35'	Wilcox	driller's
20365	Sergent	E., S. & L. Rice	water well	100' NL, 1600' EL	8	146'	McNairy	driller's
20326	C.M. Luton	V.M. Stout	water well	850' SL, 800' EL	9	79'	Porters Creek Clay	driller's
	ISGS	Cagle	stratigraphic	900' SL, 1400' WL	9	80'	Wilcox	sample log
57	Schneider	Hansicker	water well	1400' NL, 50' WL	11	100'	Porters Creek Clay	sample log
20810	IDOT	Mounds Rd./I-57	bridge boring	0' SL, 1100' EL	11	136.5'	McNairy	sample log
3078	IDOT	Mounds Road	bridge boring	0' SL, 1050' WL	12	56.5'	Wilcox	engineer's
20327	C.M. Luton R.	Lawrence George	water well	100' NL, 2600' EL	12	84'	Mounds Gravel	driller's
20558	Beanland	Sandy Newell	water well	200' NL, 2300' WL	12	110'	Mounds Gravel	driller's
none	Blankenship	Mounds water tower	engineering	200' NL, 100' EL	15	41.5'	Mounds Gravel	engineer's
3055	IDOT	Bucher Road	bridge boring	1250' NL, 1900' WL	15	56'	Porters Creek Clay	engineer's
5004	IDOT	Spencer Hts. Virginia	bridge boring	1100' NL, 2700' EL	15	41.5'	Porters Creek Clay	engineer's
20264	C.M. Luton	Humphreys	water well	500' Nl, 1900' WL	16	67'	Wilcox	driller's