Appendix C – Environmental Overview

ENVIRONMENTAL OVERVIEW

Todd County Scoping Study
Todd County, Kentucky
Item 3-8630.00

Submitted to:
Kentucky Transportation Cabinet
District 3
900 Morgantown Road
Bowling Green, KY 42101

Submitted:
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Submitted by:

ENTRAN
ENGINEERING INFRASTRUCTURE SOLUTIONS

ENVIRONMENTAL OVERVIEW

TODD COUNTY SCOPING STUDY
TODD COUNTY, KENTUCKY
KYTC ITEM 3-8630.00

Prepared for

Kentucky Transportation Cabinet
District 3

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EXECUTIVE SUMMARY

This Environmental Overview has been completed for the Todd County Scoping Study, to identify environmental resources and potential issues of concern, and establishes an environmental footprint for consideration in the development of project alternatives and avoidance and minimization of impacts. The study area assessed for this report is centered upon the area where US 41, US 79 and KY 181 come together to form a large triangle west of the town of Guthrie and known locally as Tiny Town. The study area is circular with a radius of 1,500 feet and encompasses approximately 162 acres (0.25 square mile).

Natural environment resources identified within the study area and issues which will require being addressed if impacts occur include:

- One stream, one potential wetland and one pond: A comprehensive stream and wetland survey and impact assessment will need to be conducted for the project. Unavoidable impacts to streams and/or wetlands will require coordination with the U.S. Army Corps of Engineers (USACE) and KDOW and a determination of Section 404/401 permitting and mitigation requirements.

- 100-Year floodplain: Review and coordination with local floodplain coordinator for the City of Guthrie and the Kentucky Division of Water, Surface Water Permits Branch, Floodplain Management Section will be required.

- Groundwater resources: The study area is located within a karst landscape characterized by numerous sinkholes, underground conduits, or caves. Construction disturbance or release of pollutants within the study area could cause contamination of groundwater. Sinkholes are mapped and several low lying areas were observed within the study area into which surface drainage appeared to flow but having no discernible outflow, indicating potential locations of these underground conduits. Construction activities, especially in regards to vehicle fueling and maintenance and surface runoff from precipitation events, will be required to be directed away from all sinkhole and low lying areas, and steps should be taken to avoid introducing contaminants into the groundwater system.

- Potential habitat for two federally endangered species: Indiana bat and littlewing pearlymussel potential habitat occurs in the study area, along with potential habitat for four state endangered and four state threatened species, and a nearby record of one state endangered species. Additional habitat assessment and coordination with the USFWS Ecological Services Kentucky Field Office, Kentucky Department of Fish and Wildlife Resources and the Kentucky State Nature Preserves Commission will be required.

Human environment resources identified within the study area and issues which will require being addressed include:

- Section 4(f) and Section 106 resources: One National Register of Historic Places (NRHP) site, The Stagecoach Inn (Gray's Inn), and one Kentucky Historic Survey Resource site are located in the study area. A Phase I archaeological site investigation will be required to determine the presence or absence of significant archaeological sites throughout the extent of the study area. A cultural historic survey performed by a KYTC pre-qualified consultant will be required to determine the presence (and NRHP eligibility) or absence of additional cultural historic resources in the study area.

- Hazardous materials concern sites: two active UST facilities, one inactive UST facility, one inactive UST and RCRA facility, and one inactive USEPA PCS facility occur within the study area. A Phase I survey for hazardous materials concerns including UST's and potentially contaminated soils will be required at four facilities.

- Agricultural lands: Hay and row crop fields are present throughout the study area, estimated to account for approximately 46% of the total land area. Coordination with the local NRCS office, regulated by the Farmland Protection Policy Act (FPPA), will be necessary.

- Noise-sensitive receptors: Four locations within or adjacent to the study area include a mobile home park, a church and two community meeting facilities that may be sensitive to increased noise impacts. A project specific traffic noise impact analysis may need to be conducted to identify and mitigate traffic noise impacts.

I. PROJECT DESCRIPTION AND ENVIRONMENTAL SETTING

A. Project Description, History and Status

The Todd County Scoping Study project area is located just west of the City of Guthrie and bordering the Kentucky/Tennessee state line, at a triangular-shaped junction of four major roads, US 41, US 79, KY 181 and KY 294, in an area known locally as Tiny Town. The project will consider the current deficiencies in and around the junction of the four major routes, existing safety and capacity issues, and likely traffic impacts from future development patterns.

The Guthrie area is located on two US routes and in close proximity to Interstate 24 which runs through Clarksville, Tennessee approximately six miles to the southwest. A large industrial complex is currently being constructed across the state line in Tennessee between Guthrie and Clarksville, and additional industrial development will likely be stimulated and is being planned nearby. Residential and commercial development is anticipated to follow in Guthrie and the area around Tiny Town due to their proximity.

These conditions lead to an increase in anticipated travel demand through the junction, and necessitate a holistic examination to evaluate the transportation needs through the area. Existing concerns include the widening of US 79 through the area, considered a high priority project for both Todd County and Logan County to the east. In addition, the existing junction of US 41, US 79 and KY 181 has safety concerns such as the sight distance at US 41 and KY 181. This scoping study, being conducted under the Statewide Corridor Planning Contract, is intended to identify minor improvements along with short term and long term projects which may be suitable to meet these future development patterns.

The study area assessed for this report is centered upon the triangular-shaped junction formed by the intersections of US 41, US 79 and KY 181, having a radius of 1,500 feet, and encompassing approximately 162 acres (Attachment A1). This study area includes approximately 0.5 mile of US 41 (about MP 2.1 to 2.6), 0.6 mile of US 79 (about MP 0.1 to 0.7), 0.4 mile of KY 181 (MP 0.0 to 0.4), 0.2 mile of KY 294 (MP 2.7 to 2.9) and 0.2 mile of KY 2128 (MP 0.0 to 0.2). Approximately one-half of the study area lies within the city limits of Guthrie. This *Environmental Overview,* a component of the Scoping Study work in progress, identifies environmental resources and potential issues of concern, and establishes an environmental footprint for consideration in the development of project alternatives and avoidance and minimization of impacts.

Information for this overview was obtained from literature review, resource agency coordination, and an on-site reconnaissance (field) survey of the study area conducted on 30 June 2011 by ENTRAN personnel. Information obtained from secondary sources and the on-site survey was mapped on aerial photograph base maps provided in Attachments A2 and A3 and a USGS Topographic map provided in Attachment A4.

Resources and issues of concern identified in the study area include those related to both the natural and human environment. Natural environment resources are presented in Section II, which includes streams, floodplains, wetlands, ponds, water supplies, threatened, endangered and special concern species and habitat, woodland and terrestrial areas, and parks (Attachment A2). Human environment

resources are presented in Section III, which includes social and economic resources, historic and archaeological resources, hazardous materials concerns, agriculture, mining, air quality and noise, and additional concerns (Attachment A3).

B. Land Cover

Land cover in the project area was determined through a combination of aerial photograph review and on-site survey. General land cover in the study area includes a mix of agricultural, residential and commercial lands surrounding existing roadway right-of-way (Attachment A2; aerial base USDA-FSA, 2010). The central portion of the study area occurs within the Guthrie corporate limits, with land use in this area being commercial, residential and institutional. A mobile home residential village occurs in the south center of the study area, and extensive agricultural fields surround the area. Overall throughout the study area, agriculture covers an estimated 46% of land area, residential 17%, commercial 12%, institutional 3% and undeveloped land 10%.

C. Physiography and Topography

The project is located in the Mississippian Plateaus (also known as Western Pennyroyal) physiographic region (KGS, 2001a; Attachment B1), and the Western Pennyroyal Karst Plain subarea of the Interior Plateau Ecoregion (Woods et al, 2002; Attachment B2). These regions are described as gently sloping to rolling karst plain with underground drainage containing sinkholes and ponds with few surface streams. Historic and potential natural vegetation includes bluestem prairie and oak-hickory or mixed deciduous forests dominated by beech and oak, though much is replaced by extensive cropland and pastureland, with forests limited in extent.

The study area vicinity has gently rolling terrain with low relief. Review of the United States Geologic Survey Guthrie 7.5' topographic quadrangle (USGS, 1950; Attachment A1) indicates elevations range from about 520 feet above mean sea level to 550 feet above mean sea level, sloping towards the south, with small to moderate size mapped sinkholes present.

D. Geology and Soils

In general, soils are comprised of thin loess and alluvium over middle Mississippian age St. Genevieve Limestone bedrock of the Meramec Formation (Haagen, 1987; Klemic, 1966; Attachment B3). The southern portion of Todd County is considered to be in an intense karst potential area (KGS, 2001b; KGS, 2010a; Attachment B4). Intense karst indicates an area "underlain by bedrock with high potential for karst development. May exhibit mature karst, including caves, sinkholes and springs where they crop out" (KGS, 2010b). Several sinkholes are mapped within the vicinity of the study area (KGS, 2003), though none were definitively observed during field survey activities (Attachment A2).

Soils in the study area occur primarily in the Pembroke-Nicholson-Crider soil association with minor Robertsville-Lawrence soil association coverage (Attachment B5). These soil associations include nearly level to sloping, deep, well drained and moderately well drained to poorly drained soils that are loamy, formed in loess and residuum from limestone or in alluvium or colluvium, on broad upland plains or

concave upland basins and stream terraces. The Robertsville silt loam and Newark silt loam soil units along the south edge of the study area are mapped as hydric soils (Haagen, 1987 and USDA, 2011a).

E. Drainage

The study area is located within the Spring Creek watershed (HUC-11: 05130206250) of the Lower Cumberland, Red River Cataloging Unit (HUC-8: 05130206; Carey, 2003; KDOW, 2011a). The Spring Creek watershed has a drainage area of 34.2 square miles and flows south into Tennessee to join the Red River. Local surface drainage in the study area is to the south to an Unnamed Tributary to Spring Creek which then flows southwest across the state line. Subsurface drainage is likely due to the presence of mapped sinkholes in the study area vicinity.

II. NATURAL ENVIRONMENT

A. Surface Streams

Information from the Kentucky Energy and Environment Cabinet, Department for Environmental Protection, Division of Water (KDOW) indicates that no Special Use Waters (cold water aquatic habitat, exceptional waters, reference reach waters, outstanding state resource waters, outstanding national resource waters, state wild rivers or federal wild and scenic rivers) occur in the study area (KDOW, 2011b). No high quality stream corridors were observed in the study area during the on-site survey conducted in June 2011.

One stream was identified in the study area during the June 2011 field survey, an unnamed tributary to Spring Creek designated as Stream S1 (Attachment A2). Based on review of USGS 7.5' topographic mapping (USGS, 1950), this stream corresponds to an unnamed USGS mapped perennial feature.

Stream S1 is not listed in the 2010 KDOW 305(b) and 303(d) water quality reports (KDOW, 2010a and 2010b), and does not have an assigned Designated Use. The nearest feature with a Designated Use evaluation is Spring Creek (River Miles 14.4 to 16.3), which is located approximately 1.25 mile downstream of the study area. Spring Creek is listed as "Fully Supporting" its Warm Water Aquatic Habitat Use designation. Additional Designated Use categories for Spring Creek have not been assessed due to insufficient or no data available. No Total Maximum Daily Load (TMDL) is in effect for the Spring Creek watershed.

A comprehensive stream survey and impact assessment, including evaluation of avoidance and minimization measures, will need to be conducted as this project further develops. Unavoidable impacts to streams will require coordination with the U.S. Army Corps of Engineers (USACE) and KDOW to determine Section 404/401 permitting and mitigation requirements.

B. Floodplains

Based on review of Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FEMA, 2010) and floodplain data from the Kentucky Office of Technology-Division of Geographic Information (KOT-DGI, 2010a), 100-Year floodplain exists within the study area (Attachments A2 and

B6). This floodplain is associated with FEMA identified Spring Creek Tributary 6, which was designated as Stream S1 during the June 2011 field survey. The floodplain is located at the southern extent of the study area and is designated as Zone A ("1-percent-annual-chance flood event") with no base flood elevation determined. Within the study area this floodplain includes the riparian corridor and bottomland woodlands around Stream S1, a field identified pond, and agricultural fields.

C. Wetlands

One National Wetland Inventory (NWI) wetland is mapped within the study area, identified as palustrine open water permanently flooded excavated feature, i.e. dug-out pond (USFWS, 2011a; Attachment A2). Based on review of soils information (Haagen, 1987; USDA, 2011b), approximately 8.6% (14 acres) of the study area includes Robertsville and Newark silt loam soil units, which have 93 and 6% (respectively) hydric soil components (Attachment B5) and a greater potential of containing un-mapped wetlands than non-hydric soils.

The June 2011 on-site reconnaissance included a field check of NWI mapped features, as well as a reconnaissance of the study area to determine the occurrence of other potential wetlands. The one NWI feature was observed to occur within a plowed agricultural field. Wetland characteristics were not evident and further assessment will be needed to determine the jurisdictional status of this feature as a farmed wetland.

One potential wetland was observed (Attachment A2), designated as Wetland W1 and identified as a palustrine forested wetland (PFO) having an approximate size of 0.048 acre. This potential wetland was located within a wooded low lying area on the south side of KY 294, and exhibited standing water along with hydrophytic vegetation (herbaceous and woody.) This potential wetland corresponds in location to a USGS mapped pond though is smaller in size.

No extensive or high quality wetlands were noted to occur in the study area from secondary source review, aerial mapping or field observation. Additional potential wetlands may occur within the floodplain of Stream S1, which was not intensively investigated during on-site reconnaissance, as this floodplain is comprised of wooded riparian corridor on hydric soils.

Potential wetlands identified during field survey were not verified through wetland determination or wetland delineation procedures. A comprehensive wetland survey and impact assessment, including evaluation of avoidance and minimization measures, will need to be conducted as this project further develops. Unavoidable wetland impacts will require coordination with the USACE and KDOW to determine Section 404/401 permitting and mitigation requirements.

D. Ponds

One pond was identified within the study area during the June 2011 on-site reconnaissance (Attachment A2), designated as Pond P1. This pond appeared to have a current use as a recreational pond, with a surface area of 0.36 acre, and located in a grass field within the floodplain of Stream S1.

E. Groundwater Resources and Public Water Supplies

Groundwater - Groundwater, spring, and water well information from the Kentucky Geologic Survey (KGS) and KDOW was reviewed for the study area. In general, groundwater resources in southern Todd County are greater and more readily accessed than those in the northern half. Springs having low to moderate flow rates are present, and most wells drilled in upland areas are adequate for domestic supply as they penetrate solution openings in the karst bedrock (Brown and Lambert, 1963; Carey and Stickney, 2004; Attachment B7). The Kentucky State Nature Preserves Commission indicated the study area is "located within a karst landscape characterized by numerous sinkholes, underground conduits, or caves. Construction disturbance or release of pollutants within the specified area could easily cause contamination of groundwater" (Attachment B10). Several low lying areas were observed within the study area into which surface drainage appeared to flow but having no discernible outflow, indicating potential locations of these underground conduits.

Water wells in the general project vicinity (Guthrie USGS quad) are primarily utilized for monitoring (unspecified activities, 67%), with domestic (21%) and livestock (7%) uses secondary (KGS, 2011a), with average total depth about 75 to 125 feet and depth to bedrock about 20 to 50 feet. Information from KGS indicated that no water wells are located within the study area or vicinity (Attachment A2), with the nearest water wells being domestic use wells approximately 0.6 to 0.8 mile north and northwest of the study area.

Springs in the general project vicinity are common and primarily used for livestock. No springs are mapped within the study area (KGS, 2011a), with the nearest mapped spring (Merriweather Spring, perennial) located approximately 0.5 mile west of the study area.

No water wells or springs were observed in the study area during the June 2011 on-site reconnaissance.

Public Water Supplies - The majority of county residents (94%) are on public water utility services supplied through the Logan-Todd Regional Water District, which draws from the Cumberland River. Water supplies in the project vicinity are provided by the Guthrie Water Works and the Todd County Water District (Pennyrile Area Development District, 1999 and 2009). Based on information from the Kentucky Geologic Survey (KGS), the Kentucky Division of Water (KDOW), and the Pennyrile Area Development District (PADD), the study area and vicinity is not within a Source Water Assessment and Protection (SWAP) area, nor are any Wellhead Protection Areas established (KDOW, 2010a; KOT-DGI, 2010b; PADD, 2009). The spring located just west of the project area is the Merriweather Spring, a perennial spring previously utilized as the water supply source for the local Guthrie Water Works prior to their interconnection with the Logan-Todd Regional Water District.

F. Threatened, Endangered and Special Concern Species

Secondary Source Information – Information concerning federal and state endangered, threatened and special concern species and unique habitats in the project vicinity was obtained from the United States Fish and Wildlife Service (USFWS, 2011b and 2011c), the USFWS Ecological Services Kentucky Field Office (USFWS, 2008a), the Kentucky Department of Fish and Wildlife Resources (KDFWR, 2011), and the Kentucky State Nature Preserves Commission (KSNPC). The USFWS national office reports

three federal-endangered species from Todd County, including the clams Littlewing pearlymussel (*Pegias fabula*), Ring pink (*Obovaria retusa*) and Fanshell (*Cyprogenia stegaria*). The USFWS Ecological Services Kentucky Field Office indicates one additional federal-endangered species, the Indiana bat (*Myotis sodalis*), as having the potential to occur within Todd County. Other USFWS listed species known or having the potential to occur within Todd County include two federal-candidate species: Fluted kidneyshell mussel (*Ptychobranchus subtentum*) and Slabside pearlymussel (*Lexingtonia dolabelloides*). There were no USFWS managed Endangered Species conservation measures found in effect in the study area vicinity (Attachment B8).

The KDFWR indicates an additional 18 state-listed species observations in Todd County, including four state-endangered, eight state-threatened and six state-special concern species (Attachment B9).

Based on data received from KSNPC, there are no reported occurrences of any state or federal listed species within the study area boundaries. However, KSNPC records indicate one listed species within 1-mile of the study area (Buffalo clover, *Trifolium reflexum*), and three records within 10-miles (Attachment B10). Two of the four records indicate species not on the KDFWR list (Buffalo clover and Bewick's Wren) that are known to occur in Todd County. Due to the sensitive nature of listed-species information, mapped locations of these records are not included in this environmental overview.

1. Federal-Listed Species

There are no known records of any federal-listed species within the study area boundaries based on review of database records, although six species are known from or have the potential to occur in Todd County, including:

- **Fanshell mussel** (*Cyprogenia stegaria*), federal and state endangered species known from Todd County. Prefers medium to large rivers, primarily in relatively deep water in gravel substrate with moderate current (USFWS).

- **Indiana bat** (*Myotis sodalis*), federal and state endangered species having the potential to occur within Todd County. In summer, found under exfoliating bark and in cavities of dead and live trees in upland and riparian forests, and wooded fencerows. In winter, found hibernating in caves and old mine portals (KDFWR).

- **Ring pink mussel** (*Obovaria retusa*), federal and state endangered species known from Todd County. Characterized as a large-river species inhabiting relatively shallow waters within gravel and sandy substrates (USFWS).

- **Littlewing pearlymussel** (*Pegias fabula*), federal and state endangered species known from Todd County. Inhabits small to medium, low turbidity, cool-water, high to moderate gradient streams, partially within or on top of gravel substrates in riffles, or beneath boulders and slabrock (USFWS).

- **Slabside pearlymussel** (*Lexingtonia dolabelloides*), federal candidate species having the potential to occur within Todd County (synonymous with *Pleuronaia dolabelloides*). Primarily inhabits large

creeks to moderately-sized rivers within sand, fine gravel and cobble in relatively shallow riffles and shoals with moderate to swift current (NatureServe).

- **Fluted kidneyshell mussel** (*Ptychobranchus subtentum*), federal candidate and state endangered species known from Todd County. Inhabits small to medium rivers embedded in sand, gravel, and cobble substrates with swift current or riffles (NatureServe).

Review of information provided in the Indiana Bat Mitigation Guidance for the Commonwealth of Kentucky (USFWS, 2008b) indicates that the study area occurs outside of the mapped USFWS Indiana Bat Recovery and Mitigation Focus Areas (RMFA's). The nearest specified RMFA's are mapped approximately 14 miles northeast, 18 miles west, and 20 miles north of the study area. These mapped locations contain "Sensitive" and "Maternity" habitat, "Sensitive", Priority 3 and Priority 4 hibernacula, and Priority 3 and Priority 4 hibernacula, respectively (Attachment B11). None of these mapped locations are connected to the project study area by contiguous forested habitat. The Kentucky Speleological Society (KSS; Attachment B12) indicated that there are no known caves within the study area, and no caves were observed during the June 2011 on-site reconnaissance.

During the June 2011 on-site reconnaissance, potential habitat was identified in the study area for the following species:

- Indiana bas summer habitat (federal-endangered) as the riparian corridor of Stream S1 (see representative photographs in Attachment C). This riparian corridor consisted of bottomland woodland along both banks of the stream, connecting two larger woodlots to the east (upstream) and south (downstream) of the study area.

- Littlewing pearlymussel (federal and state-endangered) as Stream S1. This stream is a USGS perennial stream, and was observed to be a small stream of relatively low to possibly mild gradient. Turbidity levels, temperature and substrate were not evaluated during the course of field survey.

No suitable habitat for the federal-endangered fanshell mussel or ring pink mussel, or the federal-candidate slabside pearlymussel or fluted kidneyshell mussel was observed in the study area.

Due to the occurrence of potential habitat for federal-listed Indiana bat and littlewing pearlymussel within the study area, additional habitat assessment and coordination with resource agencies may be required as the project further develops.

2. State-Listed Species

There are no known records of any state-listed species within the project study area boundaries based on review of KSNPC database records, though 20 species are known from or have the potential to occur in Todd County (KDFWR and KSNPC), as summarized below.

State-Endangered

- **Great egret** (*Ardea alba*), state endangered species with range in Todd County. Primarily uses forested floodplain and bottomland hardwood forests and reservoir habitat, emergent and shrub-dominated wetlands, and forested wetlands (KDFWR).

- **Pocketbook mussel** (*Lampsilis ovata*), state endangered species with range in Todd County. Found in medium-sized to large rivers in sand and gravel (KDFWR).

- **Double-crested cormorant** (*Phalacrocorax auritus*), state endangered species with range in Todd County. Preferred habitat includes lakes, ponds, rivers, lagoons, swamps, usually within sight of land. Nests on the ground or in trees in freshwater situations (NatureServe, 2010).

- **Purple lilliput mussel** (*Toxolasma lividus*), state endangered species with range in Todd County. Inhabits fine-particle substrates and also sand, gravel, or cobbles and boulders in riffles or flats immediately above riffles. Often the first species encountered in headwater areas, generally occurring at depths less than 1 meter (KDFWR).

- **Buffalo clover** (*Trifolium reflexum*), state endangered species historically known from Todd County. Found in prairies and disturbed openings either associated with forests or opportunistically in fields or well-drained sites (KSNPC). Note: this species not listed for Todd County by KDFWR, but did produce a historical database record from KSNPC located within Todd County.

State-threatened

- **Blue-winged teal** (*Anas discors*), state threatened species historically known from Todd County. Prefers marshes, ponds, sloughs, lakes, and sluggish streams (river pools) (NatureServe, 2010).

- **Northern harrier** (*Circus cyaneus*), state threatened species with range in Todd County. Prefers reclaimed mine lands and emergent and shrub-dominated wetlands, with adjacent grassland/agricultural (KDFWR).

- **Bald Eagle** (*Haliaeetus leucocephalus*), state threatened species (federal delisted) with range in Todd County. Inhabits forested floodplains, bottomland hardwood forests, bald cypress wetlands, and riparian forests along large rivers and reservoirs (KDFWR and KSNPC).

- **Redspotted sunfish** (*Lepomis miniatus*), state threatened species with range in Todd County. Inhabits lowland streams, oxbow lakes, and wetlands typically over substrates of sand and mud overlain with organic debris. In streams occurs in backwater and pool habitats and in wetlands and oxbow lakes along vegetated shorelines (KDFWR).

- **Eastern slender glass lizard** (*Ophisaurus attenuates longicaudus*), state threatened species with range in Todd County. Occurs in fairly dry rocky open woodlands, remnant glades and prairies, rocky fields, and utility line areas with some bare ground (KDFWR).

- **Whitewashed rabdotus** (*Rabdotus dealbatus*), state threatened species with range in Todd County. Terrestrial snail species found crawling on the ground or on low vegetation in wet weather, associated with glades (KSNPC).

- **Kentucky creekshell mussel** (*Villosa ortmanni*), state threatened species with range in Todd County. Prefers small streams to medium-sized rivers in sand, mud, and gravel (KDFWR).

- **Mountain creekshell mussel** (*Villosa vanuxemensis vanuxemensis*), state threatened species with range in Todd County. Prefers small streams and small rivers in silt, sand, or gravel (KDFWR).

State special concern

- **Henslow's sparrow** (*Ammodramus henslowii*), federal species of management concern and state special concern species with range in Todd County. Prefers open fields and meadows with interspersed grass, weeds or shrubby vegetation, especially in damp or low-lying area. Migration and winter habitat includes grassy areas adjacent to pine or second-growth woods (KSNPC).

- **Great blue heron** (*Ardea herodias*), state special concern species with range in Todd County. Found in freshwater habitats, lakes, ponds and marshes with adjacent woodlands (NatureServe, 2010).

- **Eastern hellbender** (*Cryptobranchus alleganiensis alleganiensis*), state special concern species with range in Todd County. Occurs in rivers and large streams; known from the major river systems in Kentucky including the Ohio, Licking, Kentucky, Green, Barren, Cumberland. Apparently requires reasonably good water quality (KDFWR).

- **Barking treefrog** (*Hyla gratiosa*), state special concern species with range in Todd County. Generally found only in agricultural areas; breed sporadically in seasonal and permanent ponds that are located primarily in open agricultural habitats (KDFWR).

- **Dark-eyed junco** (*Junco hyemalis*), state special concern species with range in Todd County. Prefers various sorts of coniferous, mixed, and deciduous forest; forest edge; forest clearings; bogs; open woodland; brushy areas adjacent to forest; and burned-over lands (NatureServe, 2010).

- **Onyx rocksnail** (*Leptoxis praerosa*), state special concern species with range in Todd County. Aquatic snail found on algae-covered rocks in strong current (NatureServe, 2010); no habitat assessment, habitat guild or key habitat identified by KDFWR.

- **Bewick's wren** (*Thryomanes bewickii*), federal species of management concern and state special concern species historically known from Todd County. Prefers brushy areas, thickets and scrub in open country, open and riparian woodland. Found in country towns and farms (KSNPC). Note: this species not listed for Todd County by KDFWR, but did produce a historical database record from KSNPC located within Todd County.

During the June 2011 on-site reconnaissance, potential habitat was identified in the study area for the following species:

- Great egret and bald eagle in the form of floodplain woodlands along Stream S1;
- Double-crested cormorant, buffalo clover, blue-winged teal, Henslow's sparrow and great blue heron in the form of a pond and open field adjacent to Stream S1;
- Purple lilliput mussel, Kentucky creekshell mussel and mountain creekshell mussel in the form of the small to medium sized Stream S1;
- Barking treefrog in the form of Wetland W1 and various additional low spots adjacent to or within agricultural fields throughout the study area;
- Bewick's wren in the form of wooded fence rows and tree lines along agricultural fields and Stream S1, throughout the study area.

Due to the occurrence of potential habitat for multiple state-listed species within the study area, additional habitat assessment and coordination with resource agencies may be required as the project further develops.

G. Woodland Habitats

Woodland habitat within the project study area is generally linear in presence (fence rows, riparian corridors, agricultural field boundaries, etc.), and accounted for about 7 percent (12 acres) of the study area (Attachment A2; see representative photographs in Attachment C). A majority of the woodland within the study area occurred as bottomland woodland within the floodplain of Stream S1 dominated by sycamore, ash and box-elder. Wooded areas in low lying locations such as around Wetland W1 or agricultural drainage swales were similarly dominated by ash and box-elder. The remaining wooded areas were upland woodlots or fence rows typically dominated by oaks, maple, black cherry or locust. Wooded habitats had a relatively open understory with limited scrub or shrub undergrowth. None of the wooded areas observed were considered to be unique or of high quality.

H. Public Parks – Section 4(f) and Section 6(f) Facilities

Based on the June 2011 on-site reconnaissance and review of information from KSNPC, the National Park Service (NPS, 2011a), and other available mapping, no state or federal managed areas, parks, forests or preserves (Section 4(f) resources) occur in the study area. No facilities in the study area were identified as having received a Land and Water Conservation Fund (LWCF) grant (Section 6(f) resources; Attachment B13). Section 4(f) resources relative to archaeological sites and cultural and historic properties are discussed in Section III.B of this document.

III. HUMAN ENVIRONMENT

A. Social and Economic Resources

Through a combination of review of secondary source information, aerial photography and on-site field survey, the following social and economic resources were identified in the study area (Attachment A3):

Cemeteries - No cemeteries were identified.

Churches - One church was identified:

- *Tiny Town Baptist Church,* Hwy 41 at Hwy 181

Federal Facilities - No federal facilities were identified.

Fire Departments and Hospitals - No fire departments or hospitals were identified.

Golf Courses - No public golf courses occur in the study area.

Industrial and Business Parks - No industrial or business parks occur in the study area. The Patriot Business Park occurs just east (approximately 250 feet) of the study area, between US 79 and US 41. The current vacant lot on the north side of US 41 and US 79 was indicated by signage as the site of the future "The Crossings" commercial development location. Businesses in the study area were concentrated along US 41 and US 79.

Table 1. Businesses in Study Area (Tiny Town, Guthrie).

Name	Address
Beach Oil, dba Exxon	11945 Hwy 181
Creekside Meadows MHP	10270 Russellville Road (Hwy 79)
Elkton Bank & Trust	10275 Russellville Road (Hwy 79)
Favourite Lotto	10125 Dixie Beeline Highway (Hwy 41)
Flea Market	Hwy 41 & Hwy 181 NW
Food Giant Food Store	10300 Dixie Beeline Highway (Hwy 41)
Guthrie Bethel Masonic Lodge 669	Hwy 41, Tiny Town
Kidron Brook Nursery	10480 Russellville Road (Hwy 79)
Lotto Express	10410 Russellville Road (Hwy 79)
Mike's Bar-B-Cue	9926 Russellville Road (Hwy 79)
The Hairitage Salon	10210 Graysville Road
Thoroughbred Realty	10220 Dixie Beeline Highway (Hwy 41)
Tiny Town Auto Sales	10360 Russellville Road (Hwy 79)
Tiny Town Bingo	10020 Russellville Road (Hwy 79)
Tiny Town Pizza & Subs	10155 Dixie Beeline Highway (Hwy 41)
Tiny Town Produce	10155 Dixie Beeline Highway (Hwy 41)
Tiny Town Red Top Bar-B-Q	10388 Russellville Road (Hwy 79)

Schools, Institutions and Learning Centers - No schools or learning centers were identified, and two locations were identified as Institutions for community resources:

- *Guthrie Bethel Masonic Lodge 669,* Hwy 41
- *Tiny Town Bingo*, 10020 Russellville Road

Shopping Centers - No shopping centers were identified.

B. Archaeological and Cultural Historic Resources – Section 106 and Section 4(f) Resources

Information concerning archaeological and cultural historic resources in the vicinity of the project study area was obtained from the Kentucky Office of State Archaeology (KOSA) and the Kentucky Heritage Council (KHC) through data requests in March 2011. A summary of key findings is provided below. Section 106 review under the Historic Preservation Act and evaluation and coordination with the Federal Highway Administration under Section 4(f) of the Department of Transportation Act of 1966 will be required if any archaeological or cultural historic resources are identified and impacted by the project.

1. Archaeological Resources

Review of information from the Kentucky Office of State Archaeology data request response indicates one prior archaeological survey has been performed which lies within the project study (KOSA, 2011; Attachment A3), which was provided the identification number 110-018. The prior archaeological survey was conducted for a cell tower site along KY 2128 south of the project center and did not identify any archaeological resources. KOSA estimated that less than 10% of the project study area has been surveyed for archaeological resources.

The prior archaeological survey location was observed during the June 2011 field survey to exist as a residential lot consisting of mowed/maintained grass with residential structures to the north and west, an open field, pond, stream and wooded riparian corridor to the south, and a mobile home park and agricultural field to the east.

As most of the project area has not been previously surveyed for archaeological resources, a Phase I archaeological site investigation will be required to determine the presence or absence of archaeological resources throughout the extent of the study area.

2. Cultural Historic Resources

Review of information from the Kentucky Heritage Council data request response indicated two previously recorded historic resources occur within the project study area (KHC, 2011; Attachment A3).

- The Stagecoach Inn (Gray's Inn) is located in the center of the study area, at the northeast corner of Graysville Road and KY 181, facing Graysville Road. The building is on the National Register of Historic Places, is currently a privately-owned residence, and the property includes a

Kentucky Historical Society "Stage Coach Inn" marker and a National Park Service "Trail of Tears National Historic Trail" sign (NPS, 2011b).

- The Louis Downer Farm is a Historic Survey Resource, with NRHP status undetermined, and is located at the northwest corner of KY 181 and KY 294. The property includes a privately-owned residential structure and several small outbuildings in excellent condition.

An on-site reconnaissance of the study area performed June 2011 by ENTRAN personnel identified the two listed historical resources as present, each centered on a residential structure (Attachment C). Several additional structures that appeared to be more than 50 years in age were observed scattered throughout the study area. A cultural historic survey performed by a KYTC pre-qualified consultant will be required as this project further develops to determine the presence (and NRHP eligibility) or absence of cultural historic resources in the study area.

C. Hazardous Materials Concerns

Properties with hazardous material concerns were identified through review of state and federal database records and an on-site reconnaissance of the study area. Federal and state regulatory database records research was provided by FirstSearch Technology Corporation (2011), in addition to a review of the Statewide UST Database Report (KDWM, 2011) and Kentucky Solid Waste Facilities GIS information (KDWM, 2010).

Overall, five sites within the project study area were identified as having potential hazardous material concerns as described below and shown on Attachment A3, labeled by the indicated Property ID.

1. Underground Storage Tanks

The occurrence of Underground Storage Tanks (UST's) in the vicinity of the study area was determined through a review of state UST/AST (Underground Storage Tank/Aboveground Storage Tank), LUST (Leaking Underground Storage Tank) and State Petroleum Cleanup databases.

A combination of the database search report review and field survey of the study area conducted by ENTRAN personnel on 30 June 2011 identified the following UST concern facilities:

Property ID 1 *Tiny Town Coffee Cup*, Hwy 41 and Hwy 79. The location has a database record of UST indicating six UST's which were removed 5/1/1989. The location of this site could not be identified, though it may have been located at the current Tiny Town Bingo or commercial development area listed as "The Crossings".

Property ID 2 *Favourite Lotto*, 10125 Dixie Beeline Hwy (US 41). This property has database records of UST and LUST, and was identified as the current Favourite Lotto gas station and convenience store at the southeast corner of US 41 and US 79. Database records indicate three active and two removed (removal date 6/22/99) UST's on the property. Two LUST records for the property have no recorded remediation activities.

Property ID 3 *Beach Oil, dba Exxon #25*, 11945 Guthrie Highway (Highway 181). This property has a database record of UST indicating three active UST's, and was identified during on-site reconnaissance as a recently opened Exxon gas station and convenience store.

Property ID 4 *Piggly Wiggly 79*, 10300 Dixie Beeline Hwy (Highway 41). This property has a database record of UST indicating three UST's removed 11/9/1998. The location address corresponds to the current Food Giant Food Store at the east edge of the study area along US 41 (see Table 1, page 11).

A Phase I survey for UST's and potentially contaminated soils will need to be conducted as the project further develops should either of these properties be impacted by construction or excavation activities.

2. USEPA Regulated Sites

The occurrence of USEPA regulated sites and incident reports in the vicinity of the study area was determined through review of the USEPA Envirofacts Data Warehouse (USEPA, 2011) and the FirstSearch Technology Corporation (2011) regulatory database search of the following databases:

USEPA NPL (National Priority List-Active and Delisted); CERCLIS (Comprehensive Environmental Response Compensation and Liability Information System –Superfund); NFRAP (CERCLIS Archived Sites); RCRA (Resource Conservation and Recovery Information System, RCRIS, RCRA Corrective Action, Treatment Storage and Disposal Facilities, and Generators); ERNS (Emergency Response Notification System); and Brownfields;

STATE Sites (State LEADS List); SWL (Permitted Operating Landfills); LUST (Senate Bill 193); UST/AST; and Brownfields.

A USEPA Envirofacts Data Warehouse Locational Reference Tables data query for all USEPA registered facilities reported two facilities (Attachment B14) within the study area under the following regulatory programs:

Resource Conservation and Recovery Act Information System (RCRAINFO)

Property ID 4 *Keystop Food Mart-Piggly Wiggly #79*, 10300 Dixie Bee Line Drive. This property report indicates NAICS codes listed as Gasoline Station and Supermarkets and Other Grocery (Except Convenience) Stores. The property is listed under "Inactive" status with the last update registered 09/02/2000. The property was identified in the UST database record review as the site of the current Food Giant Food Store.

Permit Compliance System (PCS)

Property ID 5 *South Todd Turning Lanes*, Guthrie Road. This property has an "Inactive" status with no data records available regarding inspection and enforcement, compliance monitoring or alleged violations. May be related to an NPDES permit or a 404/401 permit (Clean Water Act Statute indicated), as the company SIC code indicates "Highway and Street Construction" (U.S. Department of Labor, 2011). Location data indicates this

property is at the current location of the Tiny Town Auto Sales at the southwest corner of Hwy 79, Hwy 181 and Hwy 2128.

3. Oil and Gas Wells

Oil and gas well locations in the vicinity of the study area were identified through review of information from the Kentucky Geological Survey, Geologic Information Service (KGS, 2011b) and on-site survey. No oil or gas wells are located within the study area. The nearest active oil or gas well is located approximately 4.5 miles northeast of the study area, with several dry and abandoned wells somewhat closer. No oil or gas fields are mapped in or near the study area.

4. Landfills

Review of information from Kentucky Environmental and Public Protection Cabinet, Division of Waste Management (KDWM), Solid Waste Branch indicated there are no active Contained or CDD solid waste facilities in Todd County (KDWM, 2010). No specific information could be determined regarding solid waste disposal activities in the project vicinity.

The federal and state regulatory database search report acquired for the project (FirstSearch Technology Corporation, 2011) reported one record for permitted landfills (SWL) in the vicinity of the study area, an active record for Stateline Transfer Station on KY 79 South which could not be geographically located.

During the on-site reconnaissance of the study area, no evidence of active or closed landfills was observed in or adjacent to the study area. The reported Stateline Transfer Station on KY 79 was not identified or observed as present in the vicinity of the study area.

D. Agriculture

Review of 2007 Agricultural Census data from the United States Department of Agriculture (USDA) indicates that Todd County is ranked 7th out of 120 Kentucky counties in agricultural production value, with the typical agricultural practices of corn (48,390 acres) and soybean (42,795 acres) (USDA, 2007), with poultry and eggs having the largest value in sales. Review of soil data information of the project study area (Haagen, 1987) indicated that prime farmland soils cover 90% of the study area (Attachment B5).

On-site reconnaissance in June 2011 indicated that agricultural lands in the study area consisted of expansive hay and corn fields. One fallow row-crop field was observed to the south of US 41 at the east side of the study area. Land dedicated to agriculture was estimated to account for approximately 46% of the total study area.

Impacts to farmland are regulated by the Farmland Protection Policy Act (FPPA). Coordination with the local NRCS office will be necessary as the project develops, to determine if there will be adverse impacts to farmland associated with the proposed project.

E. Mining

The presence of mines or quarries in the study area was investigated through review of information from the Kentucky Department for Natural Resources (Division of Mine Permits, Division of Mine Reclamation and Enforcement, and Division of Abandoned Mine Lands; KDNR, 2010), Kentucky Mine Mapping Information (2011), and field survey of the study area. Review of secondary source information indicated two active and one closed mines and/or quarries occur in Todd County. The nearest operating mine or quarry and is located approximately 13 miles north of the study area. There are no mined out areas mapped within the county, and the county is covered by the Division of Abandoned Mine Lands' Madisonville field office.

No active or inactive mining operations were observed within or adjacent to the study area during the on-site field reconnaissance. No additional work regarding mines or mining operations is recommended for the proposed project.

F. Air Quality and Noise

1. Air Quality

Review of available USEPA Envirofacts data for Todd and adjoining counties (USEPA, 2011) did not indicate any air quality issues for the reporting year through March 2011. Review of available USEPA Green Book data (USEPA, 2010) indicates Todd County and the surrounding counties are not listed for any criteria pollutants. The Kentucky Transportation Cabinet (KYTC), Division of Planning's Air Quality Modal Program does not list Todd County as an Air Quality Non-Attainment Area (*8-Hour Ozone* or *PM2.5*) as of July 2007 (KYTC, 2011a).

2. Noise

Noise-sensitive receptors observed during the June 2011 on-site reconnaissance as being within or adjacent to the study area included the following:

- Creekside Meadows Mobile Home Park, 10270 Russellville Road (Hwy 79);
- Tiny Town Baptist Church, Hwy 41 at Hwy 181;
- Tiny Town Bingo, 10020 Russellville Road (Hwy 79);
- Guthrie Bethel Masonic Lodge 669, Hwy 41, Tiny Town.

Aside from these specific locations, the majority of the study area resembled rural residential and rural agricultural development patterns with widely separated single family residential structures scattered throughout the study area.

The locations of these identified receptors in the study area are provided on Attachment A3. A project specific traffic noise impact analysis may need to be conducted to identify and mitigate traffic noise impacts as this project further develops.

G. Additional Items of Concern

MS4 - The study area, the City of Guthrie and Todd County are not within any regulated Small Municipal Separate Storm Sewer System (MS4) (KYTC, 2010b).

Utility Corridors - No specific utility corridors were identified during June 2011 on-site reconnaissance.

Socioeconomic and Environmental Justice - Information regarding socioeconomic data and the presence or absence of environmental justice populations is being provided by the Pennyrile Area Development District for inclusion in the project scoping study. Aerial and USGS mapping indicates a mobile home neighborhood is located along the south side of US 79, south of US 41, which was identified during on-site reconnaissance of the study area as the Creekside Meadows MHP, and is considered a noise-sensitive receptor (see Attachment A3).

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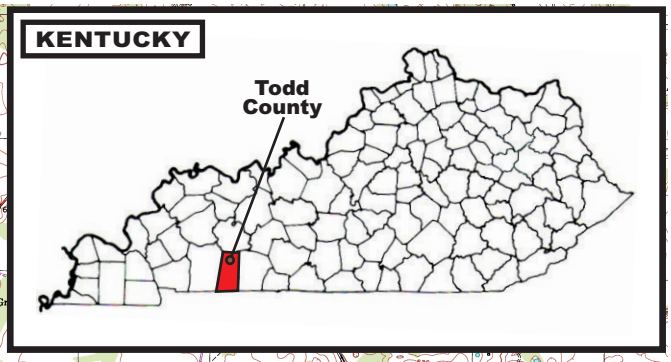
ATTACHMENT A

A1. Project Location Map
A2. Environmental Footprint, Natural Environment
A3. Environmental Footprint, Human Environment
A4. Project Area Map on USGS Base



STUDY AREA

US-41

KY-181

KY-294

US-79

US-41

GUTHRIE

BASE: Guthrie, Kentucky-Tennessee
USGS 7.5' Topographic Quadrangle;
Photorevised 1983

0 750 1500 3000 FEET

NORTH

July 2011

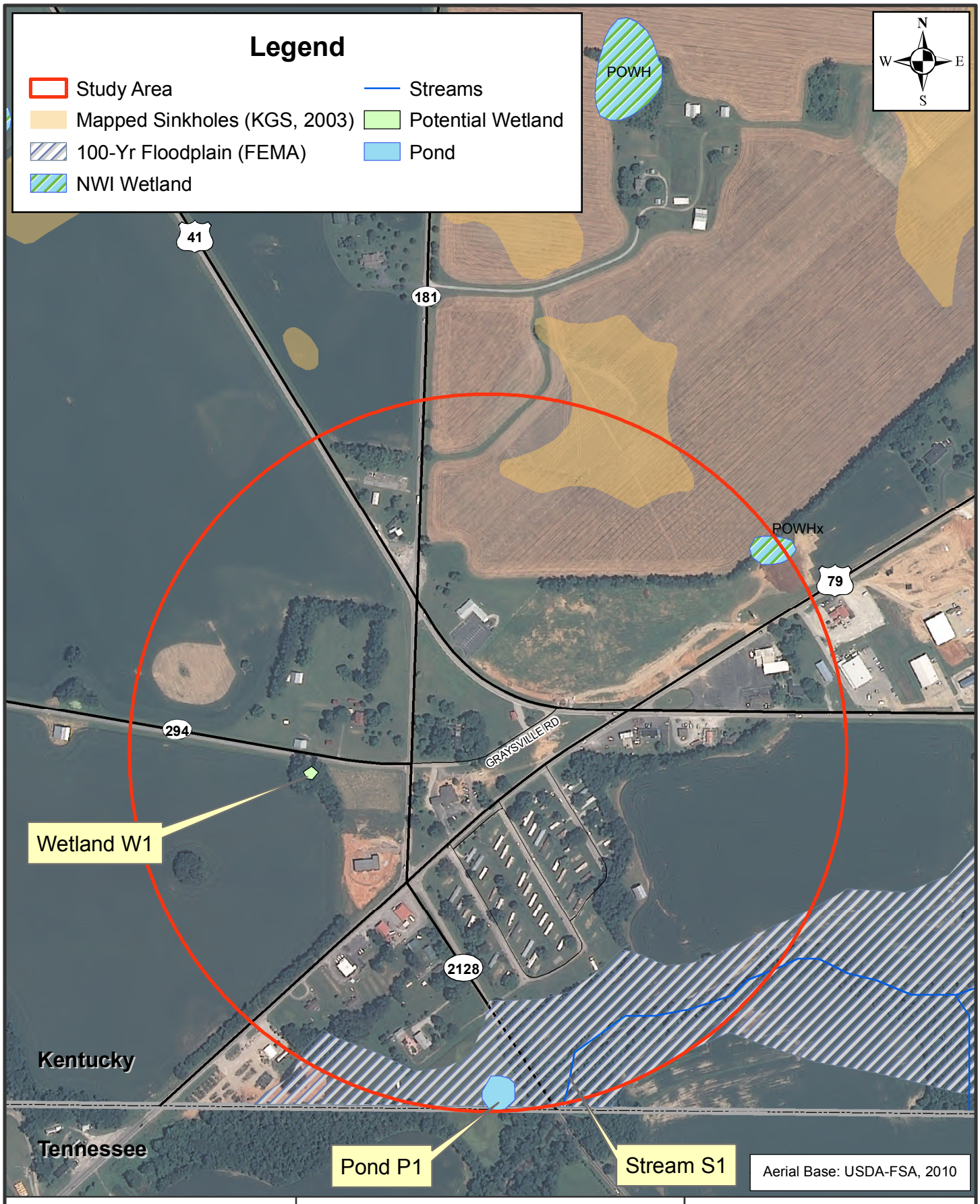
ENTRAN

Environmental Overview

Todd County Scoping Study
Todd County, Kentucky; Item 3-8630.00

Attachment A1

Project Location Map



ENTRAN

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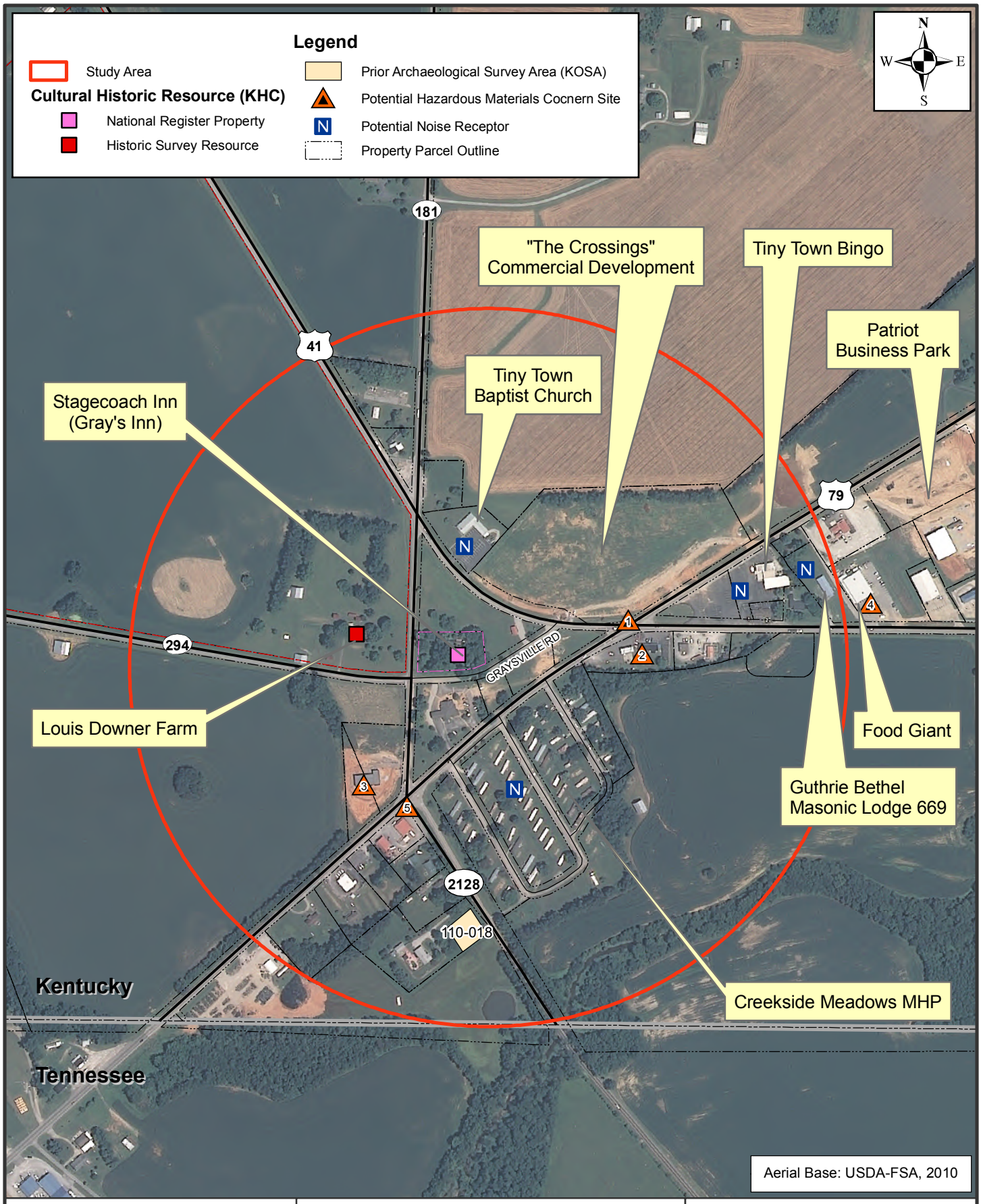
Environmental Overview

Todd County Scoping Study
Todd County, Kentucky; Item 3-8630.00

Attachment A2

Environmental Footprint
Natural Environment



ENTRAN

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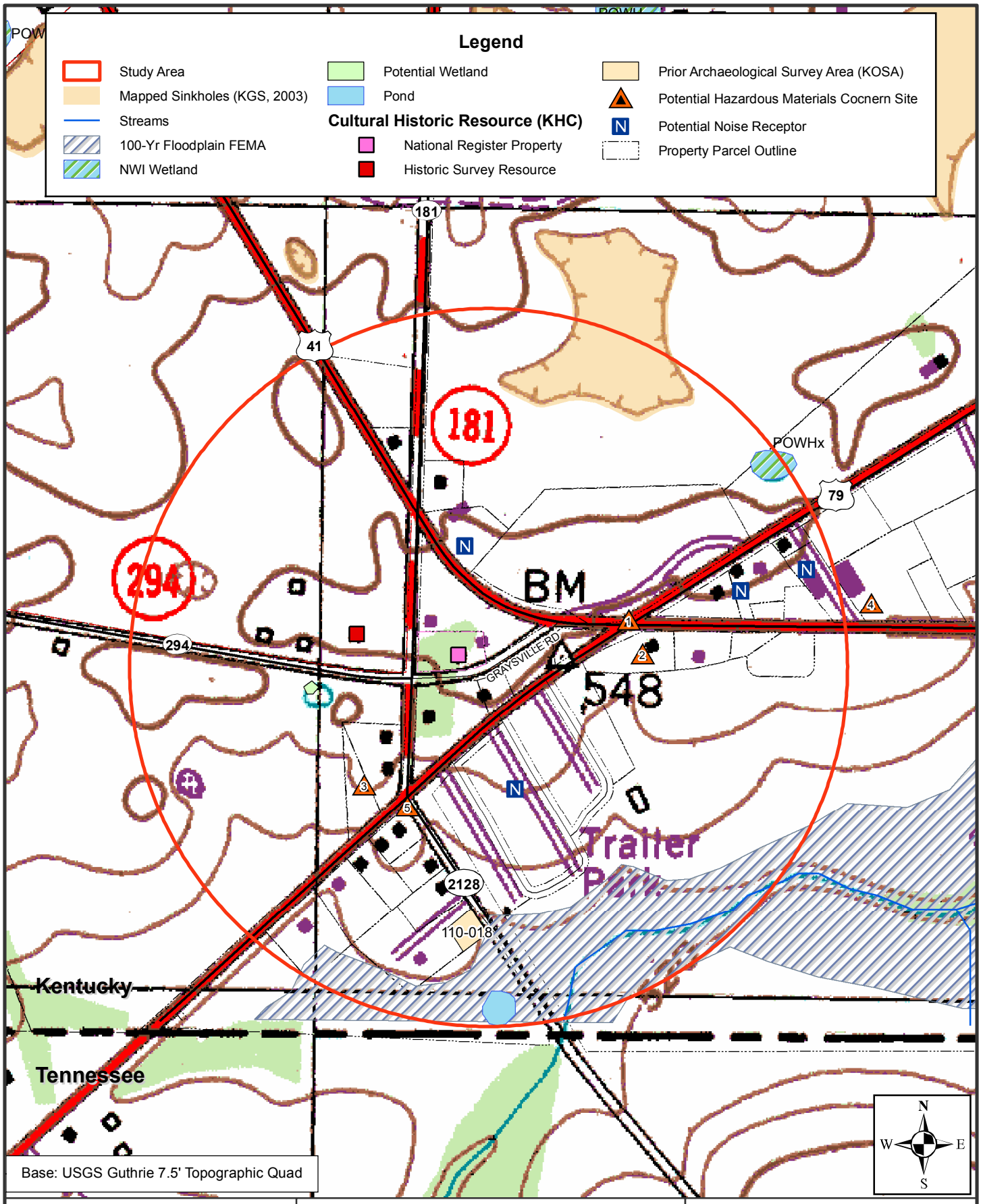
Environmental Overview

Todd County Scoping Study
Todd County, Kentucky; Item 3-8630.00

Attachment A3

Environmental Footprint
Human Environment



Environmental Overview

Todd County Scoping Study
Todd County, Kentucky; Item 3-8630.00

Attachment A4

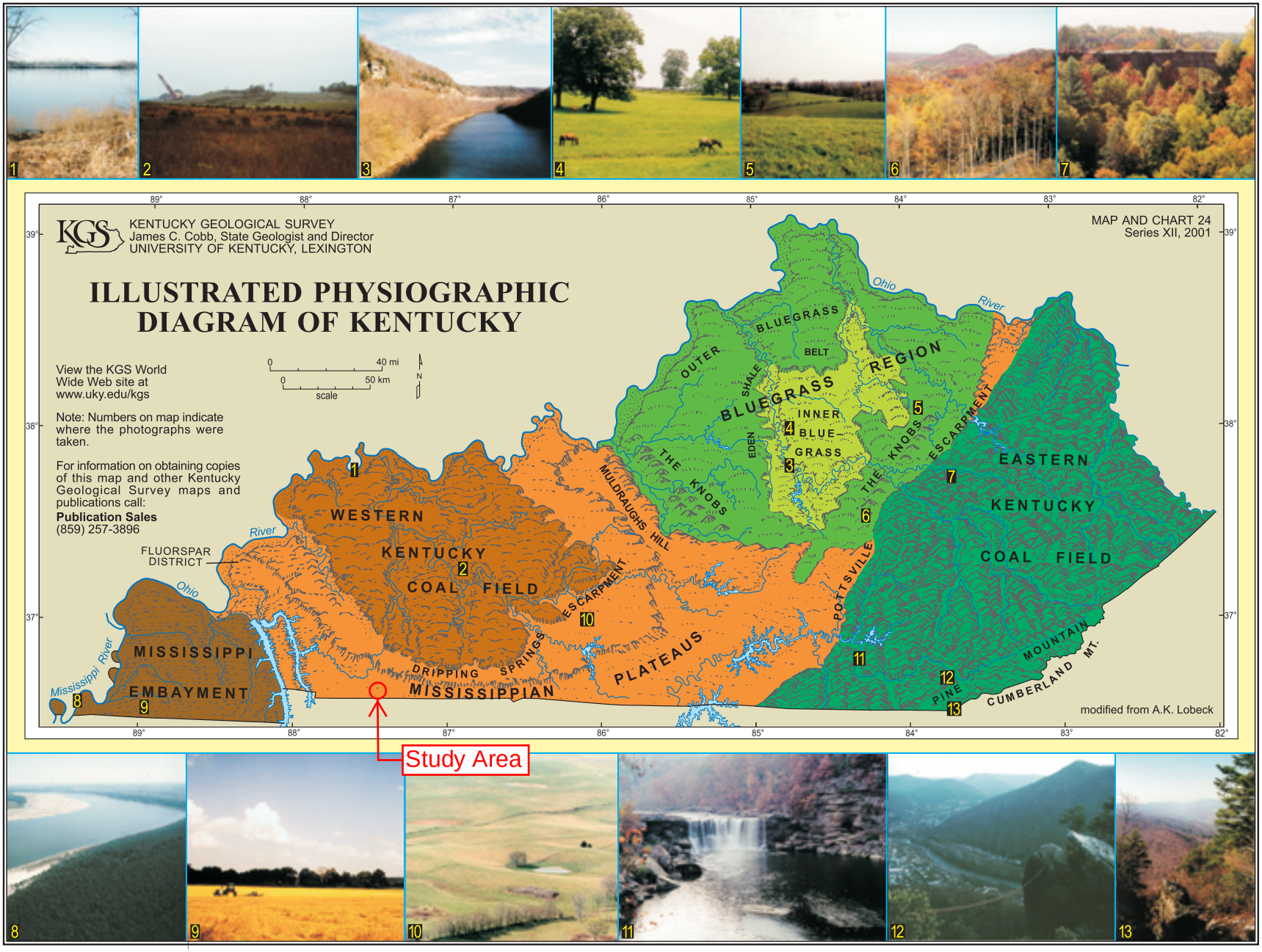
Project Area Map
USGS Base

ATTACHMENT B
Supplemental Information

B1. **Physiographic Regions of Kentucky**
B2. **Ecoregions of Kentucky**
B3. **Geologic Quadrangle Map, Guthrie Quadrangle**
B4. **Todd County Karst Areas (2 Maps and Legend)**
B5. **Project Area and Vicinity Soils Map**
Hydric Soils Map
Prime Farmland Soils Map
B6. **FEMA FIRMette of Project Area Vicinity**
B7. **Availability of Ground Water in Caldwell, Christian, Crittenden, Livingston, Lyon, Todd and Trigg Counties, Kentucky (HA-34)**
B8. **USFWS ECOS List of Federal-Listed Species in Todd County, Kentucky**
Kentucky Ecological Services Field Office List of Endangered, Threatened, & Candidate Species in Todd County, Kentucky
IPCS Conservation Measures Report
B9. **KDFWR List of State-Listed Species in Todd County, Kentucky**
B10. **KSNPC Response 3/22, 2011**
B11. **USFWS Known Myotis sodalis Habitat-Project Vicinity Map**
B12. **KSS Response 4/19/2011**
B13. **NPS Land & Water Conservation Fund Detailed Listing of Grants, Todd County 12/10/2010**
B14. **USEPA Envirofacts Warehouse Reports**

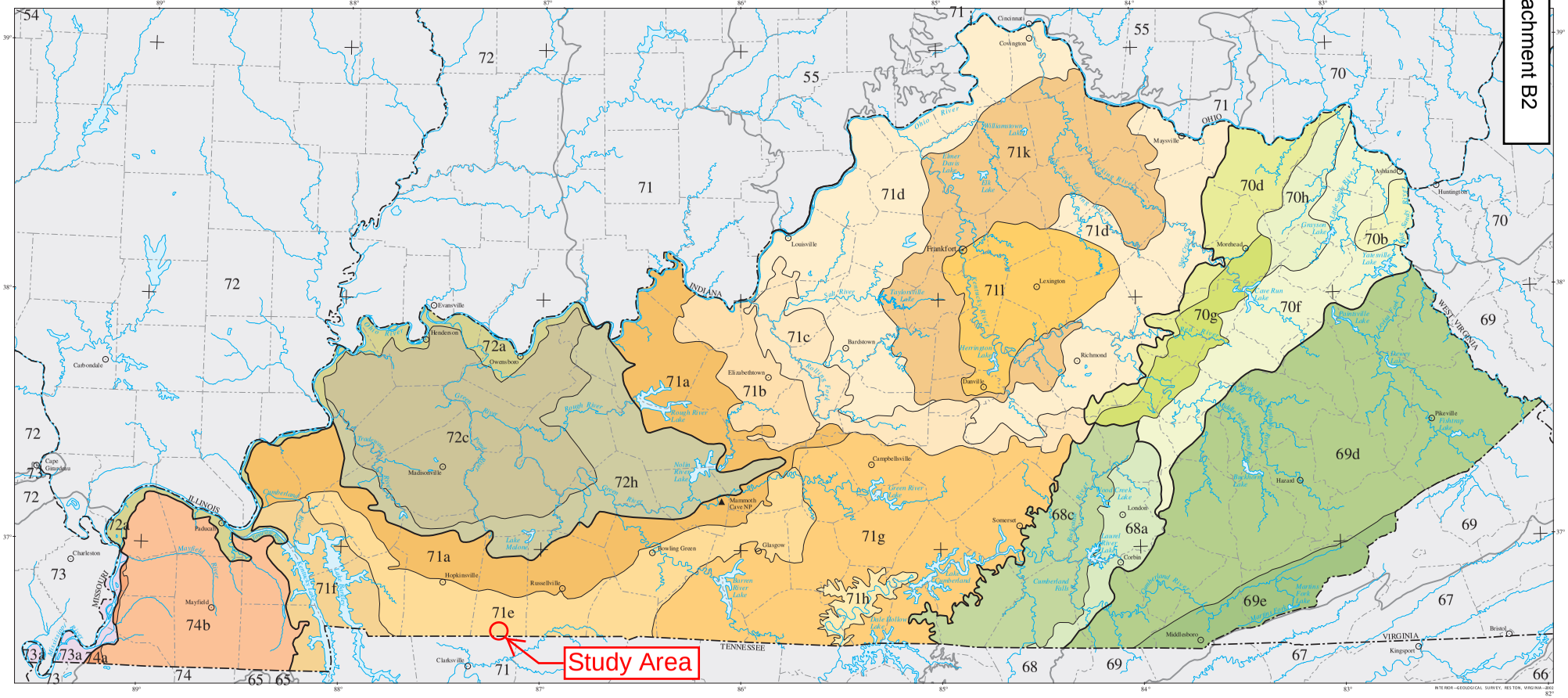
Appendix 1.6
Physiographic Regions of Kentucky

Attachment B1



Ecoregions of Kentucky

Attachment B2



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CITING THIS POSTER: Woods, A.J., Omernik, J.M., Martin, W.H., Pond, G.J., Andrews, W.M., Call, S.M, Comstock, J.A., and Taylor, D.D., 2002, Ecoregions of Kentucky (color poster with map, descriptive text, summary tables, and photographs): Reston, VA., U.S. Geological Survey (map scale 1:1,000,000).

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Level III ecoregion
Level IV ecoregion
County boundary
State boundary
International boundary

15 10 5 0 30 60 mi
30 20 10 0 60 120 km

Albers Equal Area Projection
Standard parrallels 37° N and 39° N

68 Southwestern Appalachians
- 68a Cumberland Plateau
- 68c Plateau Escarpment

69 Central Appalachians
- 69d Dissected Appalachian Plateau
- 69e Cumberland Mountain Thrust Block

70 Western Allegheny Plateau
- 70b Monongahela Transition Zone
- 70d Knobs–Lower Scioto Dissected Plateau
- 70f Ohio/Kentucky Carboniferous Plateau
- 70g Northern Forested Plateau Escarpment
- 70h Carter Hills

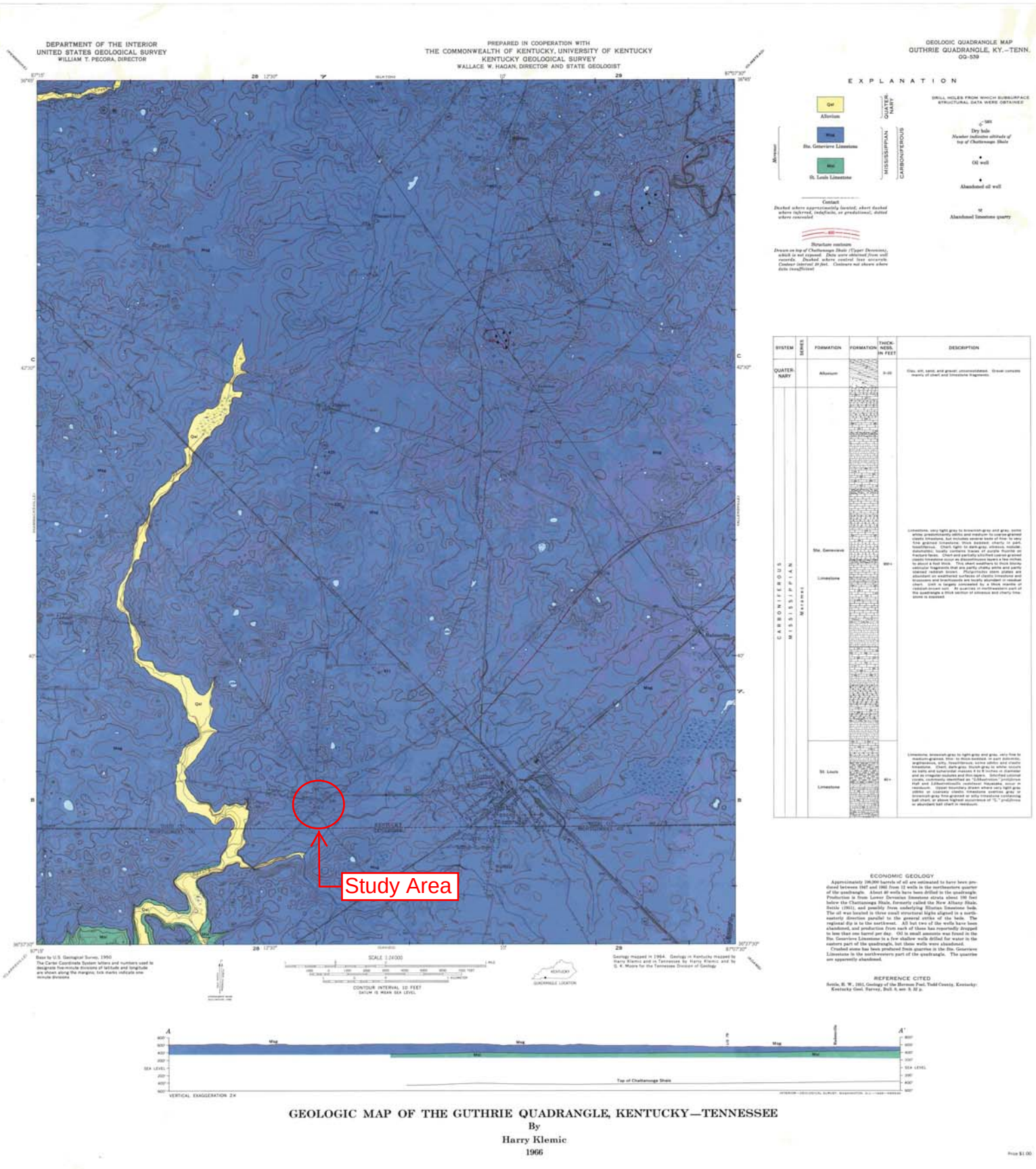
71 Interior Plateau
- 71a Crawford–Mammoth Cave Uplands
- 71b Mitchell Plain
- 71c Knobs–Norman Upland
- 71d Outer Bluegrass
- 71e Western Pennyroyal Karst Plain
- 71f Western Highland Rim
- 71g Eastern Highland Rim
- 71h Outer Nashville Basin
- 71k Hills of the Bluegrass
- 71i Inner Bluegrass

72 Interior River Valleys and Hills
- 72a Wabash–Ohio Bottomlands
- 72c Green River–Southern Wabash Lowlands
- 72h Caseyville Hills

73 Mississippi Alluvial Plain
- 73a Holocene Meander Belts

74 Mississippi Valley Loess Plains
- 74a Bluff Hills
- 74b Loess Plains

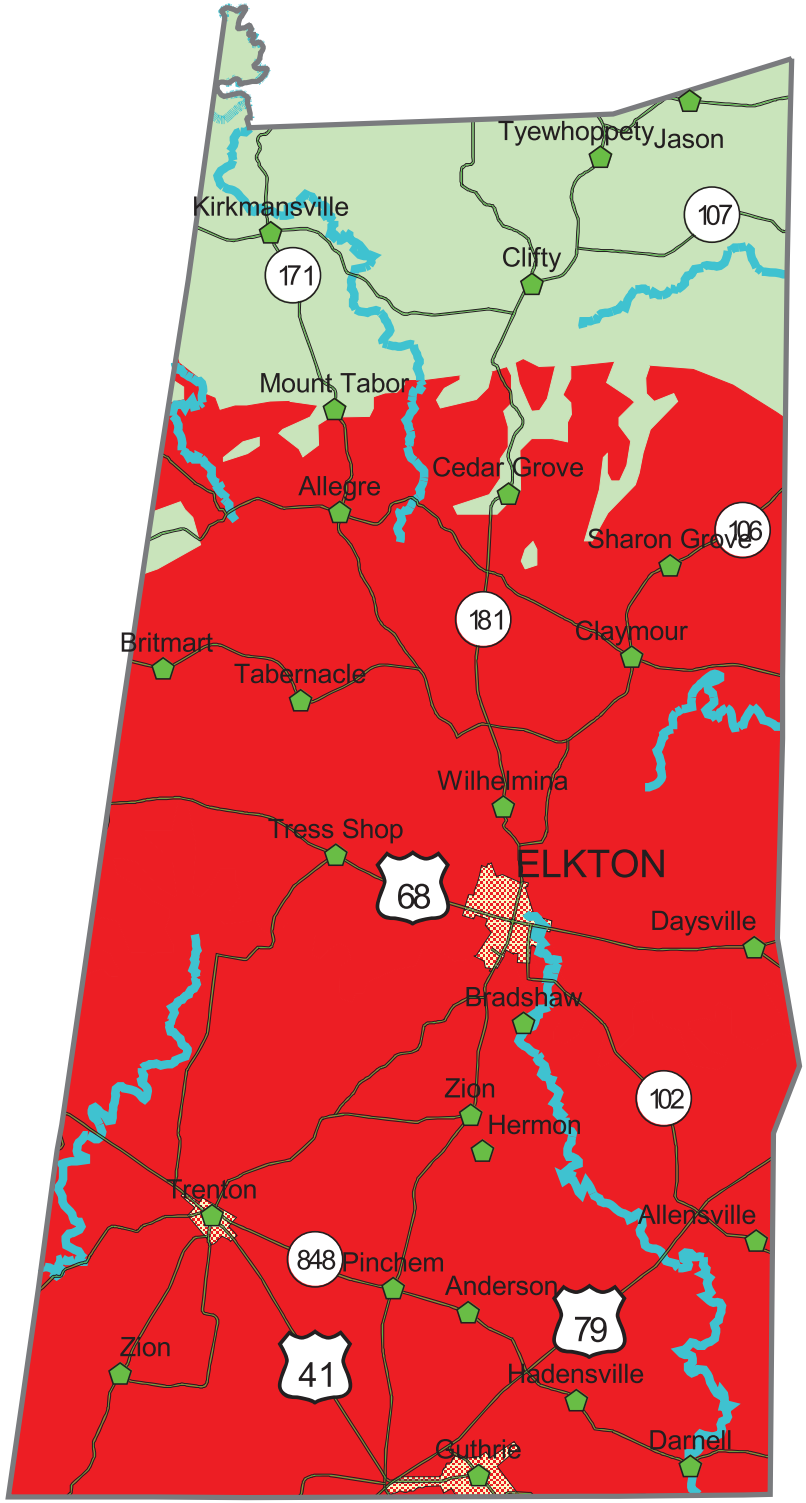
Attachment B3



Note: Reduced from original size, not intended for fine scale viewing; see original source document for details

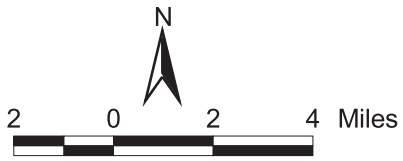
Todd County Karst Areas

(Source: Geologic Map of Kentucky, Scale, 1:500,000)

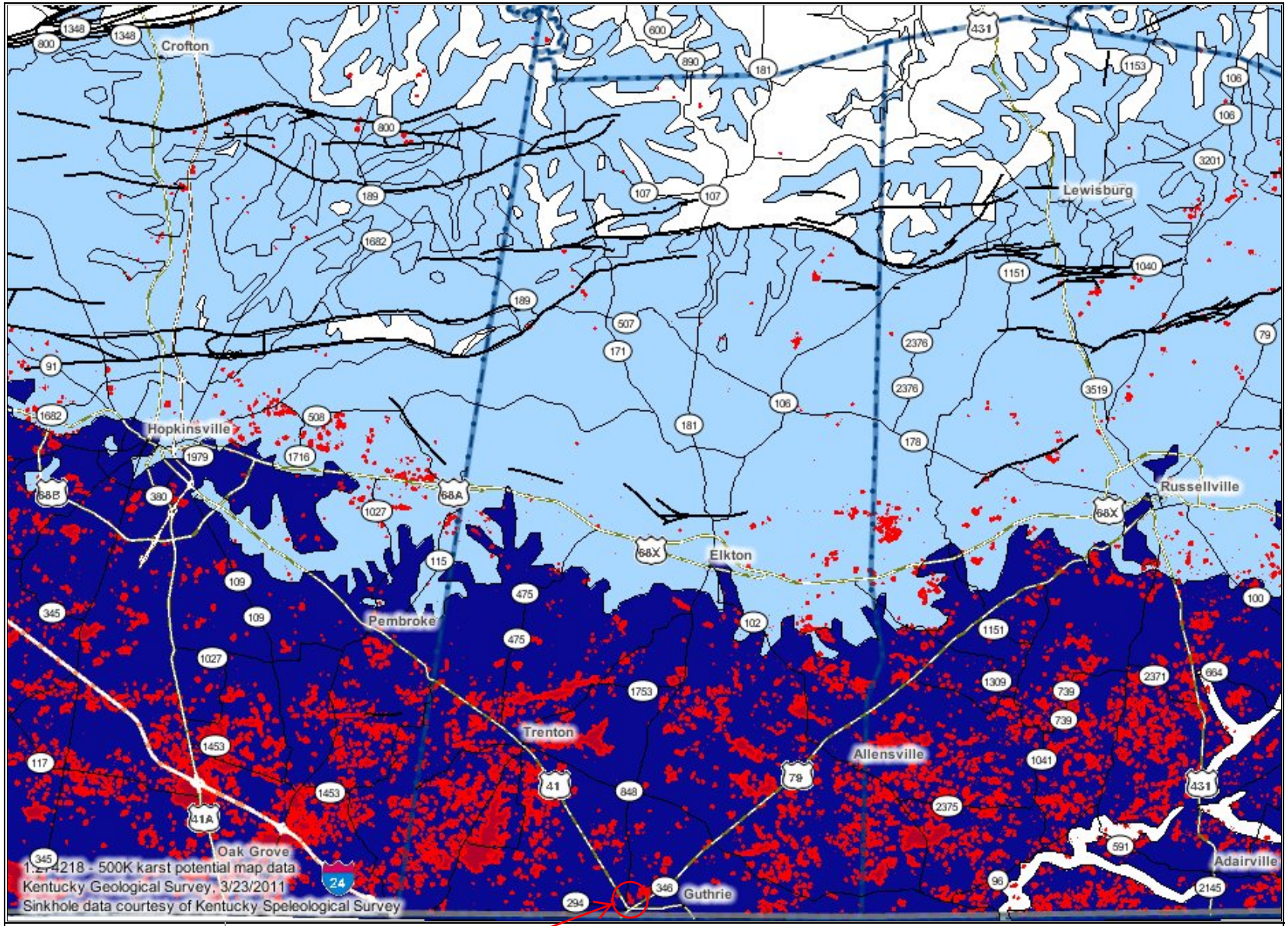


Intense Karst

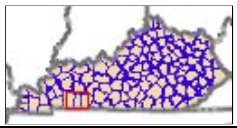
Non-karst



Attachment B4-2



Current Scale = 1:274,218



- Display Legend For Printing

PRINT THIS PAGE

Attachment B4-3

Kentucky Geological Survey
Geologic Information Service
Map Legend

Karst Potential Index:

- **intense**
- **prone**
- **non-karst**

Symbols:

- contacts / structural features:

- fault
- fault - concealed
- fault - secondary
- fault - projected

- sinkhole location

PRINT THIS PAGE

NOTE: in order to print colors, make sure your browser is enabled to print background colors.
Internet Explorer Instructions: Go to Tools --> Internet Options --> Advanced --> Under the "Printing" header, click the "Print background colors and images" box.
Firefox Instructions: Go to File --> Page Setup --> Click the "Print Background (colors & images)" box.

Attachment B4-4

Karst Potential Classification

The karst potential map shows the tendency for geologic units to develop or have karst features such as sinkholes, springs, caves, or other solution features. The classification is based on lithology. The lithologic characteristics used are percentage of $CaCO_3$ in the carbonate portion of the unit, grain size, bedding thickness, and insoluble components. Insoluble components may occur as a mineral grains within the limestone lithology or as interbeds of noncarbonate rock. These criteria were evaluated for all rock units and combined rock units that appear on the map, and resulted in about 50 distinct rankings. These rankings were reduced to three to five simplified classes by analysis of their frequency of distribution and the scale of the map data.

1:500,000 (small scale) map data (viewed at scales 1:150,001 and smaller) displays three classes:

INTENSE
Areas underlain by bedrock with high potential for karst development. May exhibit mature karst, including caves, sinkholes, and springs where they crop out.

PRONE
Areas underlain by bedrock with moderate potential for karst development. Development of karst features in this category is variable and dependent on site-specific conditions. Occurrence of caves may be influenced by physiographic setting, unit thickness, and lithology.

NONKARST
Areas underlain by bedrock with limited or no potential for karst development. Karst features rare or absent.

1:24,000 (large scale) map data (viewed at scales 1:150,000 and greater) displays five classes:

VERY HIGH
Thick-bedded, typically fine-grained and pure limestone units with little or no insoluble content. Will exhibit mature karst, including caves, sinkholes, and springs where they crop out.

HIGH
Limestone units with low insoluble content, but varied grain size and bedding characteristics. Likely to contain karst features. Occurrence of caves may be influenced by physiographic setting, unit thickness, and lithology.

MEDIUM
Limestone units and coarse-grained, or siliciclastic units with limestone interbeds. Limestone units may contain a high percentage of insoluble minerals. Siliciclastic units will only be karst-prone where limestone beds occur in the near surface. Development of karst features in this category is variable and dependent on site-specific conditions.

LOW
Siliciclastic units with minor limestone beds or units primarily composed of dolomite. Karst features are poorly developed or absent.

NONKARST
Consolidated or unconsolidated siliciclastic units. Karst features rare or absent.

*Note: A more detailed and precise karst classification method is in development. When the testing and evaluations are complete, the method will be used to add enhanced categories in the karst classification.

Custom Soil Resource Report
Soil Map

Attachment B5-1

Map Scale: 1:10,800 if printed on A size (8.5" x 11") sheet.

N

Meters
0 100 200 400 600

Feet
0 500 1,000 2,000 3,000

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

Special Line Features
- Gully
- Short Steep Slope
- Other

Political Features
- Cities

Water Features
- Oceans
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:10,800 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at scales ranging from 1:15,840 to 1:20,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 16N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Montgomery County, Tennessee
Survey Area Data: Version 6, Jan 5, 2007

Soil Survey Area: Todd County, Kentucky
Survey Area Data: Version 9, Oct 16, 2009

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

Date(s) aerial images were photographed: 8/9/2006

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

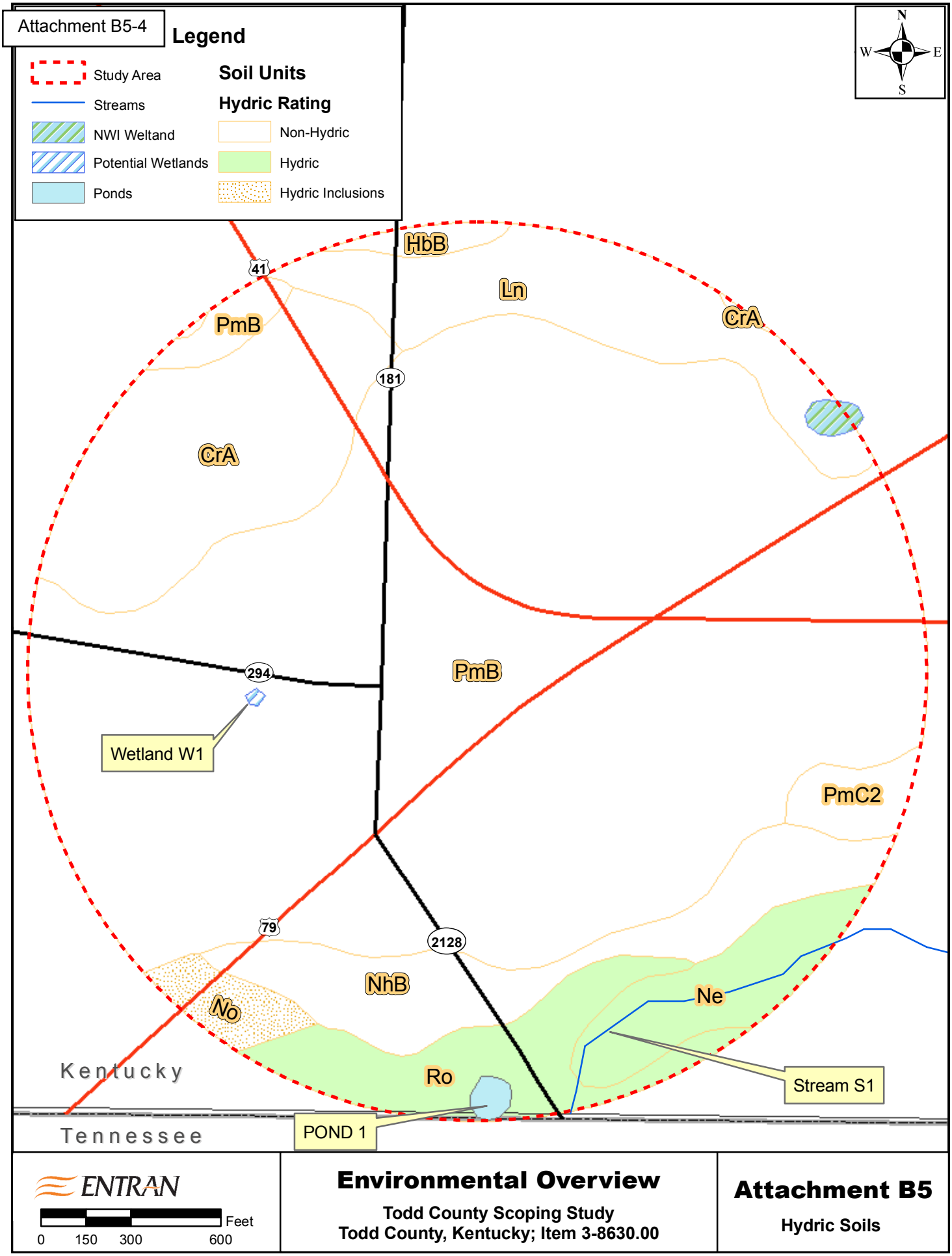
Montgomery County, Tennessee (TN125)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
Ar	ARRINGTON SILT LOAM	0.1	0.0%
Gu	GUTHRIE SILT LOAM	0.8	0.1%
Ne	NEWARK SILT LOAM	0.0	0.0%
PeB	PEMBROKE SILT LOAM, 2 TO 5 PERCENT SLOPES	0.3	0.0%
Subtotals for Soil Survey Area		**1.2**	**0.2%**
Totals for Area of Interest		**635.1**	**100.0%**

Todd County, Kentucky (KY219)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
CrA	Crider silt loam, 0 to 2 percent slopes	23.1	3.6%
CrB	Crider silt loam, 2 to 6 percent slopes	4.4	0.7%
HbB	Hammack-Baxter complex, 2 to 6 percent slopes	25.5	4.0%
HbC2	Hammack-Baxter complex, 6 to 12 percent slopes, eroded	34.9	5.5%
La	Lawrence silt loam, occasionally flooded	5.7	0.9%
Ln	Lindside silt loam, occasionally flooded	38.0	6.0%
Ne	Newark silt loam, occasionally flooded	34.4	5.4%
NhB	Nicholson silt loam, 2 to 6 percent slopes	36.0	5.7%
No	Nolin silt loam, occasionally flooded	22.8	3.6%
PmB	Pembroke silt loam, 2 to 6 percent slopes	343.4	54.1%
PmC2	Pembroke silt loam, 6 to 12 percent slopes, eroded	13.8	2.2%
Ro	Robertsville silt loam, occasionally flooded	48.2	7.6%
VeC2	Vertrees silty clay loam, 6 to 12 percent slopes, eroded	3.6	0.6%
Subtotals for Soil Survey Area		**633.9**	**99.8%**
Totals for Area of Interest		**635.1**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape,



Environmental Overview

Todd County Scoping Study
Todd County, Kentucky; Item 3-8630.00

Attachment B5

Hydric Soils

Attachment B5-5

ENTRAN

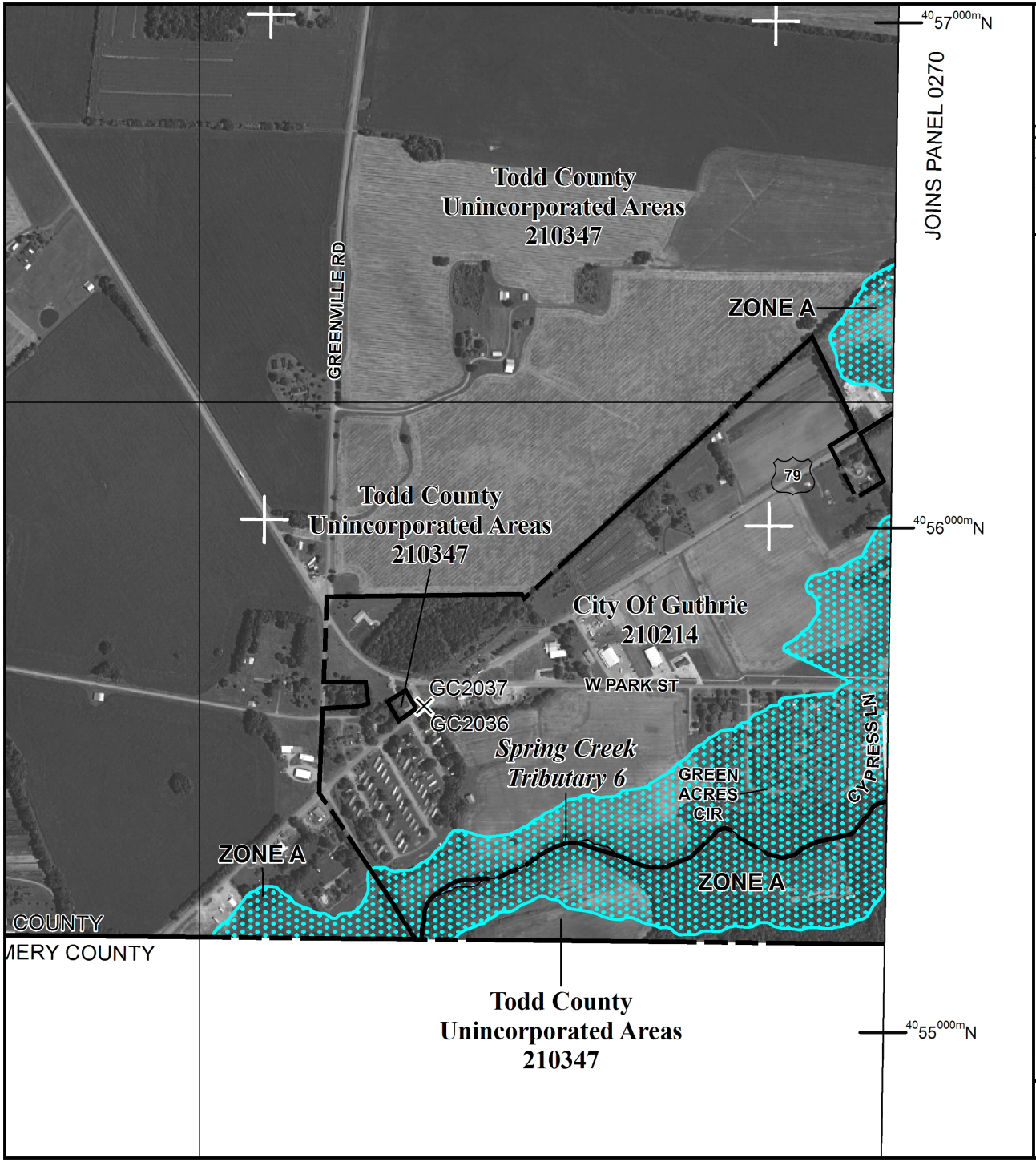
0 170 340 680 Feet

Environmental Overview

Todd County Scoping Study
Todd County, Kentucky; Item 3-8630.00

Attachment B5

Prime Farmland Soils



MAP SCALE 1" = 1000'

0 1000 2000 FEET

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0265C

FIRM

FLOOD INSURANCE RATE MAP

TODD COUNTY, KENTUCKY AND INCORPORATED AREAS

PANEL 265 OF 300

(SEE LOCATOR DIAGRAM OR MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
GUTHRIE, CITY OF	210214	0265	C
TODD COUNTY	210347	0265	C

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

EFFECTIVE DATE
JULY 22, 2010

MAP NUMBER
21219C0265C

Kentucky UNBRIDLED SPIRIT

State of Kentucky
Federal Emergency Management Agency

Attachment B6

Attachment B7-1

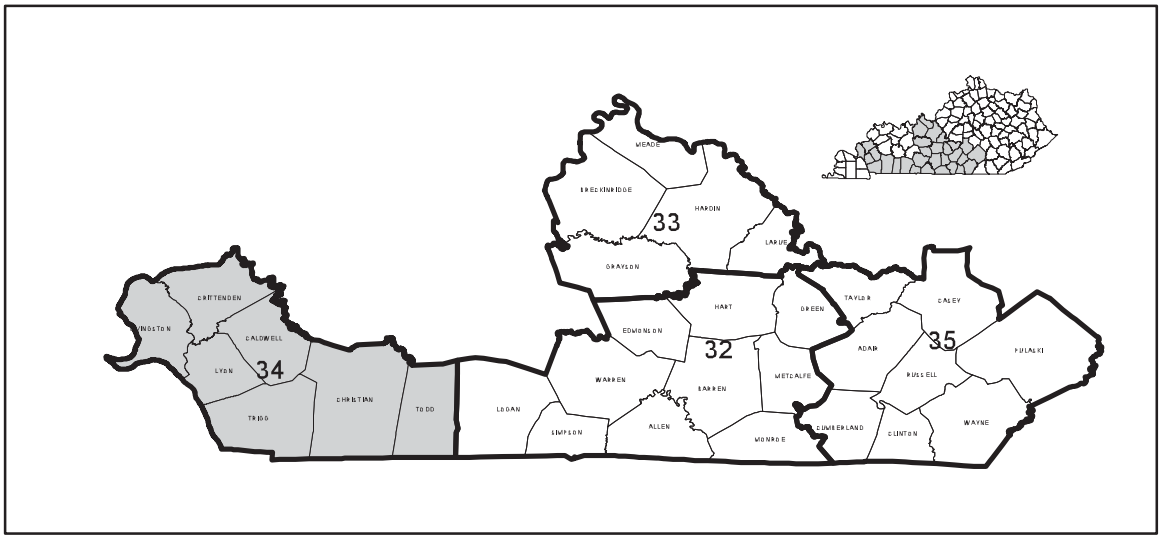
DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

PREPARED IN COOPERATION WITH
THE COMMONWEALTH OF KENTUCKY
AND THE KENTUCKY GEOLOGICAL SURVEY
UNIVERSITY OF KENTUCKY

AVAILABILITY OF GROUND WATER IN CALDWELL, CHRISTIAN, CRITTENDEN, LIVINGSTON, LYON, TODD, AND TRIGG COUNTIES, KENTUCKY

By
T.W. Lambert and R.F. Brown

HYDROLOGIC INVESTIGATIONS
ATLAS HA-34



INDEX MAP OF THE MISSISSIPPIAN PLATEAU REGION, KENTUCKY, SHOWING COUNTY GROUPS AND AREA OF THIS ATLAS

This is 1 of 4 atlases (HA-32 to HA-35) showing geology and availability of ground water in the Mississippian Plateau region, Kentucky U.S. Geological Survey Water-Supply Paper 1603 contains a text description and illustrations providing further information on the occurrence and quality of ground water in the Mississippian Plateau region.

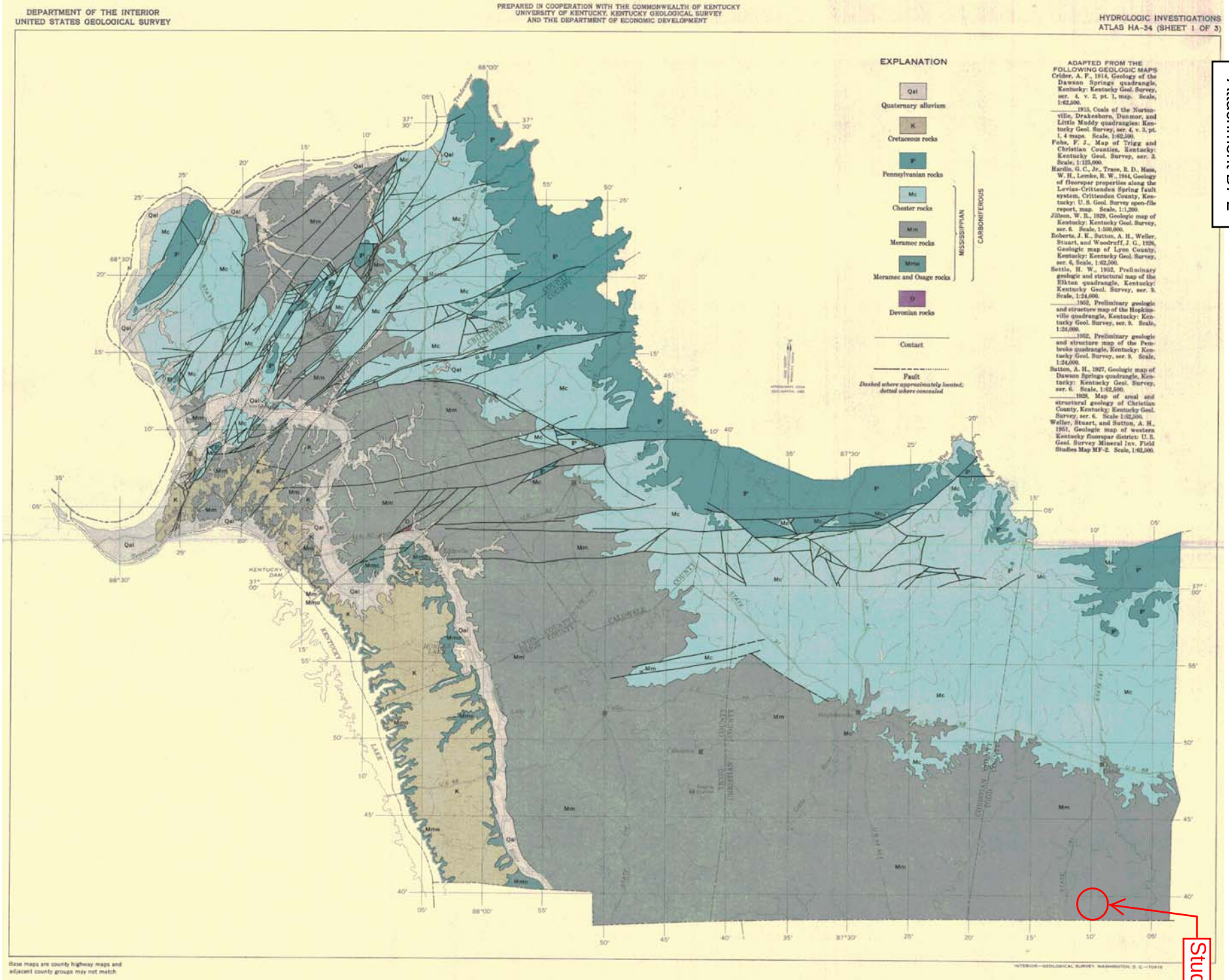
PUBLISHED BY THE U.S. GEOLOGICAL SURVEY

WASHINGTON, D.C.

1963

Attachment B7-2

Note: Reduced from original size, not intended for fine scale viewing; see original source document for details



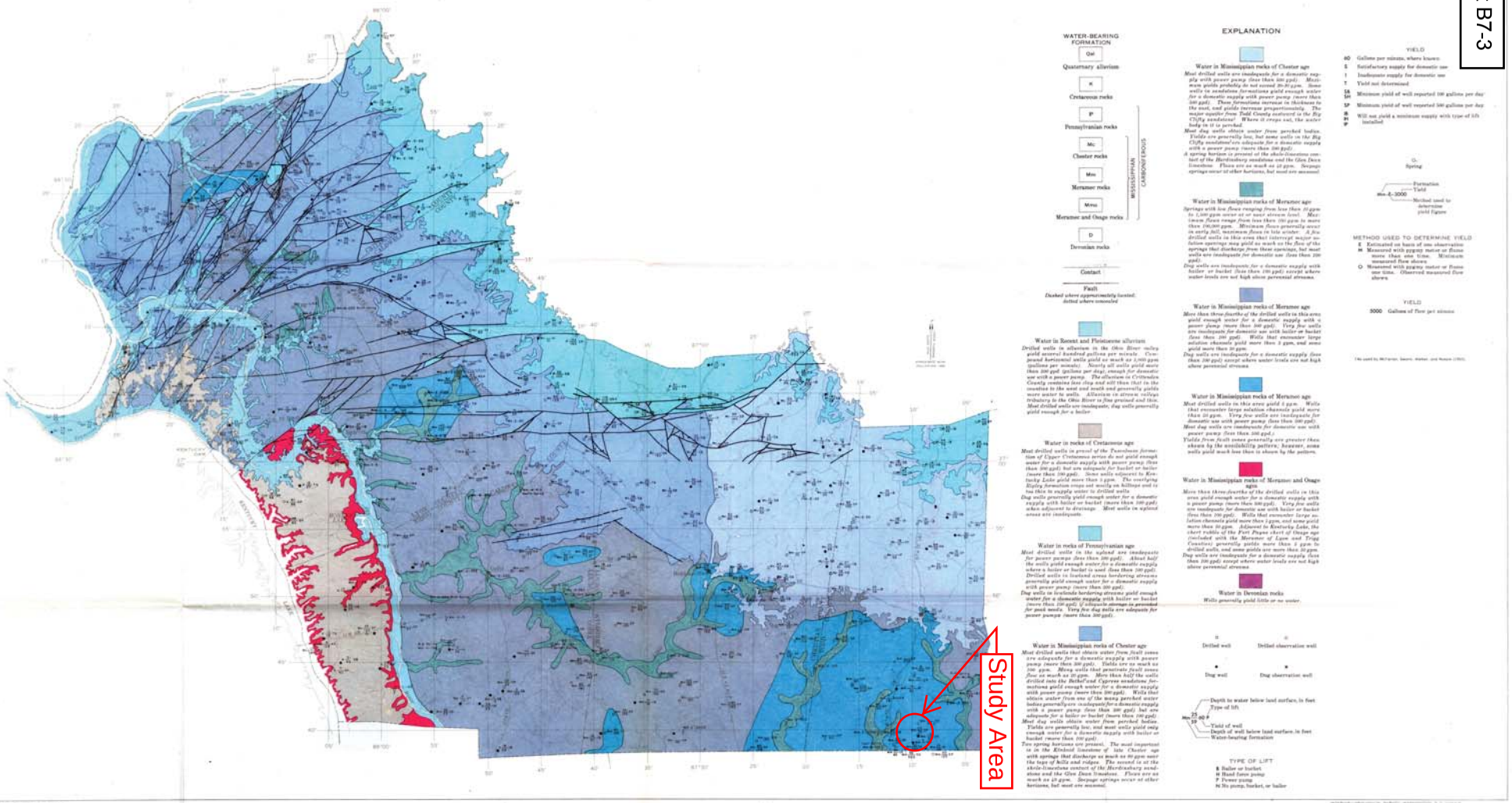
Attachment B7-3

Note: Reduced from original size, not intended for fine scale viewing; see original source document for details

DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

PREPARED IN COOPERATION WITH THE COMMONWEALTH OF KENTUCKY
UNIVERSITY OF KENTUCKY, KENTUCKY GEOLOGICAL SURVEY
AND THE DEPARTMENT OF ECONOMIC DEVELOPMENT

HYDROLOGIC INV
ATLAS HA-34 (S



Base maps are county highway maps and adjacent county groups may not match.

AVAILABILITY OF GROUND WATER IN CALDWELL, CHRISTIAN, CRITTENDEN, LIVINGSTON, LYON, TODD, AND TRIGG COUNTIES, KENTUCKY

By

T. W. Lambert and R. F. Brown

SCALE 1:250 000

1963

HYDROLOGIC INVESTIGATIONS
ATLAS HA-34 (SHEET 2 OF 3)

Price $ 1.25 per set

Attachment B7-4

DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

PREPARED IN COOPERATION WITH THE COMMONWEALTH OF KENTUCKY
UNIVERSITY OF KENTUCKY, KENTUCKY GEOLOGICAL SURVEY
AND THE DEPARTMENT OF ECONOMIC DEVELOPMENT

HYDROLOGIC INVESTIGATIONS
ATLAS HA-34 (SHEET 3 OF 3)

SYSTEM	SERIES	FORMATION	THICKNESS (IN FEET)	SECTION	LITHOLOGY	TOPOGRAPHY	WATER-BEARING CHARACTER
QUATERNARY	Recent and Pleistocene	Alluvium	0–120		Silt, clay, and some sand and gravel in tributary valleys. Sand, gravel, and clay in major stream valleys.	Terraces and flood plains of Cumberland, Tennessee, and Ohio Rivers and tributaries.	Yields several hundred gallons a minute to drilled wells in the alluvium of the Ohio River valley and its two main tributaries, Cumberland and Tennessee River valleys. Nearly all wells produce more than 500 gpm (gallons per minute), enough water for domestic use with a power pump. Locally, north of Smithland, Livingston County, wells must penetrate the underlying bedrock to obtain an adequate supply. Alluvium in stream valleys tributary to the three major rivers is fine-grained and thin; most wells in these areas furnish less than 100 gpd (gallons per day), not enough for a bailer or bucket.
TERTIARY		Sand and gravel	0–40		Gravel, iron-stained, mainly chert, and small amounts of quartzite. Pebbles subangular to rounded, average diameter ½ to 1 in. Medium to coarse, orange or brick-red sand. Mostly chert and quartzite but contains some feldspar, hornblende, kyanite, and zircon. Sand and pebbles in places cemented by iron oxide into a hard conglomeratic sandstone.	Underlies dissected uplands between Cumberland and Tennessee Rivers above altitude of approximately 380 feet.	Yields enough water for a domestic supply (more than 100 gpd) to dug wells of large storage capacity. Only locally is there a sufficient thickness to obtain a domestic supply.
CRETACEOUS	Upper Cretaceous	Ripley	0–50		Sand and interbedded clay; thin, indurated beds at sand-clay contacts. Sand may be white, buff, yellow, or red. Clay ranges from white to dark gray. Formation mostly silt and clay in some areas.	Underlies dissected uplands and ridges between Cumberland and Tennessee Rivers; truncated and covered by the alluvium of the Ohio and Tennessee Valleys.	Yields almost no water to wells owing to its small thickness and its topographic situation, except south of Smithland, Livingston County, where it underlies the alluvium.
		Tuscaloosa	0–200		Rounded chert gravel in matrix of angular chert sand and tripolitic clay. Average diameter of gravel about 1½ in.	Underlies dissected ridges between Cumberland and Tennessee Rivers.	Most drilled wells in the gravel of the Tuscaloosa formation are adequate for a bailer (more than 100 gpd.) Yields adjacent to Kentucky Lake may exceed 5 gpm. Tripolitic clay is present locally and wells penetrating it are inadequate (less than 100 gpd).
PENNSYLVANIAN		Caseyville sandstone	30–400		Sandstone containing interbedded sandy shale and coal. Quartzose conglomerate present at base in some places.	Underlies dissected uplands adjacent to Tradewater and Pond Rivers. Forms major escarpment. Occurs in faulted zone of the fluorspar area.	Yields enough water for a domestic supply with a power pump (more than 500 gpd) to drilled wells in lowland areas bordering streams and locally in broad upland areas. Wells in small areas upland generally are inadequate (less than 100 gpd).
MISSISSIPPIAN	Chester	Kinkaid limestone	0–200		Limestone, light- to medium-gray, dense, thin-bedded, alternating with light-gray chert, and gray to black shale; unit red and olive green in places. Sandstone in lower part of formation.	Underlie gently rolling upland having some sinkholes. Form moderate to steep slopes.	Most drilled wells that obtain water from fault zones are adequate for a domestic supply with a power pump (more than 500 gpd). Yields are as much as 100 gpm. Flows of as much as 20 gpm are obtained from fractures along fault zones and adjacent beds. Most flowing wells are in sandstone. Water is usually obtained from the hanging walls or gouge zones of faults. Sandstone formations yield enough water for a domestic supply with a bailer or bucket (more than 100 gpd) where there is an adequate saturated thickness in perched water zones. Most shallow wells in broad uplands are dug and usually yield more than 100 gpd, but yields are not dependable in dry years. Drilled wells produce enough water for a bailer (more than 100 gpd) and most of these wells produce enough water for a power pump (more than 500 gpd). Minor spring horizons occur near the base of the sandstone on discontinuous shale beds. Very few of the springs are adequate for a domestic supply, and many go dry in late fall or winter. Limestone formations yield small to adequate supplies from solution openings. In lowland areas bordering streams, some wells furnish enough for a domestic supply with a power pump (more than 500 gpd). Most wells in upland areas are inadequate for a domestic supply with bailer or bucket (less than 100 gpd). On uplands deep wells that penetrate solution openings in limestone may produce more than 5 gpm, but most deep wells on uplands are inadequate for a domestic supply with bailer or bucket (less than 100 gpd). Close to outcrop areas, particularly near major escarpments, yields from perched water bodies generally are inadequate during dry periods. Springs occur at the base of many limestone formations where they crop out on escarpments and hillsides. Adjacent to large upland areas, springs yield as much as 100 gpm and low flows are more than 5 gpm from some springs.
		Degonia sandstone	10–30		Sandstone, yellow to brown, thin-bedded, flaggy, crossbedded, ripple-marked; calcareous in places.		
		Clore limestone	30–60		Limestone, gray, shaly, thin-bedded; interbedded with argillaceous and calcareous shale.		
		Palestine sandstone	40–80		Sandstone, light-gray, medium-grained, thin-bedded to massive.	Forms minor bench on hillsides. Underlies gently rolling upland.	
		Menard limestone	80–140		Limestone, dark-gray, dark olive-tan, and black, fine-grained to sublithographic, commonly argillaceous; interbedded with dark-gray fissile shale.	Underlie flat uplands. Form gentle slopes on hillsides.	
		Waltersburg sandstone	20–60		Sandstone, medium-gray, fine-grained, shaly; massive in places. In lower part consists chiefly of very dark gray shale.		
		Vienna limestone	20–40		Shale, dark-gray, fissile; also dark-gray, clayey, calcareous in upper part, alternated with medium- to dark-gray fine-grained to crystalline limestone and dark bluish-gray chert.		
		Tar Springs sandstone	100–200		Sandstone, light- to medium-gray, fine-grained; shaly limestone containing interbedded dark-gray shale and thin sandstone lenses and thin coal beds.	Underlies gently rolling upland. Forms minor bench on hillsides.	
		Glen Dean limestone	40–90		Limestone, light- to medium-gray, fine-grained to coarsely crystalline, crinoidal; contains medium-gray shale beds. Limestone coarsely oolitic in places. Sandy shale and sandstone near middle of formation.	Underlies gently rolling upland. Forms a gradual slope above Hardinsburg bench.	
		Hardinsburg sandstone	20–140		Sandstone, light-gray, fine- to medium-grained, massive; dark shale horizon in middle. Thin, basal conglomerate present in places.	Forms minor escarpment, modified in many places by faults. Underlies broad rolling uplands.	
		Haney limestone[1]	30–170		Limestone, light-gray, coarsely crystalline, argillaceous in places. Chert and gray shale interbedded with limestone.	Underlie gently rolling upland. Form steep slope below minor Hardinsburg sandstone escarpment. Frailey shale grades into Big Clifty sandstone[2] eastward from Christian County to form a major escarpment.	
		Golconda: Frailey shale[1]			Shale, light- to dark-gray, slightly calcareous. Gray limestone interbedded with shale. Grades into Big Clifty sandstone[2] eastward from Todd County.		
		Golconda: Beech Creek limestone[1]			Limestone, dark-gray, very hard, slightly argillaceous.		
		Cypress sandstone	25–125		Sandstone, light- to greenish-gray, fine- to medium-grained. Thin, basal conglomerate, and thin coal present in places. Dark shale in middle or lower part.	Forms a major escarpment, but broken by faults in fluorspar area. Eastward from Christian County the escarpment wedges out against the overlying Big Clifty[2]. Underlies broad flat uplands.	
		Ridenhower shale[1]	1–100		Shale, dark-gray, slightly sandy, and sandstone. Nodular impure limestone predominant to east.	Forms moderate to rolling slope below Cypress sandstone escarpment; modified by faults in fluorspar area.	
		Bethel sandstone[1]	25–125		Sandstone, light-gray, medium-grained, massive. In places a conglomerate is present at the base.	Forms lowest major escarpment from fluorspar area to Todd County; escarpment broken by faults in fluorspar area. Underlies broad rolling upland.	
		Paoli limestone[1]	20–100		Limestone, medium- to dark-gray, medium- to coarse-grained, crystalline, oölitic in places, and interbedded dark greenish-gray shale, commonly calcareous in places.	Forms a moderate slope under Bethel sandstone[1] escarpment except where modified by faults or a higher sandstone escarpment.	Yields little or no water to wells. Small springs with low flows of about 5 gpm occur near the top of the formation.
	Meramec	Ste. Genevieve limestone	180–270		Limestone, white to medium-gray, fine-grained to oölitic, crossbedded; contains chert nodules. Calcareous or shaly, slabby or massive lenticular sandstone may be present in the upper one-third of the formation.	Underlies rolling karst uplands[1]. Forms moderate slope under Bethel sandstone escarpment except where modified by faults. Exposed as large fault blocks in much of the fluorspar area.	Yields more than 50 gpm to wells from large solution openings in karst areas. Most wells penetrate solution openings, but in areas high above perennial streams, solution openings are dry in late summer and fall and many wells are inadequate. Springs having low flows ranging from less than 10 to about 1,500 gpm occur at or near stream level. Smaller springs discharge from perched water bodies in upland areas, but many go dry during late summer and fall.
		St. Louis limestone	350–400		Limestone, medium-gray to black, fine-grained to lithographic; contains abundant bluish-gray chert nodules.	Underlies dissected uplands and ridges. Underlies rolling karst uplands in faulted parts of the fluorspar area and uplands of Christian, Trigg, and Todd Counties. Forms steep valley walls along Cumberland River.	Low flows of numerous springs that discharge from near the top of the formation and near stream level range from less than 10 gpm to about 1,500 gpm. Maximum flows range from less than 100 gpm to more than 100,000 gpm. Most large springs are situated near minor rivers. In karst areas, drilled wells generally produce enough water for domestic use with a power pump (more than 500 gpd). Some produce more than 50 gpm from large solution openings. Most wells high above perennial streams are adequate. In nonkarst areas, yields generally are lower than in karst. The number of solution openings is fewer and their size smaller. Many wells are insufficient for bailer or bucket (less than 100 gpd). Most springs are small and many go dry during late summer and fall. Most wells high above perennial streams are inadequate (less than 100 gpd).
		Spergen limestone[2]	50		Limestone, light- to medium-gray, fine-grained to oölitic.	Underlies dissected uplands and ridges adjacent to Ohio River in Livingston and Crittenden Counties and adjacent to Cumberland River in Trigg County.	Wells that encounter large solution openings near stream level or near sinkholes yield sufficient water for a power pump (more than 500 gpd). In most other areas, the rock is fine-grained and yields generally are insufficient for a bailer or bucket (less than 100 gpd).
		Warsaw limestone	50±		Limestone, medium- to dark-gray, coarsely granular, crinoidal, fossiliferous. The basal part of the formation consists of medium- to dark-gray fine-grained shaly limestone containing nodules and stringers of gray chert.	Underlies dissected uplands and ridges adjacent to Cumberland and Tennessee Rivers and tributaries in Trigg, Lyon, and Livingston Counties. Exposed in faulted zone at Kuttawa.	
	Osage	Fort Payne chert	515		Limestone, dark bluish-gray, and interlayered chert. Chert is dark-gray to black and has fine laminations paralleling the bedding or is concentric in nodules. Along Kentucky Lake leached section consists of residual bleached chert and interbedded tripolitic clay.	Underlies dissected ridges between Tennessee and Cumberland Rivers. Exposed in fault scarp at Kuttawa.	Yields almost no water to wells where unweathered. Where the limestone has been leached away and chert rubble is left, yields may exceed 50 gpm. Yields of most wells of moderate depths range from 2 to 10 gpm. Tripolitic clay may be present in some areas and here the formation yields little or no water to wells.
		New Providence shale	30		Shale, green, clayey.	Exposed in faulted scarp at Kuttawa.	Yields little or no water to wells.
DEVONIAN		Chattanooga shale	200±		Shale, black, massive.	Exposed in faulted scarp at Kuttawa.	Yields little or no water to wells.

See list of references in Water-Supply Paper 1803.
[1] As used by McFarlan, Swann, Walker, and Nelson (1955).
[2] As used by Stockdale (1939) = Salem limestone of Cumings (1901) = Somerset shale member of Warsaw limestone.

INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D. C.—10419

Note: Reduced from original size, not intended for fine scale viewing; see original source document for details

GENERALIZED COLUMNAR SECTION OF CALDWELL, CHRISTIAN, CRITTENDEN LIVINGSTON, LYON, TODD, AND TRIGG COUNTIES, KENTUCKY

By
T. W. Lambert and R. F. Brown

1963

HYDROLOGIC INVESTIGATIONS
ATLAS HA-34 (SHEET 3 OF 3)

Price $1.25 per set

Attachment B8-1

U.S. Fish & Wildlife Service

Species Reports

Environmental Conservation Online System

Search

Species By County Report

The following report contains Species that are known to or are believed to occur in this county. Species with range unrefined past the state level are now excluded from this report. If you are looking for the Section 7 range (for Section 7 Consultations), please visit the IPaC application.

County: Todd, KY

Group	Name	Population	Status	Lead Office	Recovery Plan Name	Recovery Plan Action Status	Recovery Plan Stage
Clams	Littlewing pearlymussel (*Pegias fabula*)		Endangered	Kentucky Ecological Services Field Office	Little Wing Pearly Mussel	View Implementation Progress	Final
	Ring pink (mussel) (*Obovaria retusa*)		Endangered	Kentucky Ecological Services Field Office	Ring Pink (Mussel)	View Implementation Progress	Final
	Fanshell (*Cyprogenia stegaria*)		Endangered	Kentucky Ecological Services Field Office	Fanshell (Mussel)	View Implementation Progress	Final
	Fluted kidneyshell (*Ptychobranchus subtentum*)		Candidate	Asheville Ecological Services Field Office	-	-	-

Export options: CSV | EXCEL | XML | PDF

Last updated: March 7, 2011

U.S. Fish & Wildlife Service
Kentucky Ecological Services Field Office

U.S. Fish & Wildlife Service
330 West Broadway, Rm 265
Frankfort, KY 40601
Phone: 502-695-0468
Fax: 502-695-1024

Endangered, Threatened, & Candidate Species in _____TODD_____ County, KY

Group	Species	Common name	Legal* Status	Known** Potential	Special Comments
Mammals	*Myotis sodalis*	Indiana bat	E	P	
Mussels	*Cyprogenia stegaria*	fanshell	E	K	
	Ptychobranchus subtentum	fluted kidneyshell	C	K	
	Pegias fabula	littlewing pearlymussel	E	K	
	Obovaria retusa	ring pink	E	K	
	Lexingtonia dolabelloides	slabside pearlymussel	C	P	

NOTES:

* Key to notations: E = Endangered, T = Threatened, C = Candidate, CH = Critical Habitat

**Key to notations: K = Known occurrence record within the county, P = Potential for the species to occur within the county based upon historic range, proximity to known occurrence records, biological, and physiographic characteristics.

Attachment B8-3

U.S. Fish & Wildlife Service

Information, Planning, and Conservation System

Environmental Conservation Online System

Search

IPaC Home Page | Initial Project Scoping | Project Builder | FAQs

Step 1
Location

Step 2
Activities

Step 3
Trust resources list

Step 4
Conservation measures

Conservation Measures (CM) Report

Caution!
This portion of the IPaC system is still under development and testing by the U.S. Fish & Wildlife Service. Conservation Measures obtained at this time should not be used as authoritative recommendations for your project.

Project Counties:
Todd, KY

Project type: Transportation

Conservation Measures (Grouped by Category)

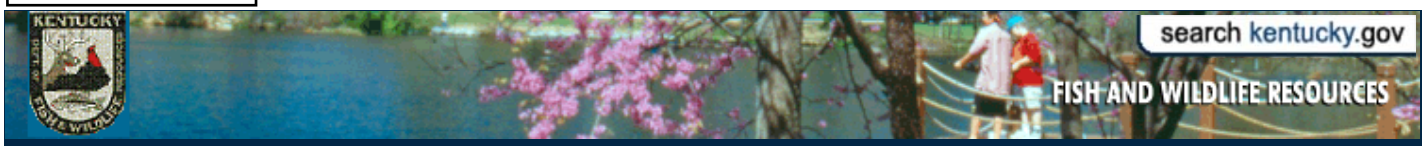
No FWS Endangered Species conservation measures were found for your project.

Last updated: March 7, 2011

ECOS Home | Contact Us

U.S. Fish and Wildlife Service Home Page | Department of the Interior | USA.gov | About the U.S. Fish and Wildlife Service | Accessibility | Privacy | Notices | Disclaimer | FOIA

Attachment B9



Species Information

State Threatened, Endangered, and Special Concern Species observations for selected counties

Linked life history provided courtesy of NatureServe Explorer.

Records may include both recent and historical observations.

US Status Definitions Kentucky Status Definitions

List State Threatened, Endangered, and Special Concern Species observations in 1 selected county.
Selected county is: Todd.

Scientific Name and Life History	Common Name and Pictures	Class	County	US Status	KY Status	WAP	Reference
Ammodramus henslowii	Henslow's Sparrow	Aves	Todd	N	S	Yes	Reference
Anas discors	Blue-winged Teal	Aves	Todd	N	T		Reference
Ardea alba	Great Egret	Aves	Todd	N	E	Yes	Reference
Ardea herodias	Great Blue Heron	Aves	Todd	N	S		Reference
Circus cyaneus	Northern Harrier	Aves	Todd	N	T	Yes	Reference
Cryptobranchus alleganiensis alleganiensis	Eastern Hellbender	Amphibia	Todd	N	S	Yes	Reference
Cyprogenia stegaria	Fanshell	Bivalvia	Todd	LE	E	Yes	Reference
Haliaeetus leucocephalus	Bald Eagle	Aves	Todd	N	T	Yes	Reference
Hyla gratiosa	Barking Treefrog	Amphibia	Todd	N	S	Yes	Reference
Junco hyemalis	Dark-eyed Junco	Aves	Todd	N	S		Reference
Lampsilis ovata	Pocketbook	Bivalvia	Todd	N	E	Yes	Reference
Lepomis miniatus	Redspotted Sunfish	Actinopterygii	Todd	N	T	Yes	Reference
Leptoxis praerosa	Onyx Rocksnail	Gastropoda	Todd	N	S		Reference
Obovaria retusa	Ring Pink	Bivalvia	Todd	LE	E	Yes	Reference
Ophisaurus attenuatus longicaudus	Eastern Slender Glass Lizard	Reptilia	Todd	N	T	Yes	Reference
Pegias fabula	Littlewing Pearlymussel	Bivalvia	Todd	LE	E	Yes	Reference
Phalacrocorax auritus	Double-crested Cormorant	Aves	Todd	N	E		Reference
Ptychobranchus subtentum	Fluted Kidneyshell	Bivalvia	Todd	C	E	Yes	Reference
Rabdotus dealbatus	Whitewashed Rabdotus	Gastropoda	Todd	N	T		Reference
Toxolasma lividus	Purple Lilliput	Bivalvia	Todd	N	E	Yes	Reference
Villosa ortmanni	Kentucky Creekshell	Bivalvia	Todd	N	T	Yes	Reference
Villosa vanuxemensis vanuxemensis	Mountain Creekshell	Bivalvia	Todd	N	T	Yes	Reference

22 species are listed

Attachment B10-1

Steven L. Beshear
Governor

Leonard K. Peters
Secretary
Energy and Environment Cabinet

Donald S. Dott, Jr.
Director

Commonwealth of Kentucky
Kentucky State Nature Preserves Commission
801 Schenkel Lane
Frankfort, Kentucky 40601-1403
502-573-2886 Voice
502-573-2355 Fax

March 22, 2011

William Leopold
ENTRAN, PLC
1848 Summit Road
Cincinnati, OH 45237

Data Request 11-108

Dear Mr. Leopold:

This letter is in response to your data request of March 8, 2011 for the Todd County-Guthrie Scoping Study project. We have reviewed our Natural Heritage Program Database to determine if any of the endangered, threatened, or special concern plants and animals or exemplary natural communities monitored by the Kentucky State Nature Preserves Commission occur near the project area on the Guthrie USGS Quadrangle, as shown on the map provided. Please see the attached reports for more information, which reflect analysis of the project area with three buffers applied:

1-mile for all records – 1 record
5-mile for aquatic records – no records
5-mile for federally listed species – no records
10-mile for mammals and birds – 3 records

The site is located within a karst landscape characterized by numerous sinkholes, underground conduits, or caves. Construction disturbance or release of pollutants within the specified area could easily cause contamination of groundwater. Caves are often associated with sensitive ecosystems and may provide habitat for a number of rare or endangered species. Cave organisms are heavily dependent on water quality, and steps should be taken to avoid introducing contaminants into the water system.

Haliaeetus leucocephalus (Bald eagle, federally delisted, KSNPC threatened) can be found near seacoasts, rivers and large lakes. Preferentially roosts in conifers in winter in some areas. In winter, may associate with waterfowl concentrations or congregate in areas with abundant dead fish.

Thyromanes bewickii (Bewick's Wren, KSNPC special concern, federal species of management concern) can be found in brushy areas, thickets, scrub in open country, open and riparian woodlands, and in country towns and farms.

I would like to take this opportunity to remind you of the terms of the data request license, which you agreed upon in order to submit your request. The license agreement states "Data and data products received from the Kentucky State Nature Preserves Commission, including any portion thereof, may not be reproduced in any form or by any means without the express written authorization of the Kentucky State Nature Preserves Commission." The exact location of plants, animals, and natural communities, if released by the Kentucky State Nature Preserves Commission, may not be released in any document or correspondence. These products are provided on a temporary basis for the express project (described above) of the requester, and may not be redistributed, resold or copied without the written permission of the Kentucky State Nature Preserves Commission's Data Manager (801 Schenkel Lane, Frankfort, KY, 40601. Phone: (502) 573-2886).

Please note that the quantity and quality of data collected by the Kentucky Natural Heritage Program are dependent on the research and observations of many individuals and organizations. In most cases, this information is not the result of comprehensive or site-specific field surveys; many natural areas in Kentucky have never been thoroughly surveyed, and new plants and animals are still being discovered. For these reasons, the Kentucky Natural Heritage Program cannot provide a definitive statement on the presence, absence, or condition of biological elements in any part of Kentucky. Heritage reports summarize the existing information known to the Kentucky Natural Heritage Program at the time of the request regarding the biological elements or locations in question. They should never be regarded as final statements on the elements or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments. We would greatly appreciate receiving any pertinent information obtained as a result of on-site surveys.

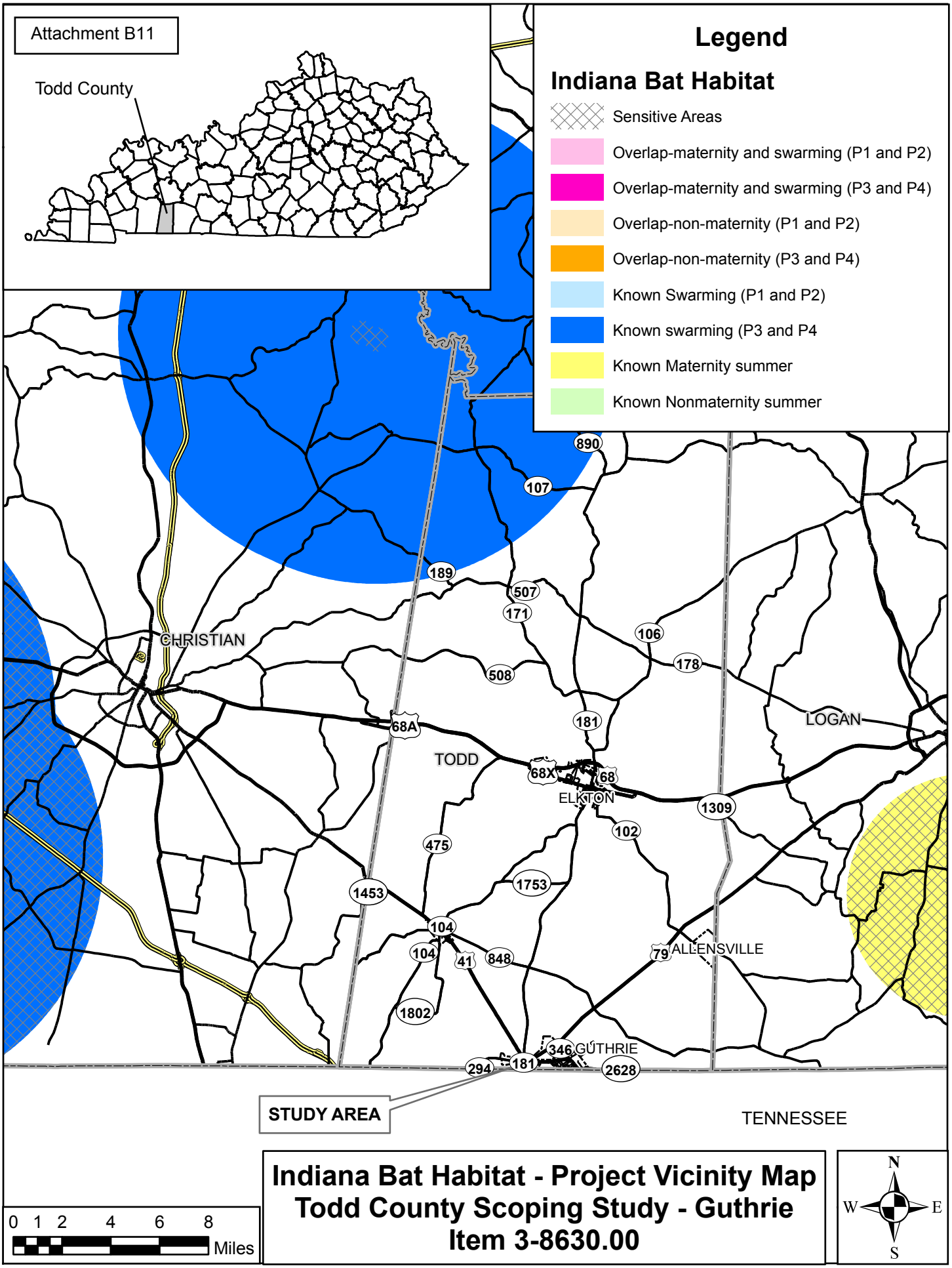
If you have any questions or if I can be of further assistance, please do not hesitate to contact me.

Sincerely,

Sara Hines
Data Manager

SLD/SGH

Enclosures: Data Report and Interpretation Key


Attachment B11
Todd County
Legend
Indiana Bat Habitat
Sensitive Areas
Overlap-maternity and swarming (P1 and P2)
Overlap-maternity and swarming (P3 and P4)
Overlap-non-maternity (P1 and P2)
Overlap-non-maternity (P3 and P4)
Known Swarming (P1 and P2)
Known swarming (P3 and P4
Known Maternity summer
Known Nonmaternity summer
890
107
189
507
171
106
178
508
181
68A
68X
68
1309
102
475
1753
1453
104
104
41
848
79
1802
346
294
181
2628
CHRISTIAN
TODD
ELKTON
LOGAN
ALLENSVILLE
GUTHRIE
STUDY AREA
TENNESSEE
0 1 2 4 6 8
Miles
Indiana Bat Habitat - Project Vicinity Map
Todd County Scoping Study - Guthrie
Item 3-8630.00
N
W
E
S

Attachment B12

Leopold, William

From: Thomas, Randall
Sent: Thursday, April 21, 2011 7:47 AM
To: Currens, James C
Cc: Osborne, Deborah; deVilliers, Mike; Leopold, William; Aldridge, Brian; Creasey, Tom
Subject: Re: Highway improvement near Guthrie, Todd County

Thank you, Jim, and best wishes.

Randall J. Thomas, P.G.
Senior Environmental Planner
ENTRAN
400 East Vine Street, Suite 300
Lexington, KY 40507
(859) 285-7691
rthomas@entran.us
www.entran.us

On Apr 19, 2011, at 5:12 PM, "Currens, James C" <currens@email.uky.edu> wrote:

> Hello Randall,
>
> We've searched what records KSS has and have asked a couple of knowledgeable cavers. KSS has no caves on record. The 4 or 5 cavers I've talked to do not know of any caves in the vicinity of the junction of US79, US41 and Ky 181 (Tiny Town). The geology suggests, however, that caves are present and potentially would be both a hazard for construction and an environmental issue. There is a major cave about 3 or 4 miles further west, however.
>
> Cordially,
>
> Jim Currens

United States Department of the Interior
National Park Service
Land & Water Conservation Fund

Detailed Listing of Grants Grouped by County

Today's Date: 3/28/2011

KENTUCKY - 21

Grant ID & Element	Type	Grant Element Title	Grant Sponsor	Amount	Status	Date Approved	Exp. Date	Cong. District
TAYLOR								
11 - XXX	D	R. L. MILLER PARK	CITY OF CAMPBELLSVILLE	$39,875.06	C	7/24/1968	6/30/1972	2
29 - XXX	D	TAYLOR COUNTY PARK	TAYLOR COUNTY	$28,708.34	C	1/23/1969	12/31/1973	2
123 - XXX	D	GREEN RIVER LAKE PARK DEVELOPMENT	DEPT. OF PARKS	$128,605.95	C	8/25/1971	12/31/1973	2
348 - XXX	D	CAMPBELLSVILLE-TAYLOR COUNTY BALL PA	CITY OF CAMPBELLSVILLE & TAYLOR CO.	$56,068.75	C	3/2/1976	6/30/1979	2
569 - XXX	D	GREEN RIVER LAKE STATE PARK	DEPT. OF PARKS	$32,689.85	C	2/16/1979	1/31/1984	2
578 - XXX	D	ROBERT L. MILLER TENNIS COURT	CITY OF CAMPBELLSVILLE	$362,209.74	C	2/16/1979	2/29/1984	2
777 - XXX	D	CAMPBELLSVILLE/TAYLOR COUNTY PARK	TAYLOR COUNTY	$17,940.45	C	7/27/1983	9/15/1984	2
930 - XXX	D	GREEN RIVER LAKE STATE PARK	DEPT. OF PARKS	$123,327.80	C	6/10/1985	5/31/1987	2
1289 - XXX	R	TAYLOR COUNTY PARK	TAYLOR COUNTY	$29,513.11	C	8/20/2003	7/31/2008	2
			TAYLOR County Total:	**$818,939.05**		**County Count:**		**9**
TODD								
174 - XXX	C	SHARON GROVE PARK	TODD COUNTY	$16,194.38	C	7/11/1972	12/31/1975	1
492 - XXX	C	TODD COUNTY RECREATION COMPLEX	TODD COUNTY	$81,405.70	C	12/6/1977	12/31/1981	1
728 - XXX	D	SHARON GROVE PARK	TODD COUNTY	$4,776.38	C	2/6/1981	1/31/1986	1
900 - XXX	D	TODD COUNTY PARK	TODD COUNTY	$6,471.90	C	10/18/1984	10/31/1986	1
1212 - XXX	D	ELKTON PARK PLAYGROUND	City of Elkton	$6,036.42	C	7/21/2000	7/31/2005	1
1245 - XXX	C	OLD CLIFTY SCHOOL PARK	TODD COUNTY	$36,050.00	C	1/23/2002	9/30/2006	1
1292 - XXX	R	ELKTON PARK	CITY OF ELKTON	$19,040.20	C	8/20/2003	7/31/2008	1
1321 - XXX	D	VETERANS MEMORIAL PARK	CITY OF GUTHRIE	$13,850.00	C	7/19/2004	7/31/2009	1
			TODD County Total:	**$183,824.98**		**County Count:**		**8**

Attachment B14-1

Search Results

Search Results for:
Map Recentered

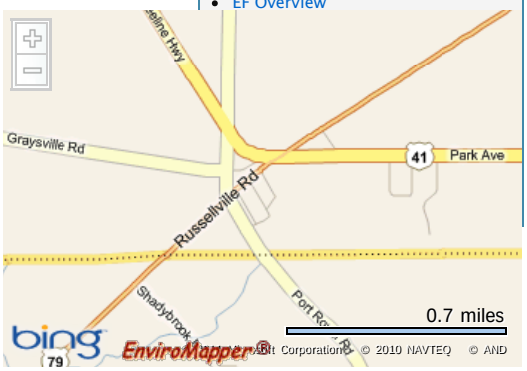
API Link for Report Data:
http://iaspub.epa.gov/enviro/efservice/multisystem/minLatitude/36.636812/maxLatitude/36.653340/minLongitude/-87.2129

Copy and paste the link above to view the data from this report

Info | AIR | TOXICS | WASTE | RADIATION | WATER

Click on a tab to see a summary view of data for a media type.

Envirofacts Links
- EF Overview



LIST OF EPA-REGULATED FACILITIES IN ENVIROFACTS

The facility list below is based upon the facilities that are visible with the map above. To refine your search to a more targeted area of interest, please visit the Envirofacts Multisystem Search Form. To search Envirofacts via an interactive map, please view your results in EnviroMapper for Envirofacts

FACILITY INFORMATION	AFS	ACRES	BR	CERCLIS	PCS	RADInfo	RCRAInfo	TRI	TSCA
GUTHRIE STP 251 CYPRESS LINE GUTHRIE, KY 42234 Summary Report Facility Report Compliance Report					View Report				
KEYSTOP FOOD MART-PIGGLY WIGGLY #79 10300 DIXIE BEE LINE DR GUTHRIE, KY 42234 Summary Report Facility Report Compliance Report							View Report		
SOUTH TODD TURNING LANES GUTHRIE RD GUTHRIE, KY 42234 Summary Report Facility Report Compliance Report					View Report				

Total Number of Facilities Displayed: 3

Return to more topical information

Attachment B14-2

U.S. ENVIRONMENTAL PROTECTION AGENCY

Facility Registry System (FRS)

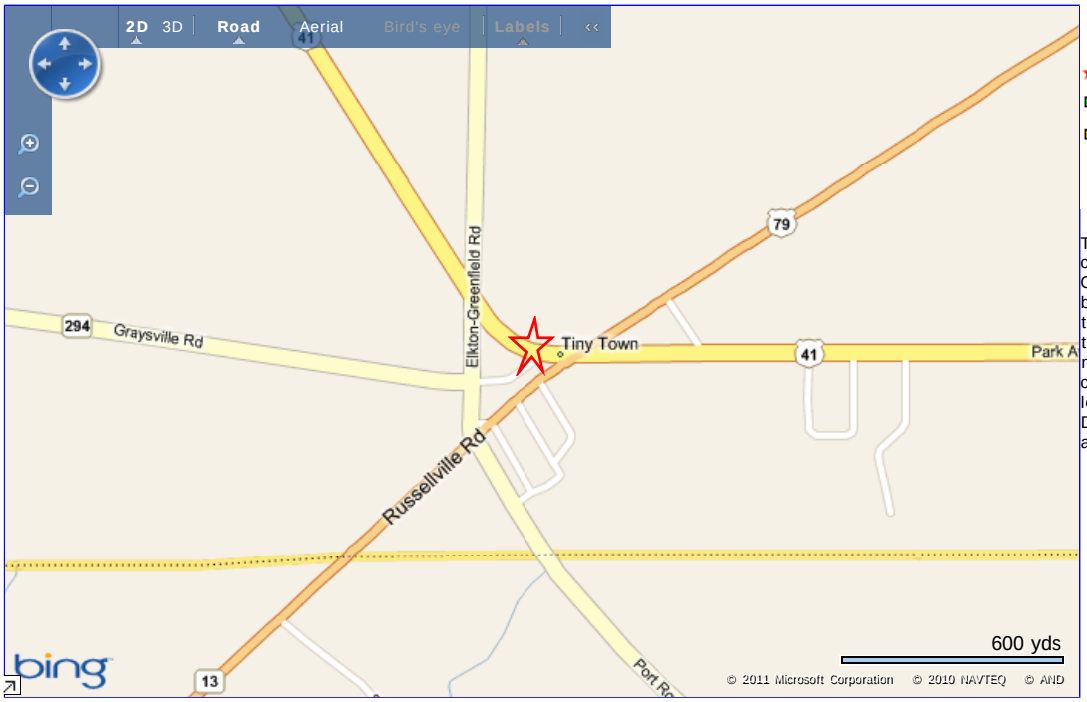
Facility Detail Report

Report an Error

FRS

KEYSTOP FOOD MART-PIGGLY WIGGLY #79

10300 DIXIE BEE LINE DR
GUTHRIE, KY 42234
EPA Registry Id: 110003254816



Legend

- Selected Facility
- EPA Facility of Interest
- State/Tribe Facility of Interest

The facility locations displayed come from the FRS Spatial Coordinates tables. They are the best representative locations for the displayed facilities based on the accuracy of the collection method and quality assurance checks performed against each location. The North American Datum of 1983 is used to display all coordinates.

Environmental Interests

Information System	Information System ID	Environmental Interest Type	Data Source	Last Updated Date	Supplemental Environmental Interests:
RESOURCE CONSERVATION AND RECOVERY ACT INFORMATION SYSTEM	KYR000020016	UNSPECIFIED UNIVERSE (INACTIVE)	RCRAINFO	09/02/2000	

Additional EPA Reports: No Additional EPA Reports returned.

Standard Industrial Classification Codes (SIC)

No SIC Codes returned.

National Industry Classification System Codes (NAICS)

Data Source	NAICS Code	Description	Primary
RCRAINFO	4471	GASOLINE STATIONS	
RCRAINFO	44511	SUPERMARKETS AND OTHER GROCERY (EXCEPT CONVENIENCE) STORES	

Facility Codes and Flags

EPA Region:	04
Duns Number:	
Congressional District Number:	07
Legislative District Number:	01
HUC Code/Watershed:	05130206 / RED
US Mexico Border Indicator:	NO
Federal Facility:	NO
Tribal Land:	NO

Facility Mailing Addresses

Affiliation Type	Delivery Point	City Name	State	Postal Code	Information System
REGULATORY CONTACT	7520 DISTRIBUTION DRIVE	LOUISVILLE	KY	40258	RCRAINFO
FACILITY MAILING ADDRESS	7520 DISTRIBUTION DRIVE	LOUISVILLE	KY	40258	RCRAINFO
OWNER	P.O. BOX 2809	FRANKLIN	KY	42135	RCRAINFO

Alternative Names

No Alternative Names returned.

Contacts

Affiliation Type	Full Name	Office Phone	Information System	Mailing Address

Organizations

Affiliation Type	Name	DUNS Number	Information System	Mailing Address
OWNER	KEYSTOPS INC		RCRAINFO	View

REGULATORY CONTACT	PETE DEBEER	5029334943	RCRAINFO	View

Attachment B14-3

Query executed on: MAR-28-2011

Attachment B14-4

U.S. ENVIRONMENTAL PROTECTION AGENCY

Enforcement & Compliance History Online (ECHO)

Detailed Facility Report

Map | Report Error | Data Dictionary

For Public Release - Unrestricted Dissemination Report Generated on 03/28/2011
US Environmental Protection Agency - Office of Enforcement and Compliance Assurance

Facility Permits and Identifiers

Data Dictionary

Statute	System	Source ID	Facility Name	Street Address	City	State	Zip
	FRS	110041945802	SOUTH TODD TURNING LANES	GUTHRIE RD	GUTHRIE	KY	42234
CWA	PCS	KYR10E896	SOUTH TODD TURNING LANES	GUTHRIE RD	GUTHRIE	KY	42234

Facility Characteristics

Data Dictionary

Statute	Source ID	Universe	Status	Areas	Permit Expiration Date	Latitude/ Longitude	Indian Country?	SIC Codes	NAICS Codes
	110041945802					LRT: 36.644610 , -87.199970	No		
CWA	KYR10E896	Minor	Inactive		07/31/2014		No	1611	

If the CWA permit is past its expiration date, this normally means that the permitting authority has not yet issued a new permit. In these situations, the expired permit is normally administratively extended and kept in effect until the new permit is issued.

For the RCRA program, activities that contribute to an overall facility status of Active are displayed in parentheses using the acronym HPACS, where H indicates handler activities, P - permitting, A - corrective action, C - converter, and S - state-specific. More information is available in the Data Dictionary.

Inspection and Enforcement Summary Data

Data Dictionary

Statute	Source ID	Insp. Last 05Yrs	Date of Last Inspection	Formal Enf Act Last 05 Yrs	Penalties Last 05 Yrs
CWA	KYR10E896	0	Never	0	$00

Compliance Monitoring History (05 years)

Data Dictionary

Statute	Source ID	System	Inspection Type	Lead Agency	Date	Finding
- No data records returned.						

Entries in *italics* are not considered inspections in official counts.

Compliance Summary Data

Data Dictionary

Information on the nature of alleged violations is available on the FAQ page.

Statute	Source ID	Current SNC/HPV?	Description	Current As Of	Qtrs in NC (of 12)
CWA	KYR10E896	N/A		Jul-Sep10	

Three Year Compliance Status by Quarter

Data Dictionary

Violations shown in a given quarter do not necessarily span the entire 3 months. Information on the nature of alleged violations is available on the FAQ page, and information on the duration of non-compliance is available at the end of this report.

Statute:Source ID	QTR1	QTR2	QTR3	QTR4	QTR5	QTR6	QTR7	QTR8	QTR9	QTR10	QTR11	QTR12
- No data records returned.												

Attachment B14-5

Notices of Violation or Informal Enforcement - AFS, PCS, ICIS-NPDES, RCRAInfo (05 year history)

Data Dictionary

Statute	Source ID	Type of Action	Lead Agency	Date	
- No data records returned.					

Formal Enforcement Actions - (05 year history)

AFS, PCS, RCRAInfo, NCDB

Data Dictionary

Statute	Source ID	Type of Action	Lead Agency	Date	Penalty	Penalty Description	
- No data records returned.							

In some cases, formal enforcement actions may be entered both at the initiation and final stages of the action. These may appear more than once above. Entries in *italics* are not "formal" actions under the PCS definitions but are either the initiation of an action or penalties assessed as a result of a previous action. This section includes US EPA and State formal enforcement actions under CAA, CWA and RCRA.

ICIS

Data Dictionary

Primary Law/Section	Case Number	Case Type	Lead Agency	Case Name	Issued/Filed Date	Settlement Date	Federal Penalty	State/Local Penalty	SEP Cost	Comp Action Cost	
- No data records returned.											

Federal enforcement actions and penalties shown in this section are from the Integrated Compliance Information System (ICIS-FE&C). These actions may duplicate records in the Formal Enforcement Actions section.

TRI History of Reported Chemicals Released in Pounds per Year at Site:

Data Dictionary

Year /	Total Air Emissions	Surface Water Discharges	Underground Injections	Releases to Land	Total On-site Releases	Total Off-site Transfers	Total Releases and Transfers	
- No data records returned.								

TRI Total Releases and Transfers by Chemical and Year

Chemical Name	-8	-7	-6	-5	-4	-3	-2	-1	0	
- No data records returned.										

Demographic Profile of Surrounding Area (3 Miles)

Data Dictionary

Radius of Area:	N/A	Land Area:	N/A	Households in area:	N/A
- No data records returned.					

Please note: Entries in gray denote records that are not federally required to be reported to EPA. These data may not be reliable.

Notice About Duration of Violations -- The duration of violations shown on this report is an estimate of the actual duration of the violations that might be alleged or later determined in a legal proceeding. For example, the start date of the violation as shown in the ECHO database is normally when the government first became aware of the violation, not the first date that the violation occurred, and the facility may have corrected the violation before the end date shown. In some situations, violations may have been corrected by the facility, but EPA or the State has not verified the correction of these violations. In other situations, EPA does not remove the violation flag until an enforcement action has been resolved.

Attachment B14-6

This report was generated by the Integrated Data for Enforcement Analysis (IDEA) system, which updates its information from program databases monthly. The data were last updated: PCS: 02/19/2011. FRS: 02/17/2011.

Some regulated facilities have expressed an interest in explaining data shown in the Detailed Facility Reports in ECHO. Please check company web sites for such explanations.

Attachment B14-7

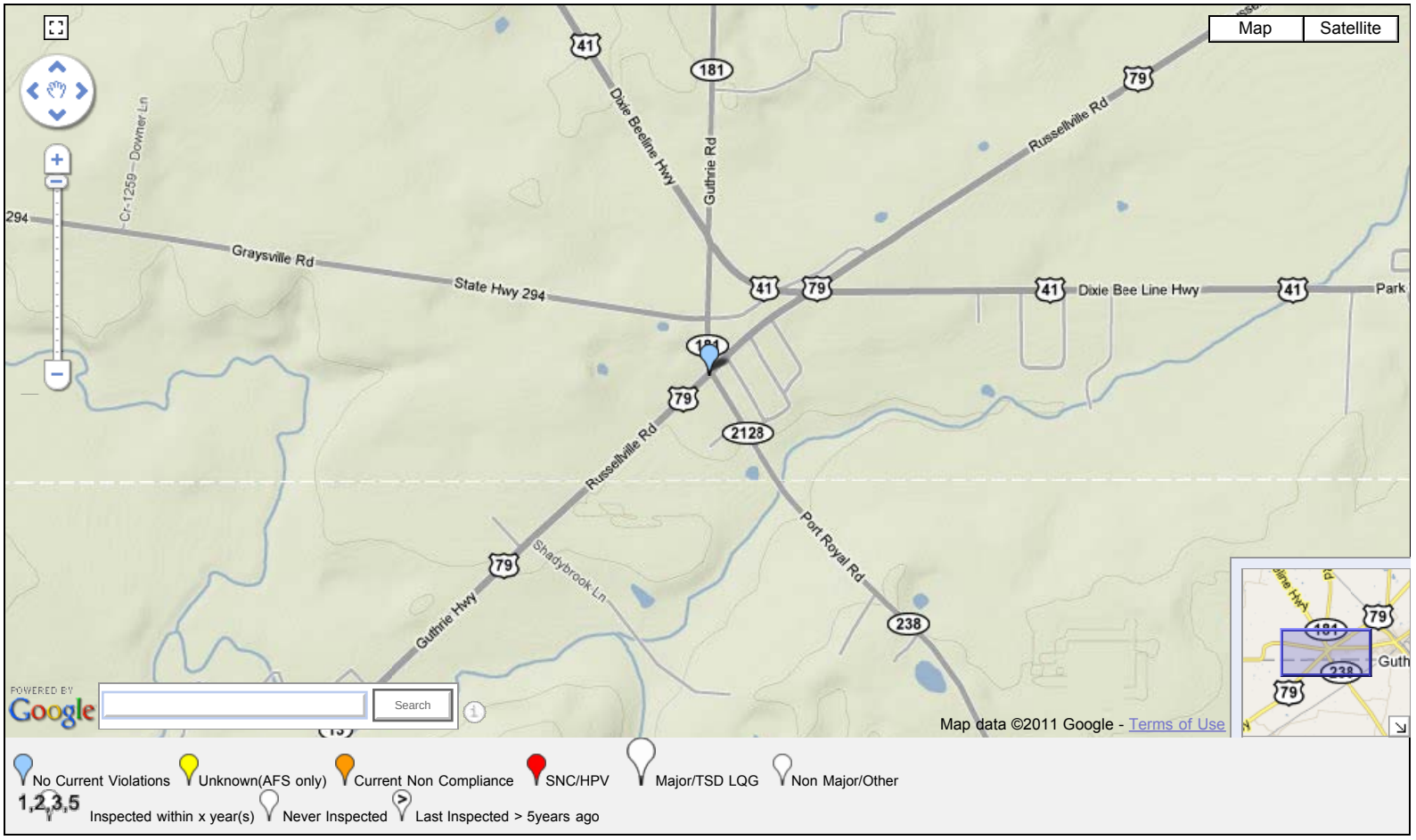
U.S. ENVIRONMENTAL PROTECTION AGENCY

Enforcement & Compliance History Online (ECHO)

Share

Search Results (Multimedia)

Help



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Last updated on Monday, March 28, 2011

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ATTACHMENT C
Photograph Index Map and Study Area Representative Photographs

ENTRAN

0 200 400 800 Feet

Environmental Overview

Todd County Scoping Study
Todd County, Kentucky; Item 3-8630.00

Attachment C

Photolog Index Map

Photo 1: Stream S1, an un-named USGS-Perennial stream, and its associated 100-Year floodplain, looking upstream into study area, facing northeast.

Photo 2: Location of mapped NWI wetland (POWHx) feature, currently a row-crop agricultural field displaying no wetland characteristics, facing northeast.

Photo 3: Potential Wetland W1 (PFO) within a wooded low-lying area, approximately 0.048 acre in size, facing southwest.

Photo 4: Pond P1, located in an open field within the floodplain of Stream S1, facing south.

Photo 5: View towards sinkhole mapped within study area, in center of corn field, facing east.

Photo 6: General view of potential Indiana bat habitat within study area, riparian corridor of Stream S1, and potential habitat for littlewing pearlymussel, Stream S1, facing southwest.

Photo 7: Representative photograph of potential habitat for several state-listed species (floodplain woodlands along Stream S1, pond and open field) present within study area, facing south

Photo 8: Representative photograph of woodland habitat (fence row) scattered throughout study area, facing northeast.

Photo 9: Representative photograph of social resource and noise-sensitive receptor present in study area, Tiny Town Baptist Church, facing southeast.

Photo 10: Prior archaeological survey area identification number 110-018, the only portion of the study area previously surveyed for archaeological resources, facing southwest.

Photo 11: NRHP registered site, The Stagecoach Inn (Gray's Inn), including National Park Service "Trail of Tears National Historic Trail" sign, located at KY 181 and Graysville Road, facing northeast.

Photo 12: NRHP registered site The Stagecoach Inn (Gray's Inn), and Kentucky Historical Society "Stage Coach Inn" sign along Graysville Road, facing north.

Photo 13: Historic Resource Survey site Louis Downer Farm located at KY 181 and KY 294, facing north.

Photo 14: Potential location of hazardous materials concern site Property ID 1, Tiny Town Coffee Cup at Hwy 41 and Hwy 79 with inactive UST record, facing intersection from Hwy 41, southwest.

Photo 15: Hazardous materials concern site Property ID 2, Favourite Lotto at 10125 Dixie Beeline Hwy (US 41) with UST (active) and LUST (status undetermined) records, facing southeast.

Photo 16: Hazardous materials concern site Property ID 3, Beach Oil (dba Exxon #25) at 11945 Guthrie Highway (KY 181) with active UST record, facing north.

Photo 17: Potential location of hazardous materials concern site Property ID 4, Piggly Wiggly 79 at 10300 Dixie Beeline Hwy (US 41) with inactive RCRA and UST records, currently the location of the future "The Crossings" commercial development, facing north.

Photo 18: Potential location of hazardous materials concern site Property ID 5, South Todd Turning Lanes at Guthrie Road (KY 181 at US 79) with an inactive CWA record, facing south.

Photo 19: Representative photograph of agricultural land use (hay field) and prime farmland soil units, facing northwest.

Photo 20: Creekside Meadows Mobile Home Park, a potential noise-sensitive receptor within the study area, facing southwest.

Photo 21: Representative photograph of commercial land use, entering the City of Guthrie at US 41 and US 79, facing east.

Photo 22: Representative photograph of existing roadway configuration, US 79 at US 41, facing southwest.

Photo 23: Representative photograph of existing roadway configuration, KY 181 at US 41, facing south.

Photo 24: Representative photograph of existing roadway configuration, US 79 at KY 181, facing northeast.