

Kentucky Geological Survey: Water Resources Research and Data

Kentucky Farm Bureau Water Management Working Group, Louisville, Ky.
March 25, 2015

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Kentucky Geological Survey,
University of Kentucky



Outline of This Talk:

- A Brief Overview of KGS, and the Water Resources Section Mission
- Example WRS Project: Cane Run/Royal Spring karst basin investigation.
- The Kentucky Groundwater Data Repository: What's Available
- KGS's Current Effort to Improve Groundwater Monitoring: A New Statewide Groundwater Observation Network

KGS MISSION

KRS 151:01

“As a mandated research center of the University of Kentucky, our mission is to increase knowledge and understanding of the mineral, energy, water resources, geologic hazards, and geology of Kentucky for the benefit of the Commonwealth and the Nation.”



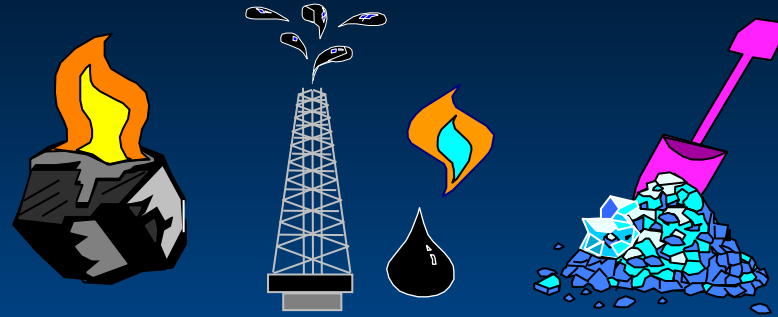
Statutory Mandates for KGS



- Mineral Resources Investigation
- Oil and Gas Well Data Repository
- Kentucky Seismic and Strong Motion Network
- Groundwater Data Repository
- Groundwater Monitoring Network

KGS Organization

Energy and Minerals



Geologic Mapping

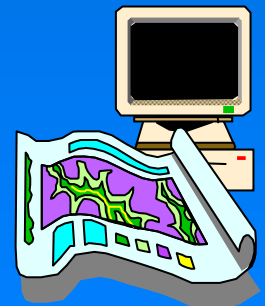
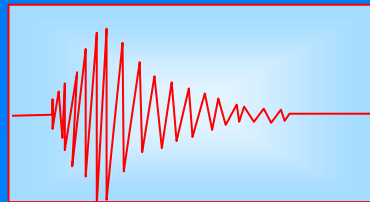


Water Resources



Geoscience
Information
Mgmt.

Geologic Hazards



Special Facilities: KGS Well Sample and Core Library

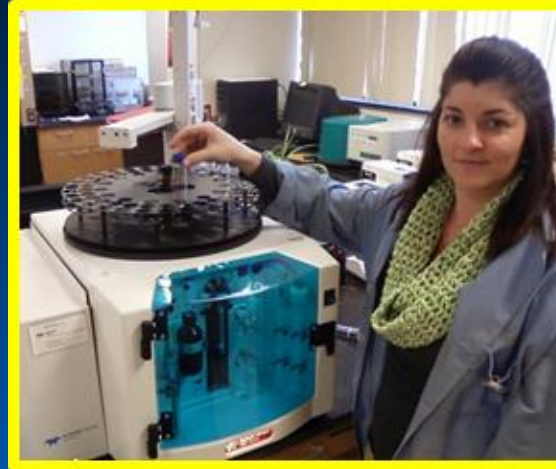
- Is 5th largest repository of its type in the Nation.
 - Over 22,000 sets of well samples from 120 KY counties.
 - 3,000 sets of cores from 95 counties.
 - 1,000 sets of auger holes from 11 counties.

- Provides access to physical samples of:
 - Bedrock and unconsolidated overburden strata of all types.
 - Oil & gas reservoir rocks.
 - Aquifer media (rocks and sediments).



Rock and Water Analytical Laboratories

- Water lab provides for analysis of major/minor inorganics (incl. trace metals, nutrients).
- Water Lab moved administratively to the WRS in 2014 to better accommodate KGS and UK research needs.
- Lab also helps serve needs of others outside UK-KGS, for example, Kentucky Watershed Watch program groups.



KGS Maintains A Website that Provides Much Information about Research Activities and Access to Data

UK Kentucky Geological Survey
Earth Resources—Our Common Wealth

Home Mobile Contact About Staff Calendar SiteMap ? **SEARCH**

General Geology ▶
Online Maps ▶
Data ▶
Research/Programs ▶
Publications ▶
Outreach and Education ▶
Laboratory ▶
Well Sample & Core Library ▶

More Pictures

Quick Links

- Search oil & gas wells
- Online geologic map
- Groundwater Data Repository
- Recent publications
- Coordinate Conversion Service
- Web Services for KGS Geoscience Information
- Fact Sheets

Of Interest

New arches web page now available

KY-AIPG Professional Development Conference, April 17-18

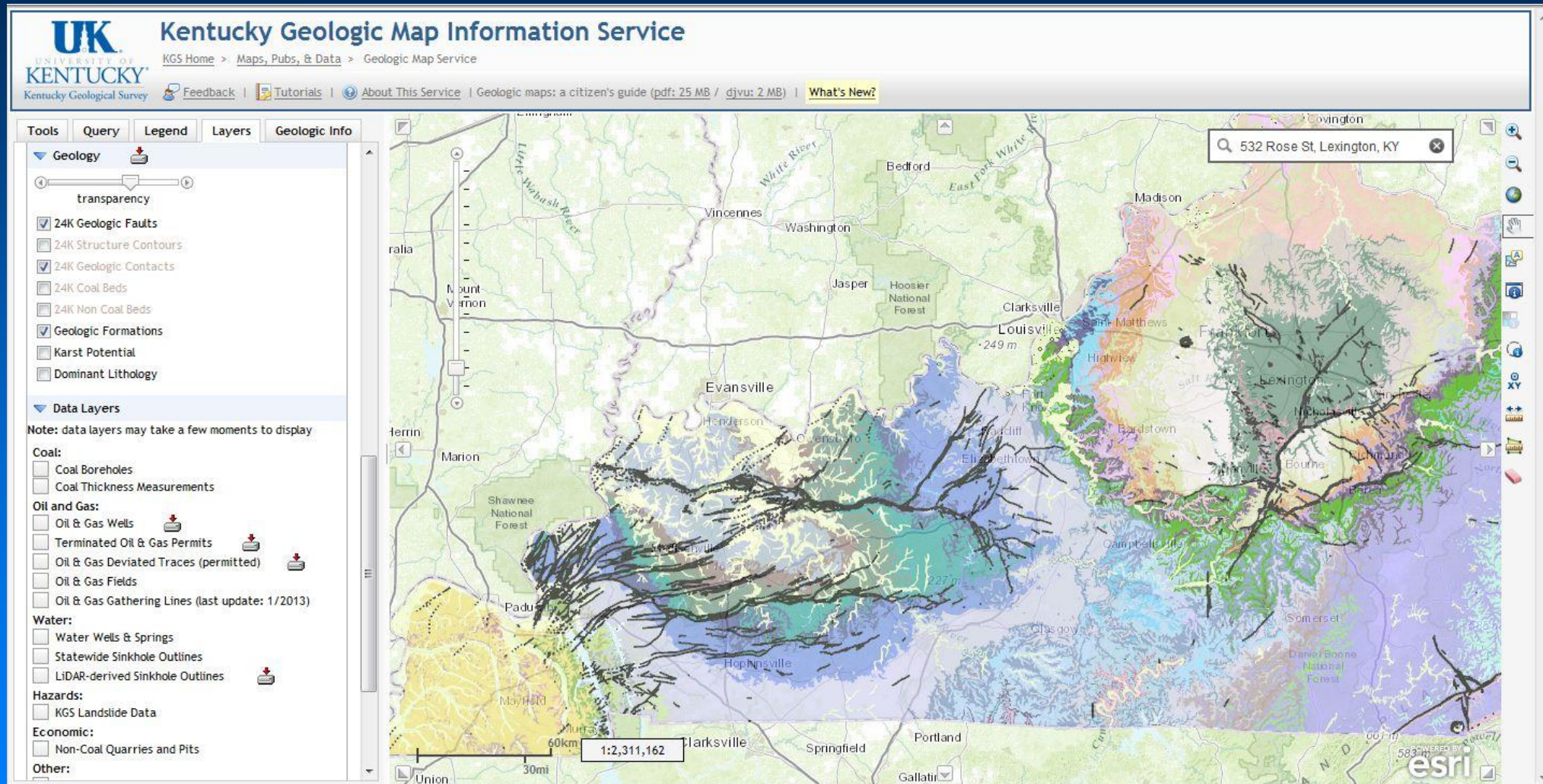
KGS plans installation of temporary seismographs to monitor induced seismicity

Oso disaster anniversary highlights landslide threat

Seeking Applicant for Director & State Geologist

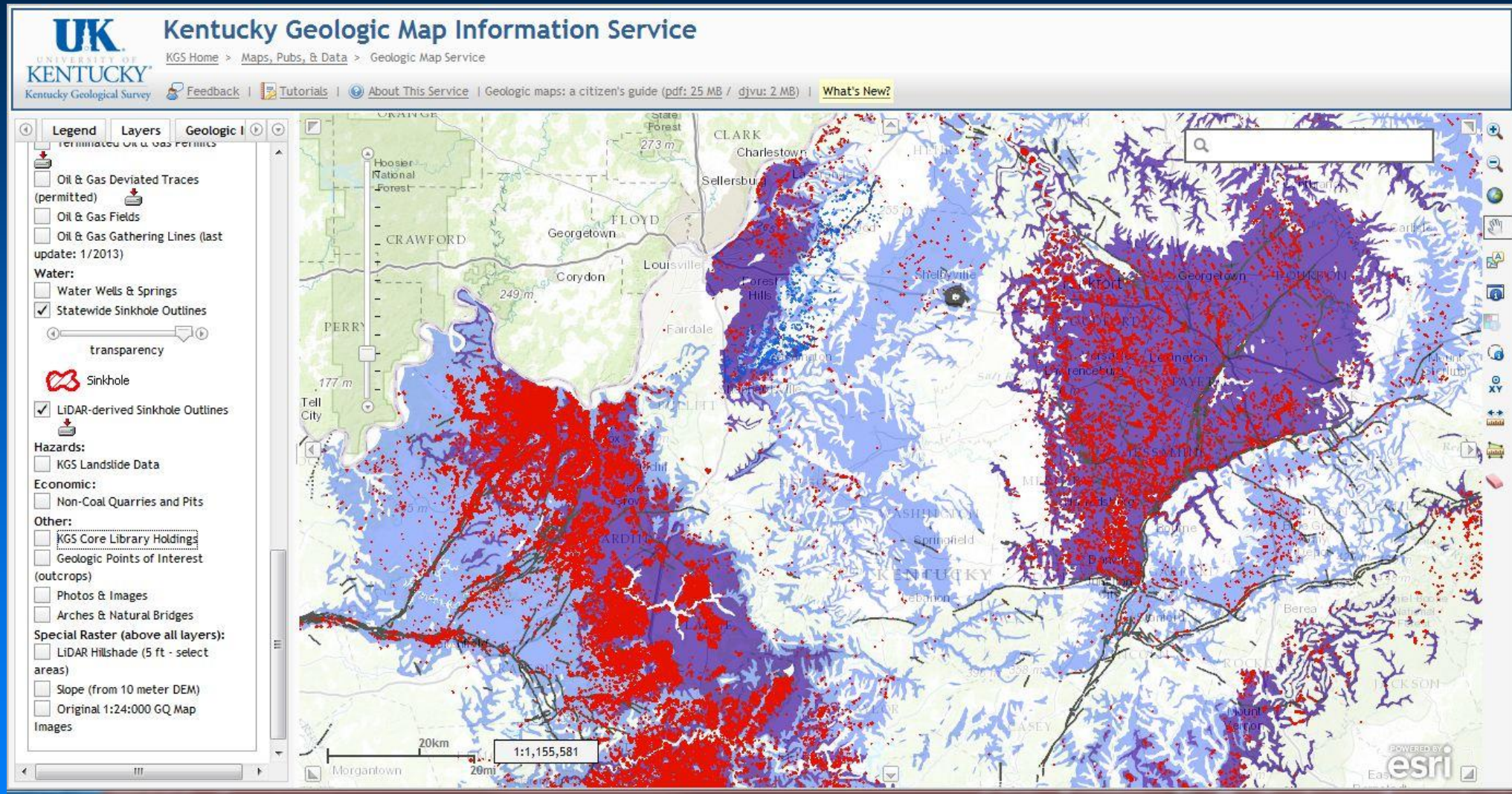
<http://www.uky.edu/KGS/>

Much of the Data KGS Collects Are Available Through Its User-Interactive Web Service



<http://kgs.uky.edu/kgsmmap/kgsgeoserver/viewer.asp>

Example Showing Mapped Sinkholes in Lexington, Louisville, and Elizabethtown Areas



<http://kgs.uky.edu/kgsmmap/kgsgeoserver/viewer.asp?gkarst=true>

All Kinds of
Geologic,
Topographic,
and
Hydrologic
Data Are
Available to
the Public

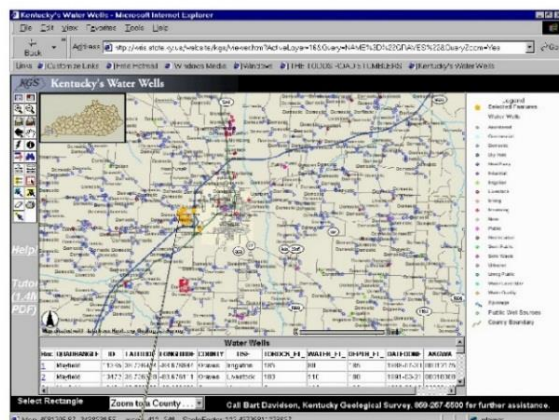


Internet Map Service On-line Data

Dan Carey

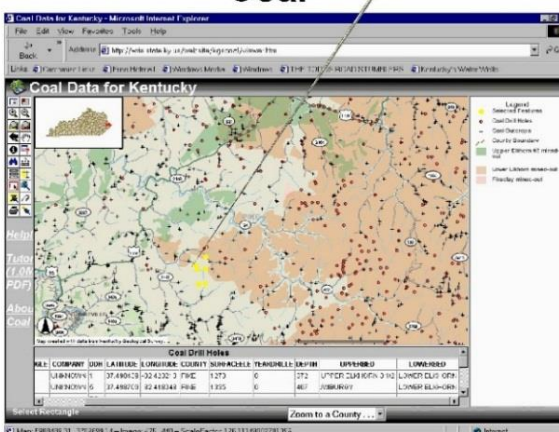


Water Wells

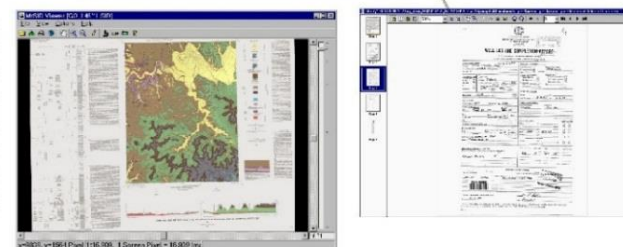
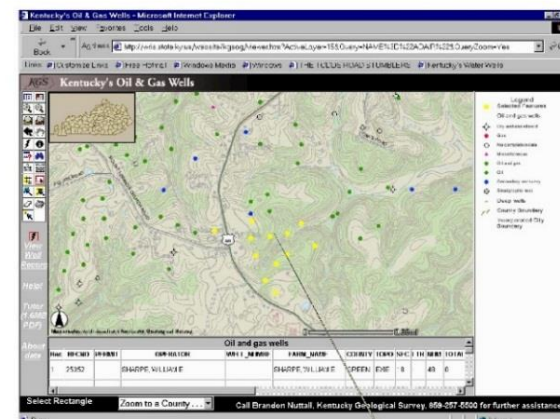


WELL ID	LOCATION	STATUS	WELL ID	LOCATION	STATUS
1000000001	1000000001	1000000001	1000000001	1000000001	1000000001
1000000002	1000000002	1000000002	1000000002	1000000002	1000000002
1000000003	1000000003	1000000003	1000000003	1000000003	1000000003
1000000004	1000000004	1000000004	1000000004	1000000004	1000000004
1000000005	1000000005	1000000005	1000000005	1000000005	1000000005
1000000006	1000000006	1000000006	1000000006	1000000006	1000000006
1000000007	1000000007	1000000007	1000000007	1000000007	1000000007
1000000008	1000000008	1000000008	1000000008	1000000008	1000000008
1000000009	1000000009	1000000009	1000000009	1000000009	1000000009
1000000010	1000000010	1000000010	1000000010	1000000010	1000000010

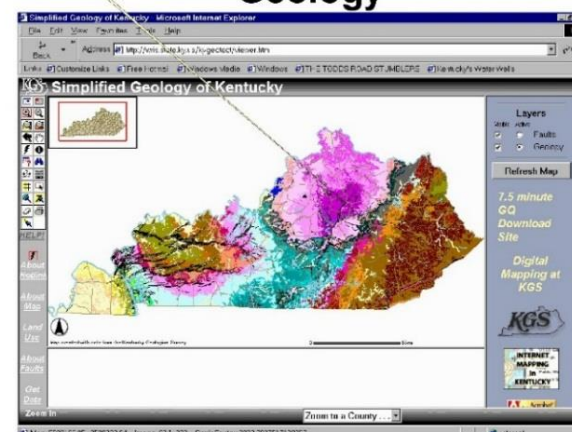
Coal



Oil and Gas Wells

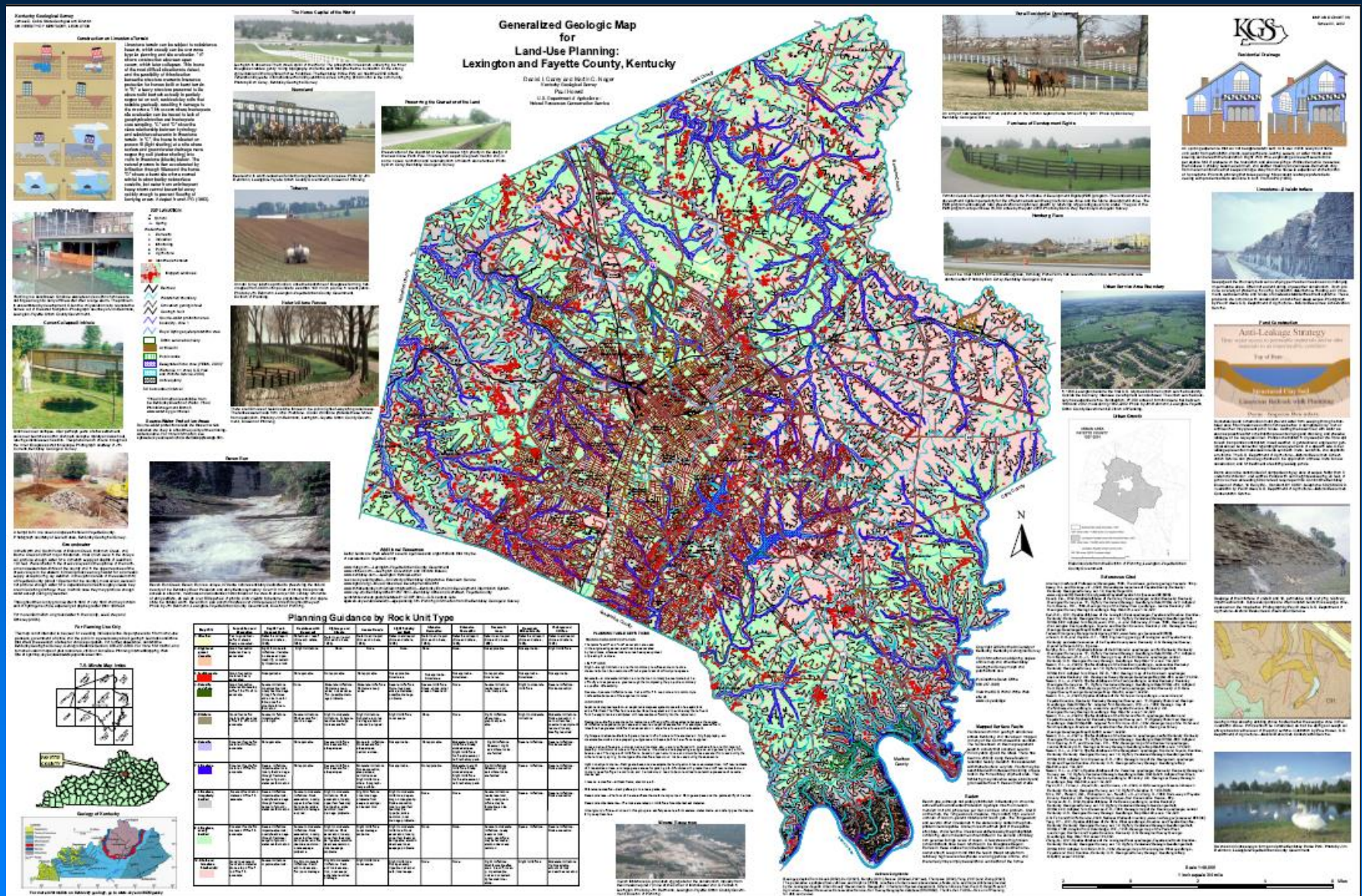


Geology



Powered by ArcIMS 4.0 and
the Water Resource Information System

Many Published Reports and Maps Available Too: County Land-Use Planning Maps Are Popular Downloads



<http://kgs.uky.edu/kgswweb/download/geology/landuse/lumaps.htm>

Activities of the KGS Water Resources Section

Principle Areas of Research:

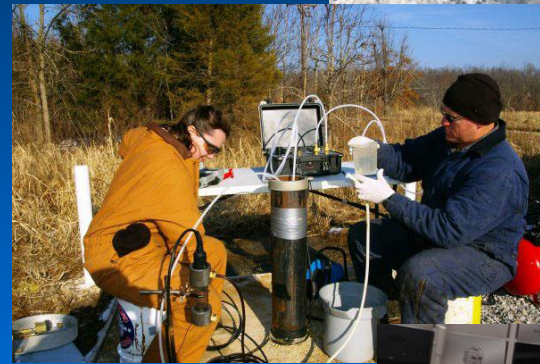
Groundwater Occurrence and Flow

Water Quality and Hydrogeochemistry

Karst Hydrogeology and Sinkhole Mapping

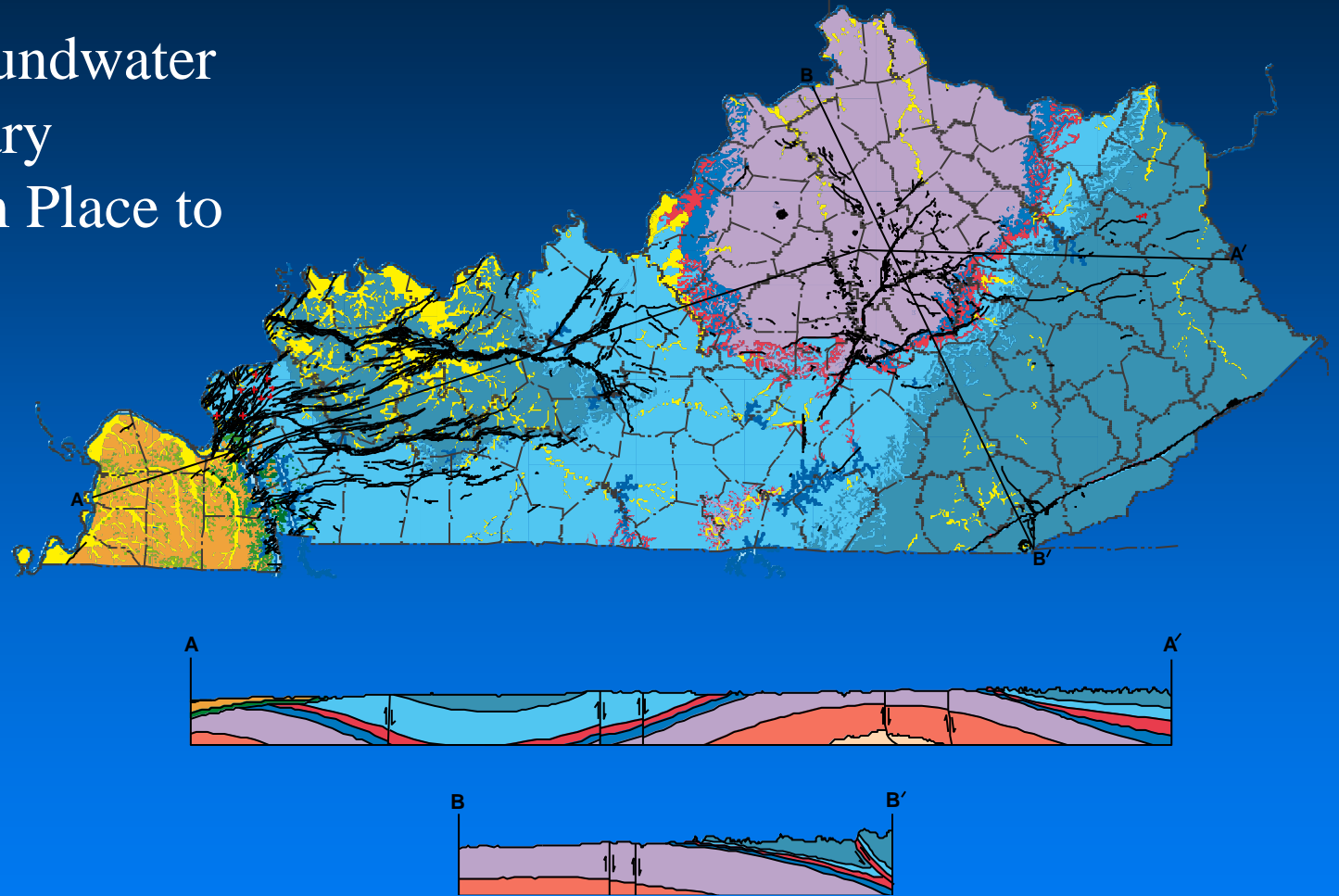
Hydrogeologic Applications of Geophysical Surveying

Groundwater Modeling and Model Applications



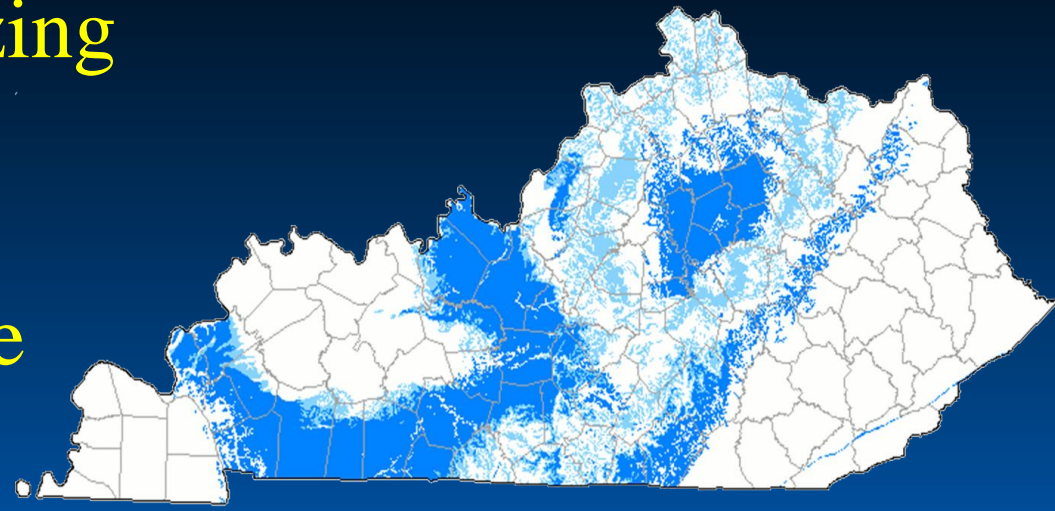
Kentucky Is A Topographically and Geologically Complex State

Aquifers and Groundwater Characteristics Vary Significantly from Place to Place.

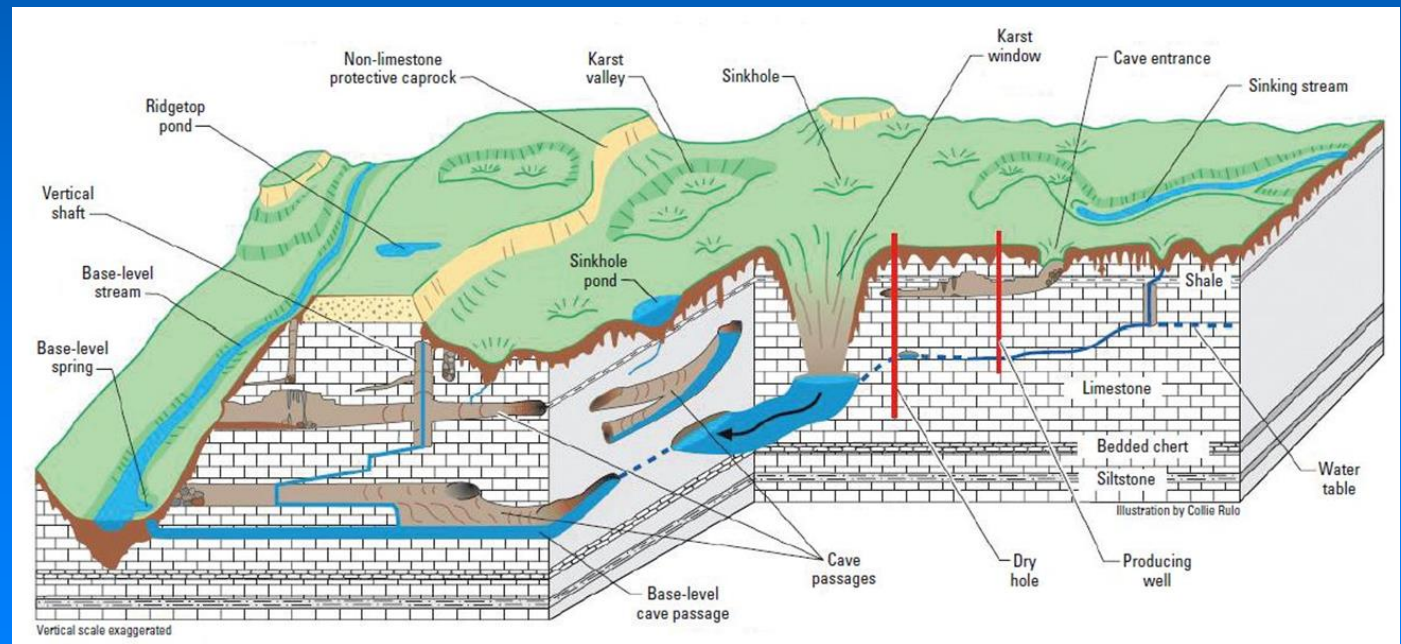


Obtaining Data Needed for Proper Understanding and Assessment of Groundwater Resources Is Often Technically Difficult, and Requires Multidisciplinary Study Approaches.

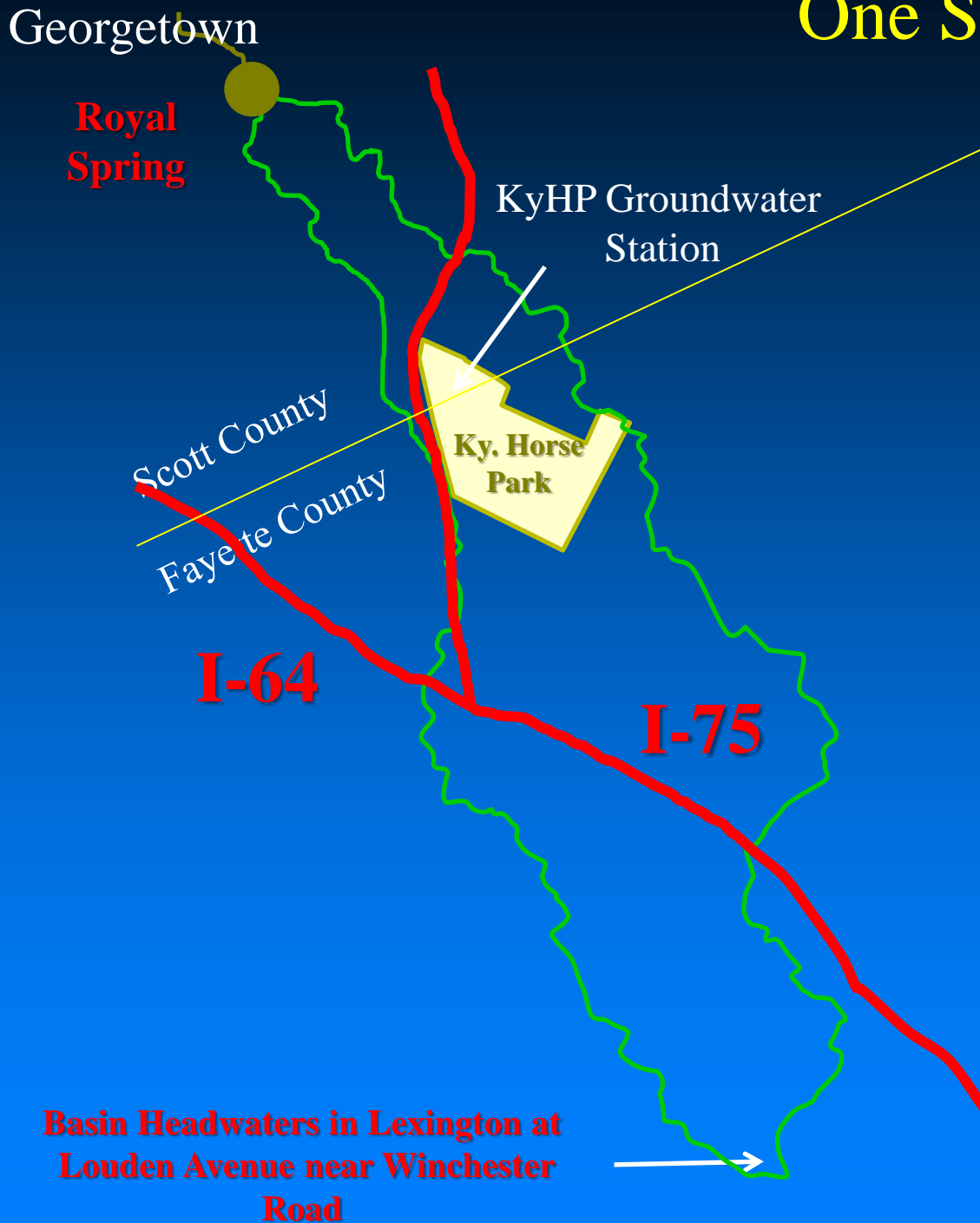
An Example is Characterizing Groundwater Flow and Factors that Effect Groundwater Quality in the State's Karst Areas



Where The Aquifer System Looks Something Like This:



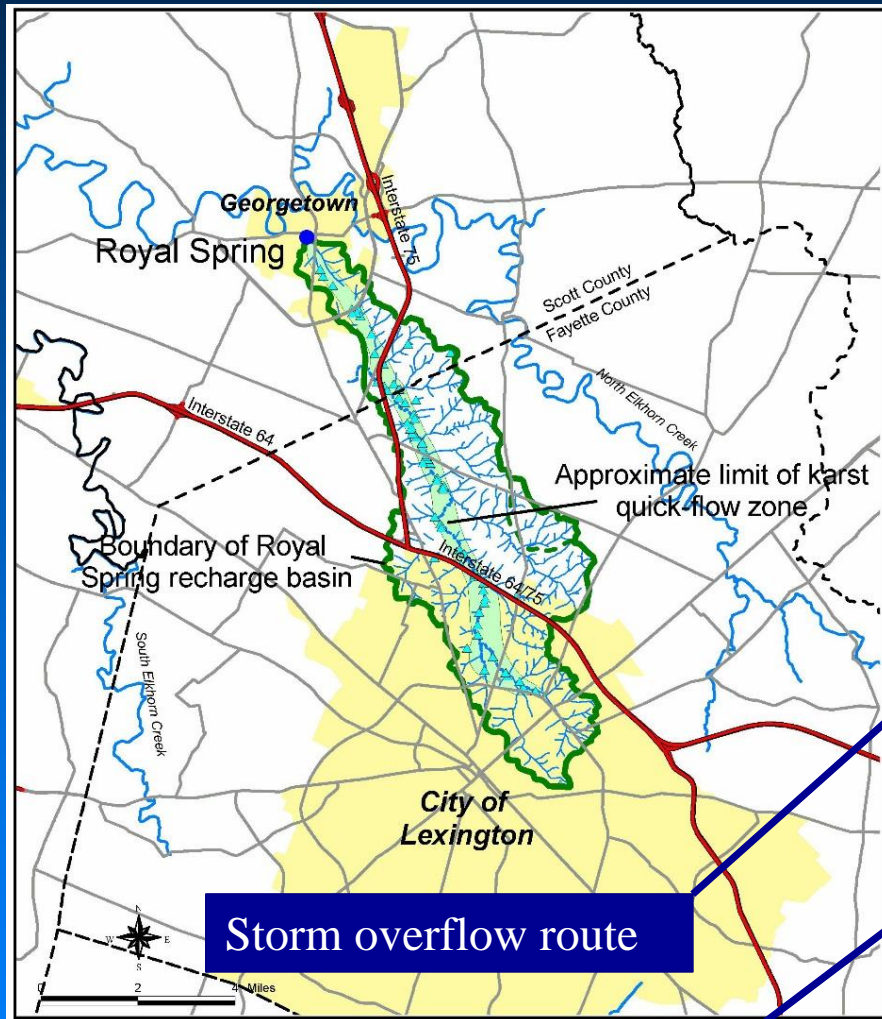
One Such KGS-WRS Project:



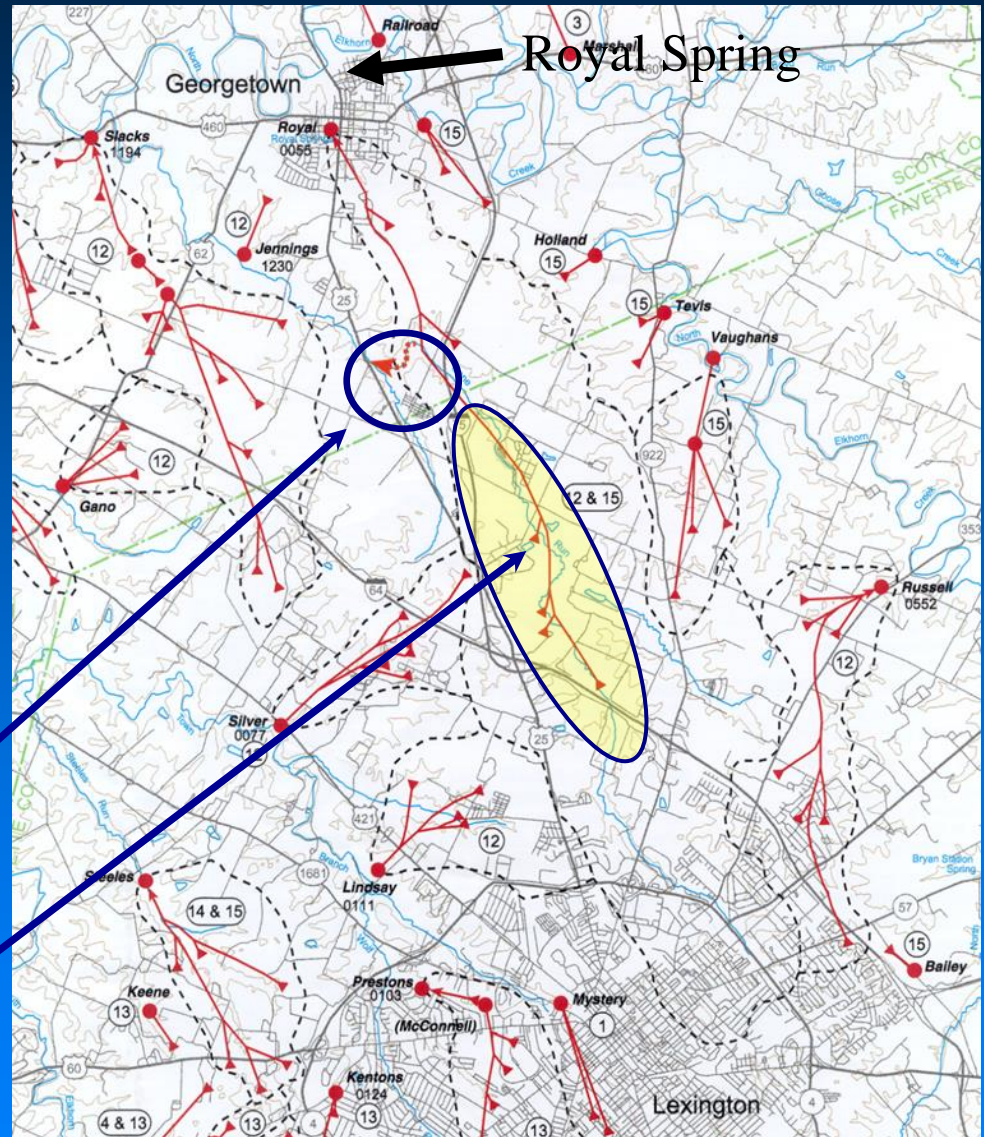
Mass Flux of Potential Contaminants in the Cane Run-Royal Spring Karst Basin

A Collaborative Effort between KGS and UK College of Agriculture and College of Civil Engineering

Cane Run Creek Sinks Underground to Royal Spring Conduit Except During High Flows

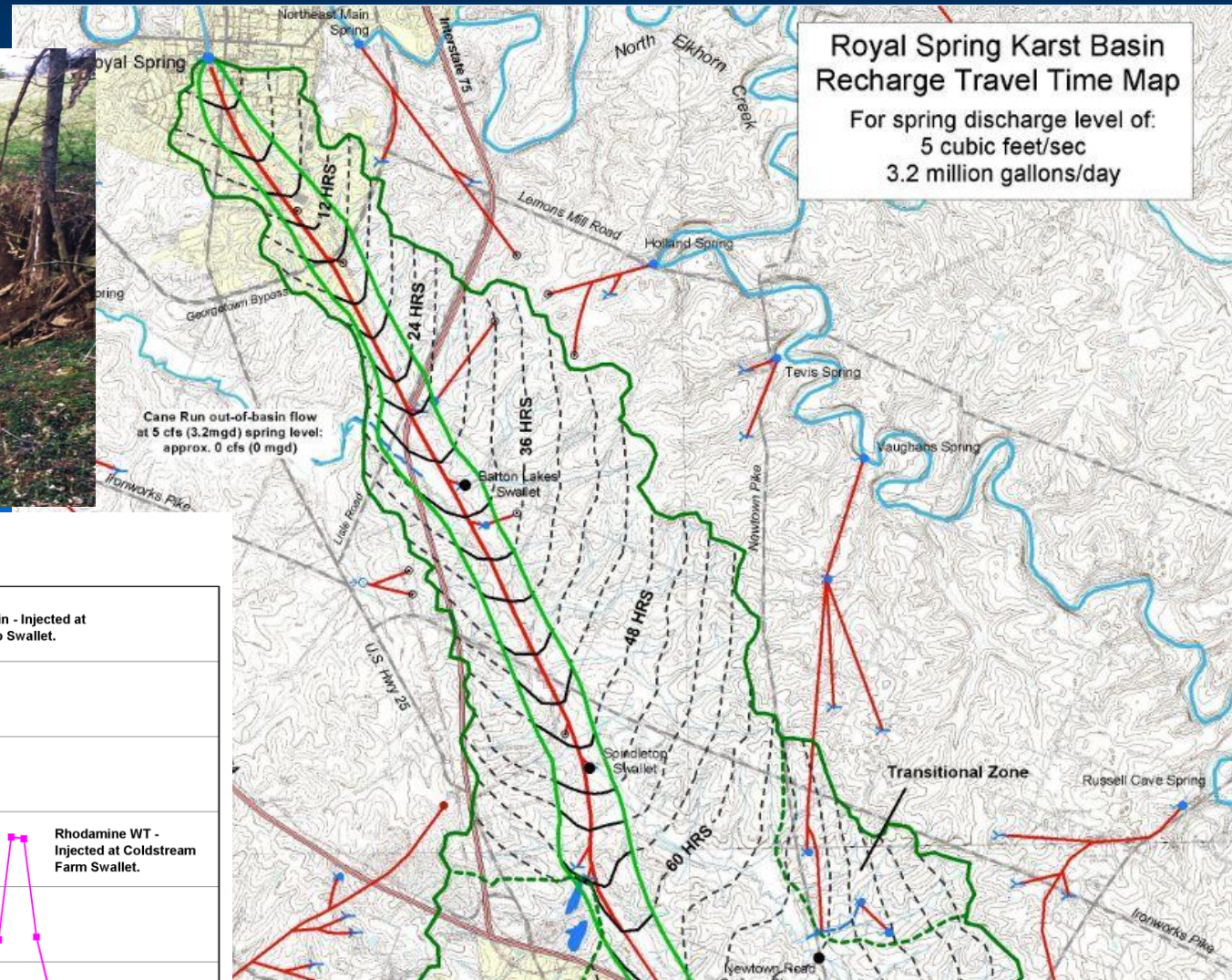


Main sinking reach

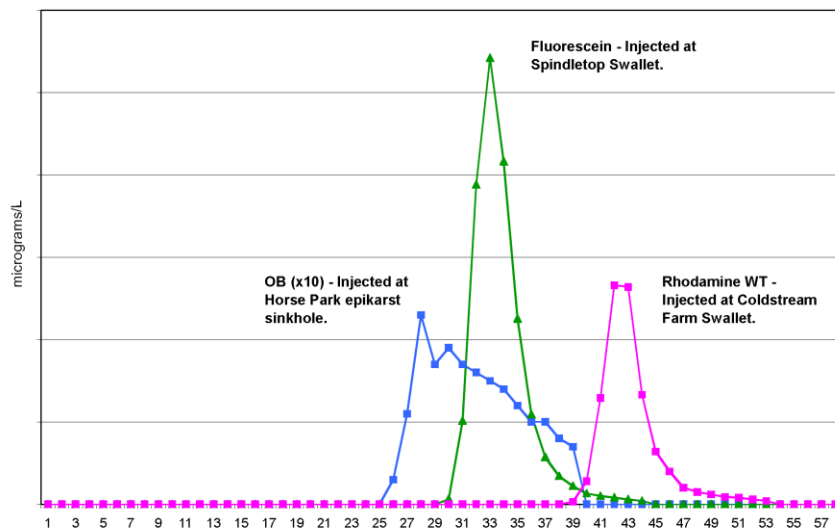


Lexington 30X60 minute Karst Groundwater Basin Map

Water-Tracing Tests Have Been Conducted to Determine Time-of-Travel of Potential Contaminants to Royal Spring



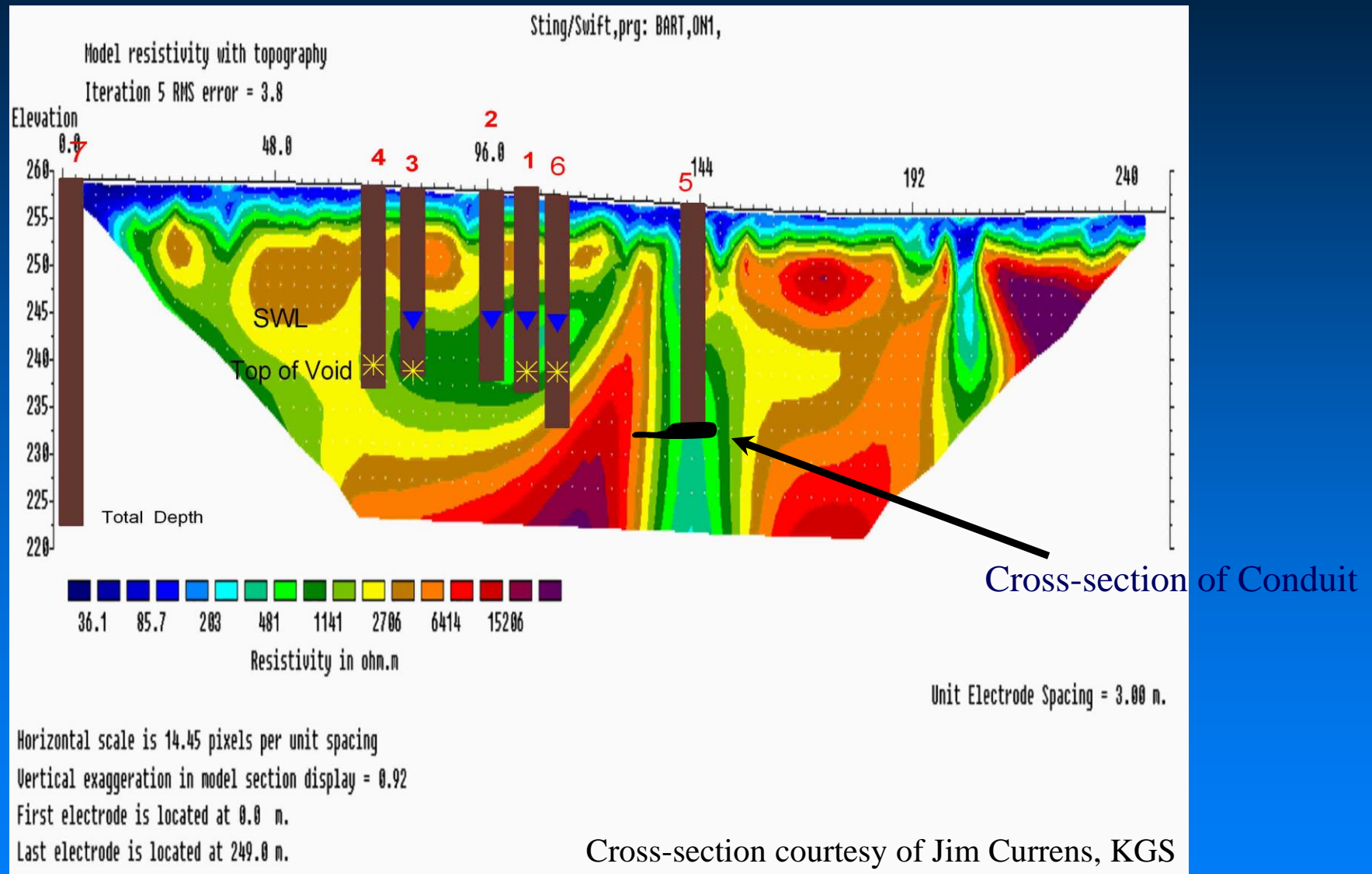
TOT Set4 - April 27th



A Monitoring Well Network Was Installed At the KY Horse Park to Sample Water in the Aquifer and Cave Stream Feeding Royal Spring



Locating the Monitoring Wells Required Help Using Geophysical Survey Data:



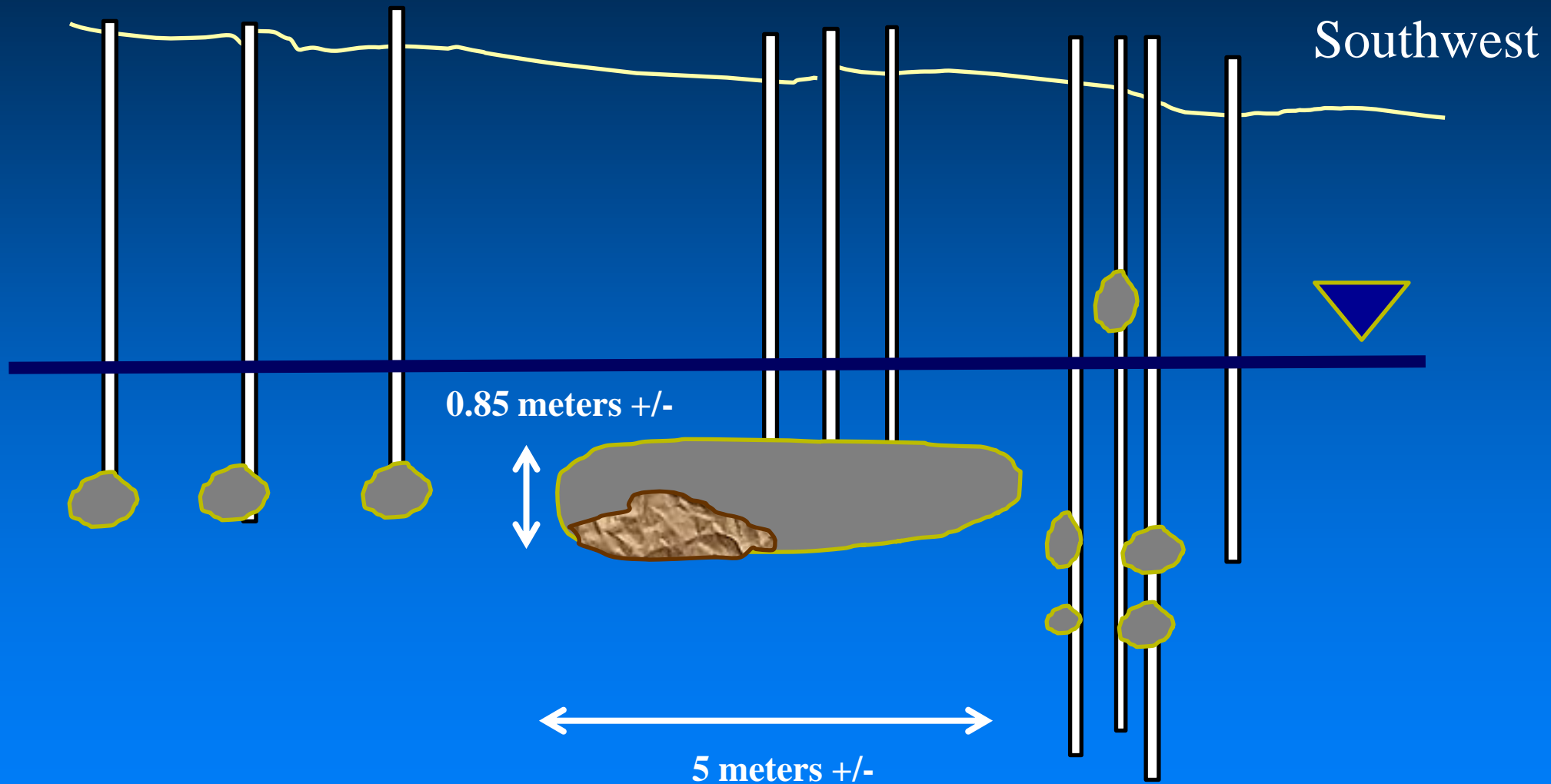
Monitoring wells were drilled into identified low-resistivity target zones indicating fractured/karstic rock and possible groundwater flow zones.

Cartoon View of Drilled Wells and Intercepted Conduits

Northeast

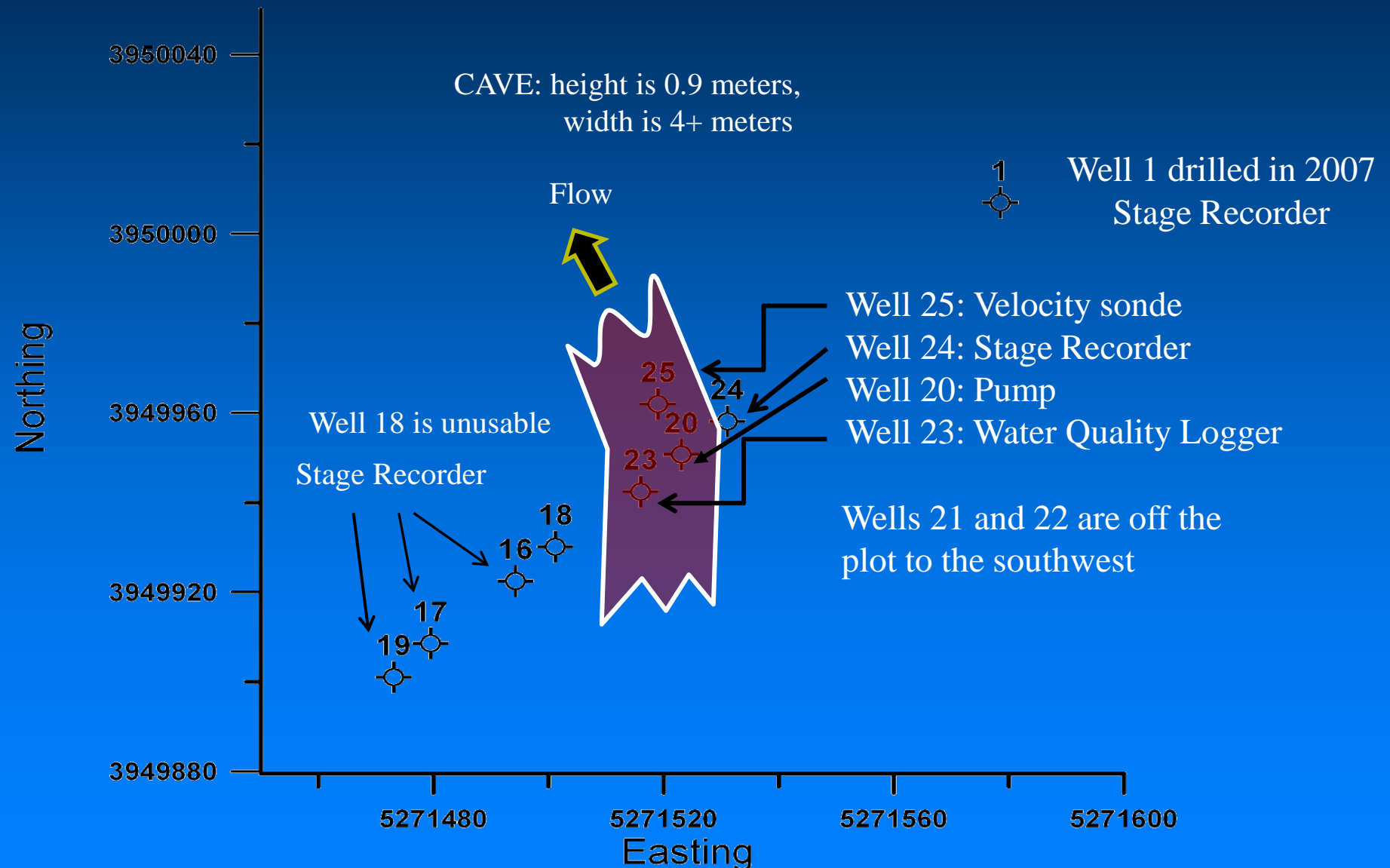
Wells 20, 23, and 25

Southwest

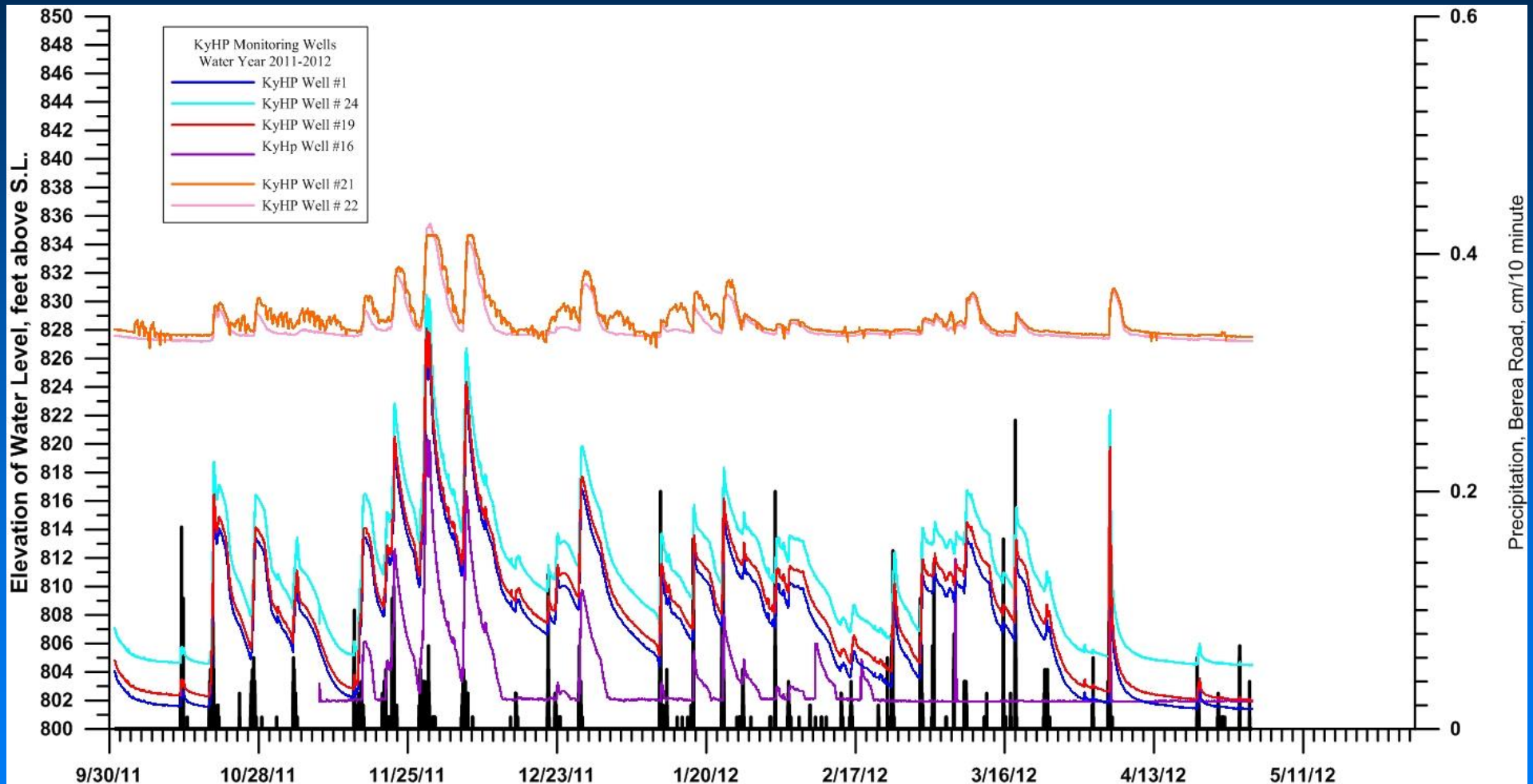


Monitoring Wells at the KyHP Monitoring Site

⊕ Barton Well

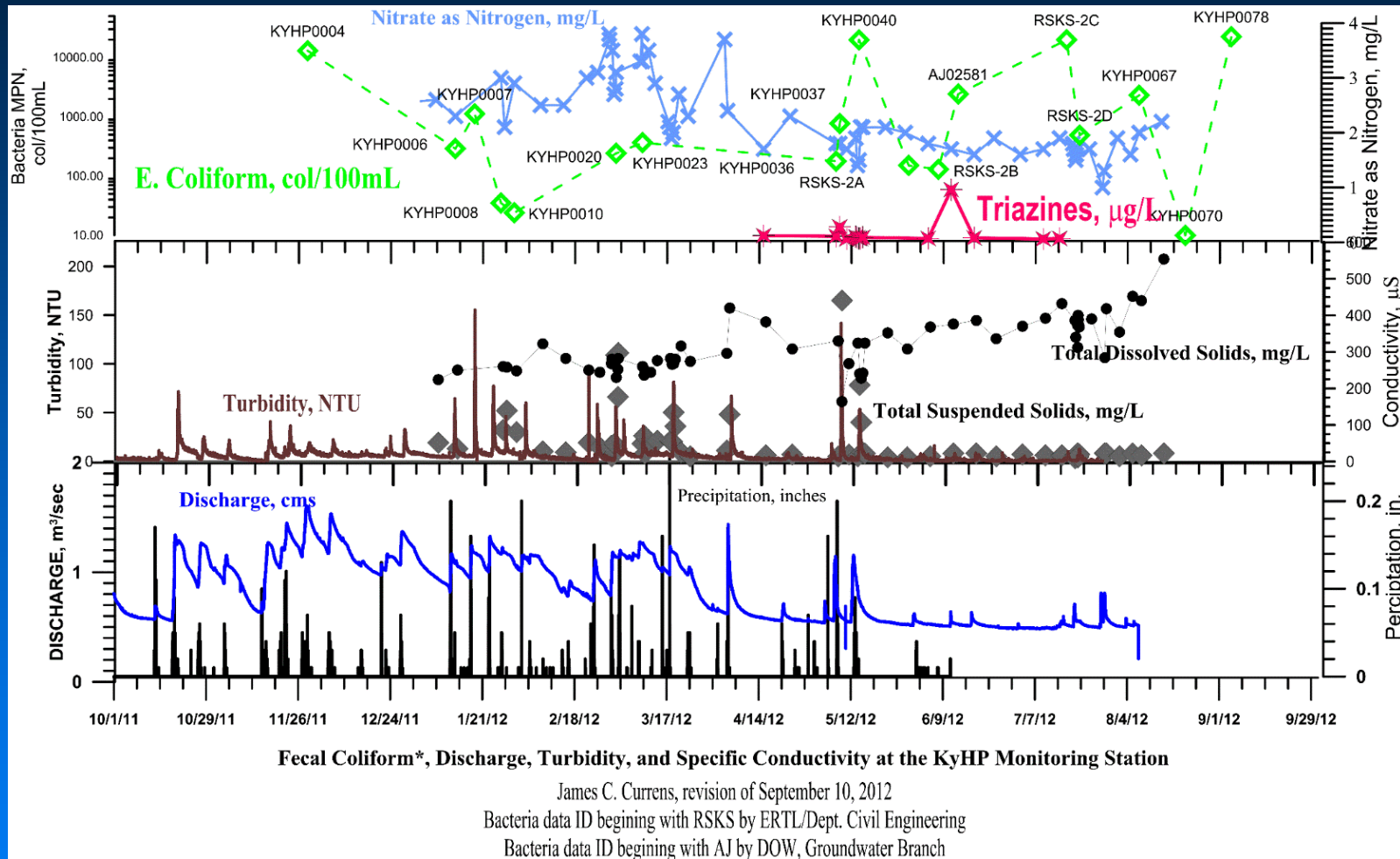


Hydrographs Showing Hydraulic Communication and Water Levels in KyHP Monitoring Wells:



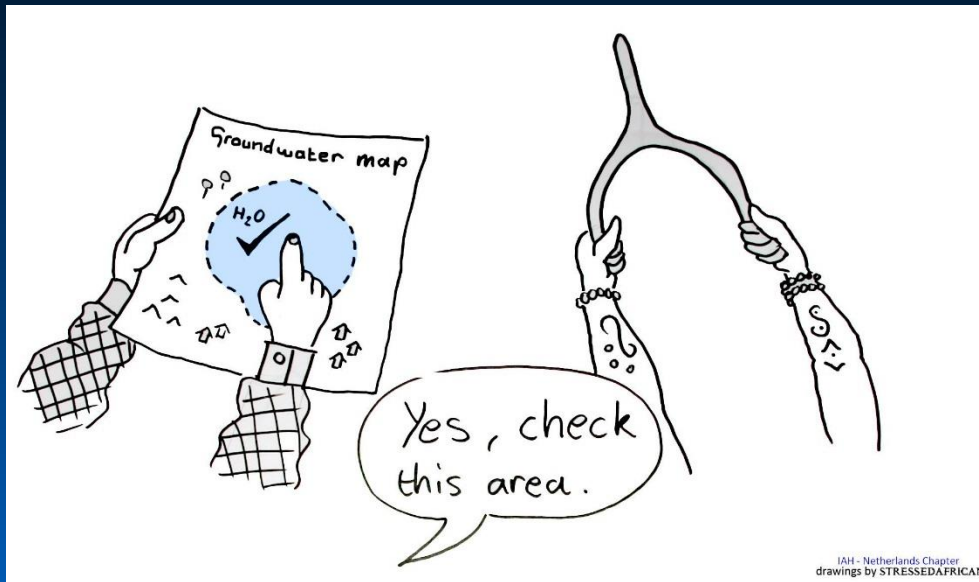
Data courtesy of Jim Currens, KGS

Three years (2011-14) of collected groundwater-quality data have been compiled and are being analyzed.

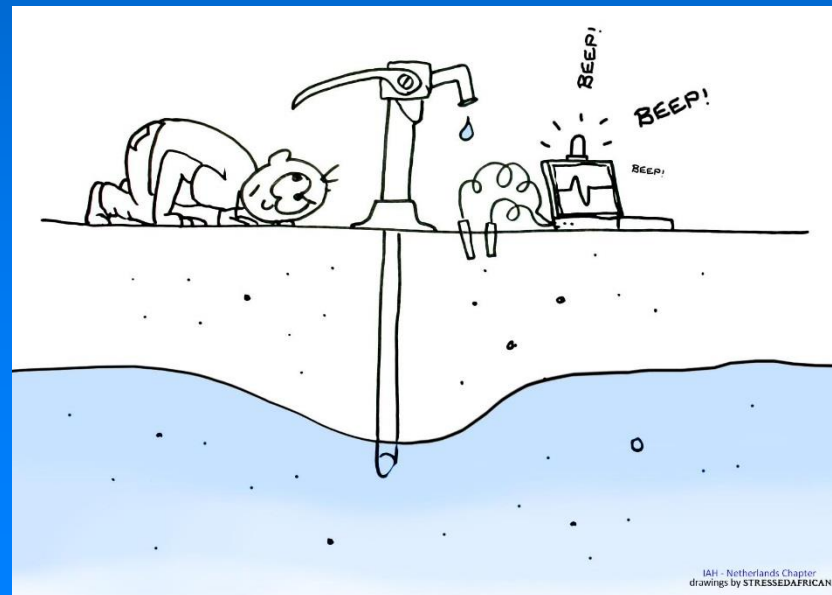


- Annual mass flux calculations for nitrogen, phosphorus, and total suspended sediments have been calculated.
- KGS Report of Investigation forthcoming in mid-2015.

➤ KGS Groundwater Data Repository



➤ Groundwater Monitoring Network



Groundwater Data Repository (GWDR)

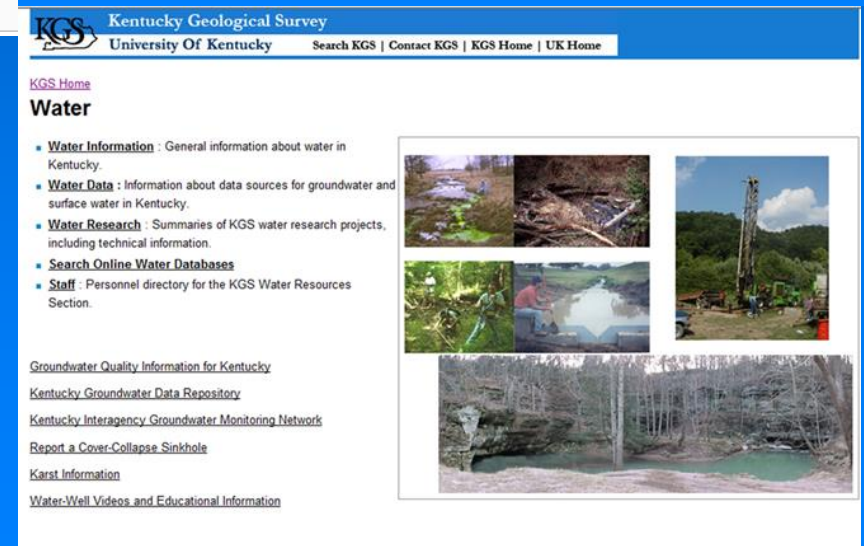
All Groundwater Data Collected in Kentucky is Stored in the Kentucky Geological Survey's Data Base and Can Be Accessed Via the Internet:

- The GWDR currently contains:
 - Over 92,000 water well records.
 - Approximately 5,100 spring records.
 - About 60,000 groundwater-quality analyses.
- Compiles data contributed from: DOW, USGS (NWIS), EPA (Storet), KGS, Others
- Largest single source of data are water-well construction records submitted by Kentucky Certified Drillers.


<http://kgs.uky.edu/kgsweb/DataSearching/watersearch.asp>



<http://www.uky.edu/KGS/water/index.htm>



Searching the Groundwater Data Repository (GWDR)



Kentucky Geological Survey
University Of Kentucky

[Search KGS](#) | [Contact KGS](#) | [KGS Home](#) | [UK Home](#)

[KGS Home](#) > [Data, Maps, & Pubs](#) > Groundwater Information Via The Kentucky Groundwater Data Repository

[send us feedback](#) | [tutorials](#)

Groundwater Information Via The Kentucky Groundwater Data Repository

The Kentucky Geological Survey maintains databases of research data that are searchable on the Web. Below are links to services that can be used to find various types of groundwater data, and to other sites with information about water research in Kentucky:

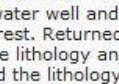
- [Changes to the Groundwater Data Repository database.](#)
- [Changes to the KY Groundwater-Quality Data Services](#)

Water Wells & Springs

Groundwater Quality

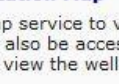
Other Water Information

➤ [Search for Water Well & Spring Records](#)

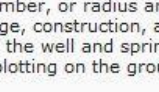


Search for water well and spring data by county, quadrangle, AKGWA number, or radius around a point of interest. Returned data includes information about location, useage, construction, and when available, the lithology and casing data for a well. You can also download the well and spring locations and the lithology and casing data. Map links are also given for plotting on the groundwater map service.

➤ [Water Well & Spring Location Map](#)



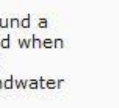
Use this map service to view water well and spring service can also be accessed through the water w map link to view the well on this map service).



Kentucky Groundwater Data
Water Well and Spring Location

[KGS Home](#) > [Maps, Pubs, & Data](#) > [Groundwater](#)

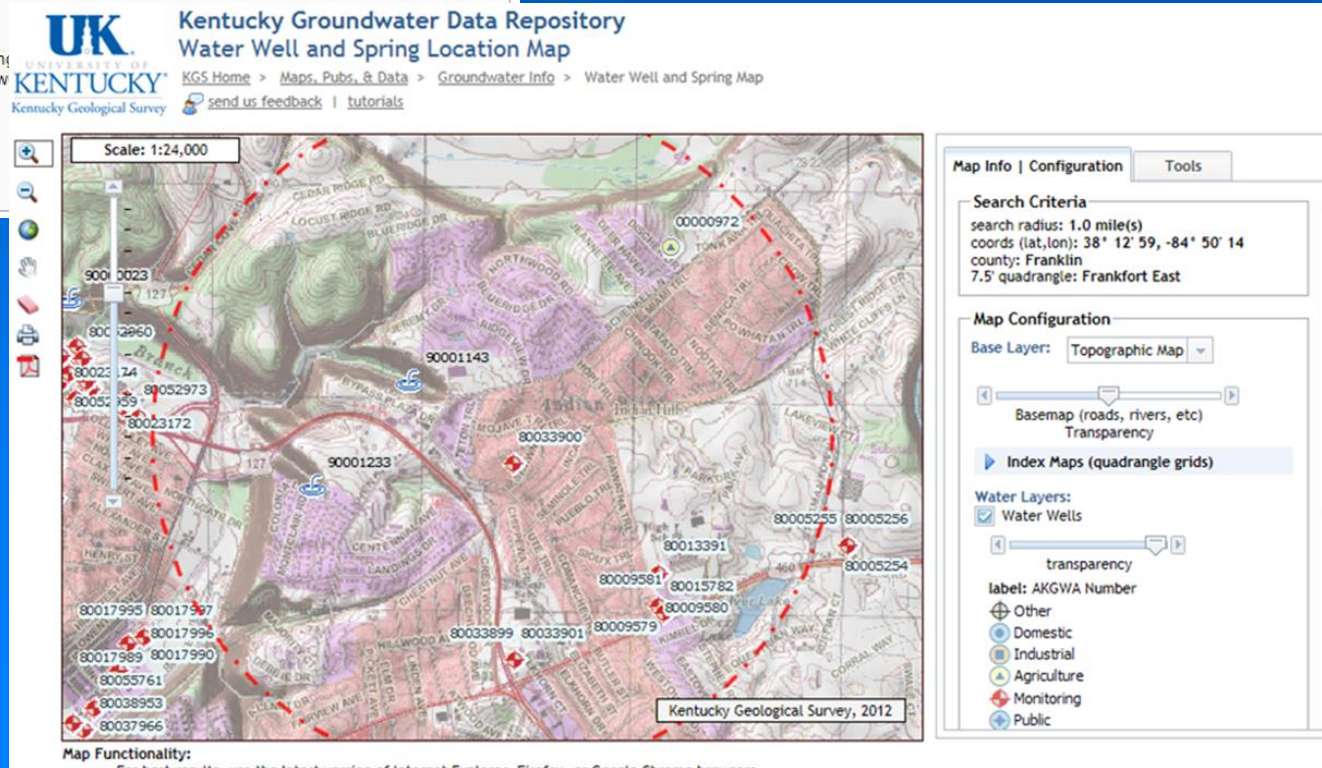
[send us feedback](#) | [tutorials](#)



Scale: 1:24,000

Menu-Driven Queries

User-interactive Map Search



Working in Cooperation with KDOW, Driller's Well Construction Logs were Scanned and Made Available Online in 2014.

Benefits:

- They are currently the only way to find lithology for wells drilled in the past 10 years.
- Original logs can be used to double-check and correct data returned in searches (lat/lons, TDS, reported yield, etc.).
- Some wells have water-quality data in paper format never entered into the DOW database (primarily bacteria data)
- Drillers themselves appreciate having permanent digital archive of, and ready access to, their well logs.

Do Not Write In This Space ①

For Official Use Only

APR 27 1987

Com
COPY
Env

190401-02.00

GENERAL INFORMATION:

Well Owner's Name: FRANK GAMBLE Owner's Phone: ()

Mailing Address: Lot 1st Rd Well Address (if different from mailing address): SAME

City: Apollite State: GA Zip Code: 30401 City: Apollite State: GA Zip Code: 30401

Well Location: Apollite USGS Quadrangle Name: Grassyp Latitude: 33° 30' 25" N Longitude: 83° 46' 03" W

GENERAL WELL CONSTRUCTION:

Start Date: 2-87 Date: 4-15-87

Finish Date: 2-16-87 Shut-in pressure of flowing well: () psi

Drilling Method: Type of Work:

() Air Rotary () New Well () Discharge: () () Static level below land surface: 30'

() Mud Rotary () Rework () Before pumping: 30'

() Cable () Decision () Pump: () Blowing

() Auger () Plug () Other: ()

Surface Elevation: 680' Static level below land surface: 30'

Total Depth: 90' Shut-in pressure of flowing well: () psi

Depth to Bottom: 30' Shut-in pressure of flowing well: () psi

WATER QUALITY:

Date: 4-15-87 Date: 4-15-87

Well depth down to bottom: 30' Shut-in pressure of flowing well: () psi

Appearance: Other: ()

() Clear () Hazy () Turbidity: ()

() Cloudy () Muddy () Other: ()

Type and grade of equipment used: 1" CORK

Results of test: () Total

Test performed by: () Laboratory (attach copy of report)

Date: 4-20-87

WELL COMPLETION:

From: 21' To: 30' Casing () Flush Thread () Welded () Other: ()

Casing type: PVC

Casing joint: Open Hole

Is a process stoppage indicated? () Yes () No

Screen: () From: 21' To: 30' A. Type: Slit B. Size: 1/2"

Gravel pack: () From: 21' To: 30' A. Type: Slit B. Size: 1/2"

Seal Description: Clay Surface: Clay Bottom: Clay

Backfill material: () Gravel () Open Hole () Other: ()

LITHOLOGIC LOG (for additional space, use additional forms):

Feet below surface: 0-8' Description: Clay Gravel Well Quality and GPM: 30-60 GPM

8-90' Description: Clay Gravel

90-95' Description: Clay Gravel

95-100' Description: Clay Gravel

100-110' Description: Clay Gravel

110-120' Description: Clay Gravel

120-130' Description: Clay Gravel

130-140' Description: Clay Gravel

140-150' Description: Clay Gravel

150-160' Description: Clay Gravel

160-170' Description: Clay Gravel

170-180' Description: Clay Gravel

180-190' Description: Clay Gravel

190-200' Description: Clay Gravel

200-210' Description: Clay Gravel

210-220' Description: Clay Gravel

220-230' Description: Clay Gravel

230-240' Description: Clay Gravel

240-250' Description: Clay Gravel

250-260' Description: Clay Gravel

260-270' Description: Clay Gravel

270-280' Description: Clay Gravel

280-290' Description: Clay Gravel

290-300' Description: Clay Gravel

300-310' Description: Clay Gravel

310-320' Description: Clay Gravel

320-330' Description: Clay Gravel

330-340' Description: Clay Gravel

340-350' Description: Clay Gravel

350-360' Description: Clay Gravel

360-370' Description: Clay Gravel

370-380' Description: Clay Gravel

380-390' Description: Clay Gravel

390-400' Description: Clay Gravel

400-410' Description: Clay Gravel

410-420' Description: Clay Gravel

420-430' Description: Clay Gravel

430-440' Description: Clay Gravel

440-450' Description: Clay Gravel

450-460' Description: Clay Gravel

460-470' Description: Clay Gravel

470-480' Description: Clay Gravel

480-490' Description: Clay Gravel

490-500' Description: Clay Gravel

500-510' Description: Clay Gravel

510-520' Description: Clay Gravel

520-530' Description: Clay Gravel

530-540' Description: Clay Gravel

540-550' Description: Clay Gravel

550-560' Description: Clay Gravel

560-570' Description: Clay Gravel

570-580' Description: Clay Gravel

580-590' Description: Clay Gravel

590-600' Description: Clay Gravel

600-610' Description: Clay Gravel

610-620' Description: Clay Gravel

620-630' Description: Clay Gravel

630-640' Description: Clay Gravel

640-650' Description: Clay Gravel

650-660' Description: Clay Gravel

660-670' Description: Clay Gravel

670-680' Description: Clay Gravel

680-690' Description: Clay Gravel

690-700' Description: Clay Gravel

700-710' Description: Clay Gravel

710-720' Description: Clay Gravel

720-730' Description: Clay Gravel

730-740' Description: Clay Gravel

740-750' Description: Clay Gravel

750-760' Description: Clay Gravel

760-770' Description: Clay Gravel

770-780' Description: Clay Gravel

780-790' Description: Clay Gravel

790-800' Description: Clay Gravel

800-810' Description: Clay Gravel

810-820' Description: Clay Gravel

820-830' Description: Clay Gravel

830-840' Description: Clay Gravel

840-850' Description: Clay Gravel

850-860' Description: Clay Gravel

860-870' Description: Clay Gravel

870-880' Description: Clay Gravel

880-890' Description: Clay Gravel

890-900' Description: Clay Gravel

900-910' Description: Clay Gravel

910-920' Description: Clay Gravel

920-930' Description: Clay Gravel

930-940' Description: Clay Gravel

940-950' Description: Clay Gravel

950-960' Description: Clay Gravel

960-970' Description: Clay Gravel

970-980' Description: Clay Gravel

980-990' Description: Clay Gravel

990-1000' Description: Clay Gravel

AFFIRMATION: The work described above was done under my supervision, and this report is true and correct to the best of my knowledge.

NOTE: The water well owner is not responsible for water quality or quantity encountered while drilling or completing this well.

Signature of Driller: Carl L. Henderson Date: 4-21-87

Signature of Owner: Frank Gamble Date: 4-21-87

Signature of Tester: Carl L. Henderson Date: 4-21-87

Signature of Installer: Carl L. Henderson Date: 4-21-87

Signature of Pump Installer: Carl L. Henderson Date: 4-21-87

Signature of Subcontractor: Carl L. Henderson Date: 4-21-87

Signature of Other: Carl L. Henderson Date: 4-21-87

White Copy in Division of Water, Yellow Copy to Owner, Pink Copy for Driller's Files

22049

Groundwater-Quality Data Accessible In GWDR

Bulk

pH
Conductance
Temperature

Major Ions

Bicarbonate
Carbonate
Chloride
Sulfate
Potassium
Magnesium
Calcium

Nutrients

Nitrate-Nitrogen
Nitrite-Nitrogen
Ammonia-Nitrogen
Total Kjeldahl Nitrogen
Total Organic Carbon
Total Phosphorus
Ortho-Phosphate

Pesticides

2,4-D
Alachlor
Atrazine
Cyanazine
Metolachlor
Simazine

Organics

Nitrogen/
Phosphorus
Chlorinated
Pesticides
Herbicides
PCBs

Inorganics

Chlorine
Fluorine

Residues

Total Dissolved Solids
Total Suspended Solids

VOC's

Benzene
Toluene
Ethyl Benzene
Xylene
MTBE

Aluminum
Arsenic
Barium
Cadmium
Calcium
Chromium
Copper
Iron

Metals

Lead
Magnesium
Manganese
Nickel
Potassium
Selenium
Silver
Sodium

Sulfur
Zinc

Range-of-Value Groundwater-Quality Maps Are Also Available On-Line for 32 Parameters (Most Updated in 2014)

Nitrate is the most common form of nitrogen in groundwater. Nitrite is a reduced form of nitrogen that is unstable in oxygenated environments and is much less common than nitrate in uncontaminated groundwater.

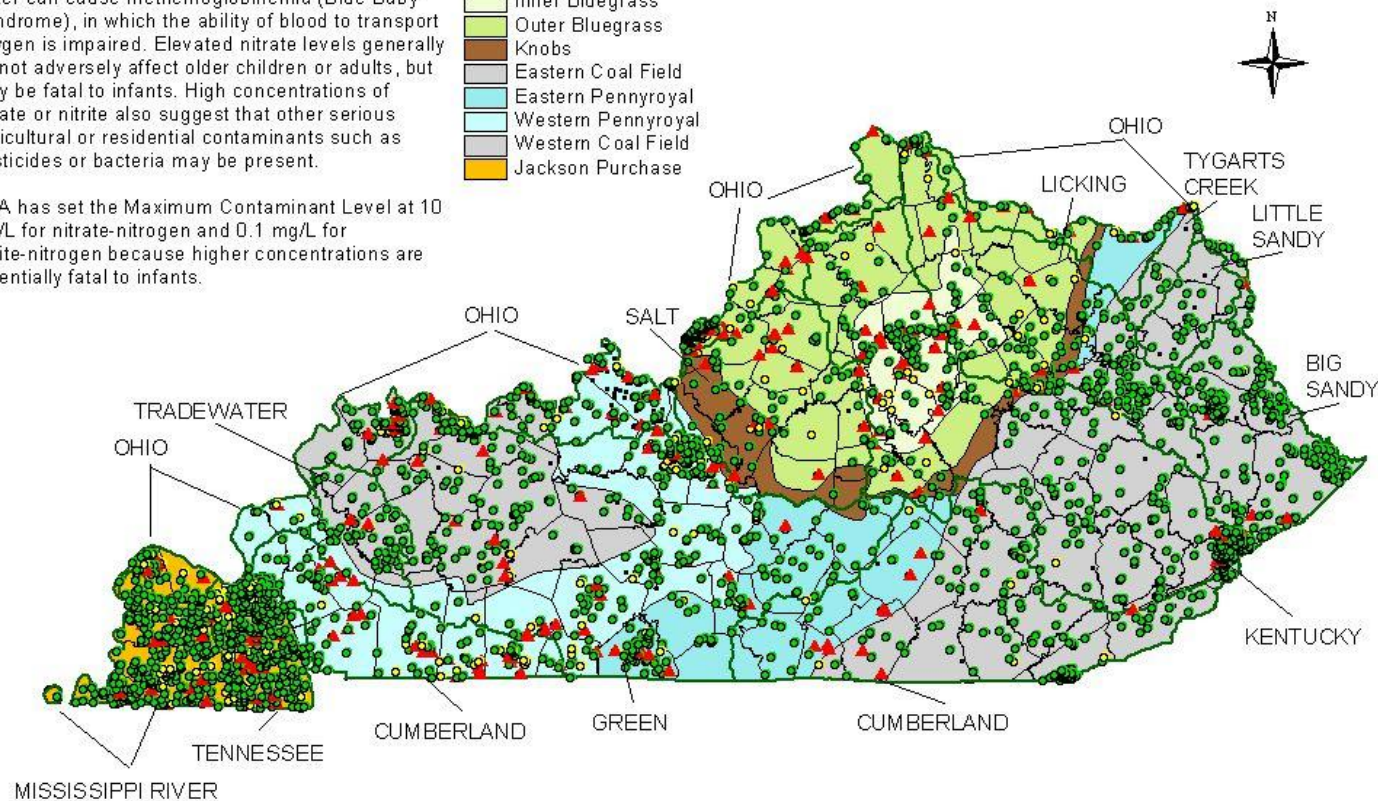
High nitrate or nitrite concentrations in drinking water can cause methemoglobinemia (Blue Baby Syndrome), in which the ability of blood to transport oxygen is impaired. Elevated nitrate levels generally do not adversely affect older children or adults, but may be fatal to infants. High concentrations of nitrate or nitrite also suggest that other serious agricultural or residential contaminants such as pesticides or bacteria may be present.

EPA has set the Maximum Contaminant Level at 10 mg/L for nitrate-nitrogen and 0.1 mg/L for nitrite-nitrogen because higher concentrations are potentially fatal to infants.

Nitrate_nitrogen_web.shp
▲ > 10
● 5.1 - 10
● 0 - 5
● Below detection

Kentucky river basins
Physiographic Regions
Inner Bluegrass
Outer Bluegrass
Knobs
Eastern Coal Field
Eastern Pennyroyal
Western Pennyroyal
Western Coal Field
Jackson Purchase

Nitrate-nitrogen Data for Kentucky

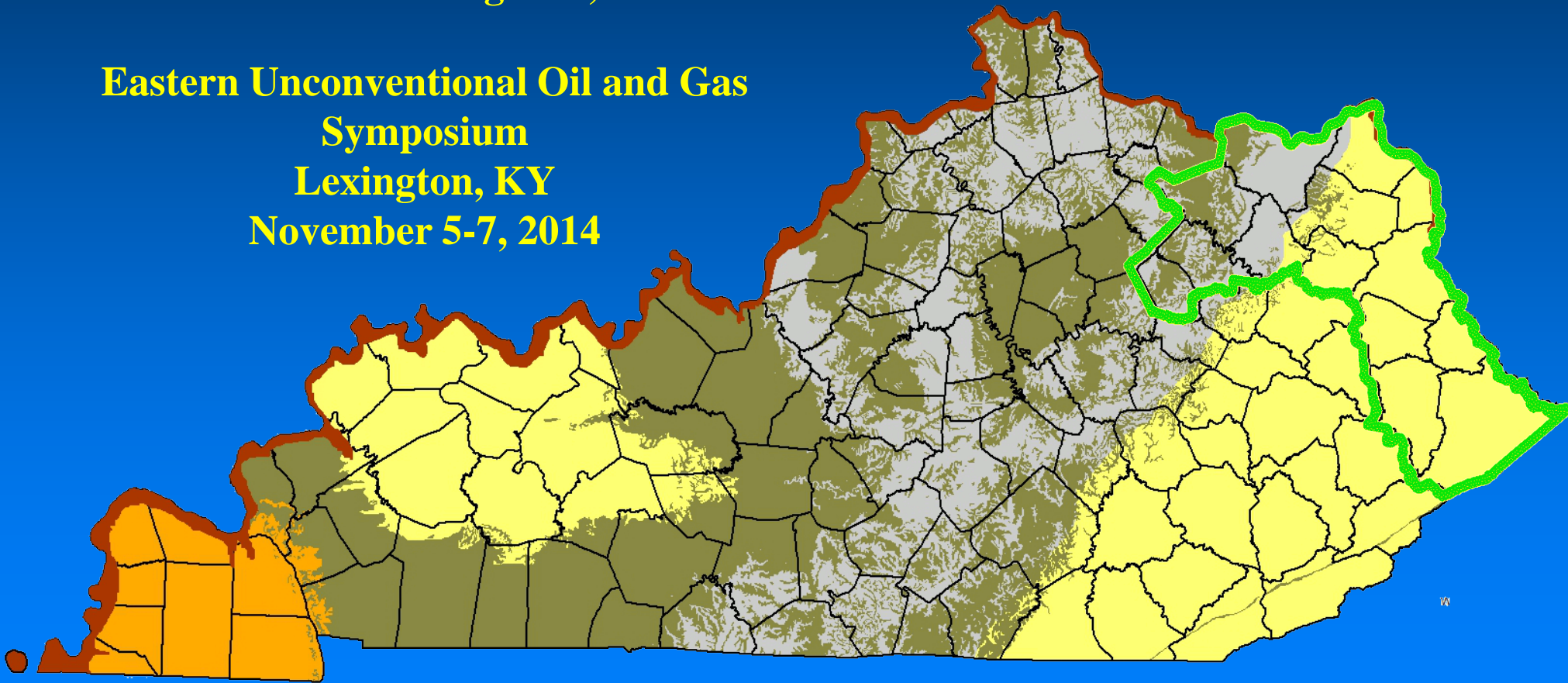


Example Using Data Available in the GWDR:

Groundwater Occurrence and Quality in the Berea Sandstone Unconventional Oil and Gas Play

Bart Davidson and Junfeng Zhu, KGS WRS

Eastern Unconventional Oil and Gas
Symposium
Lexington, KY
November 5-7, 2014



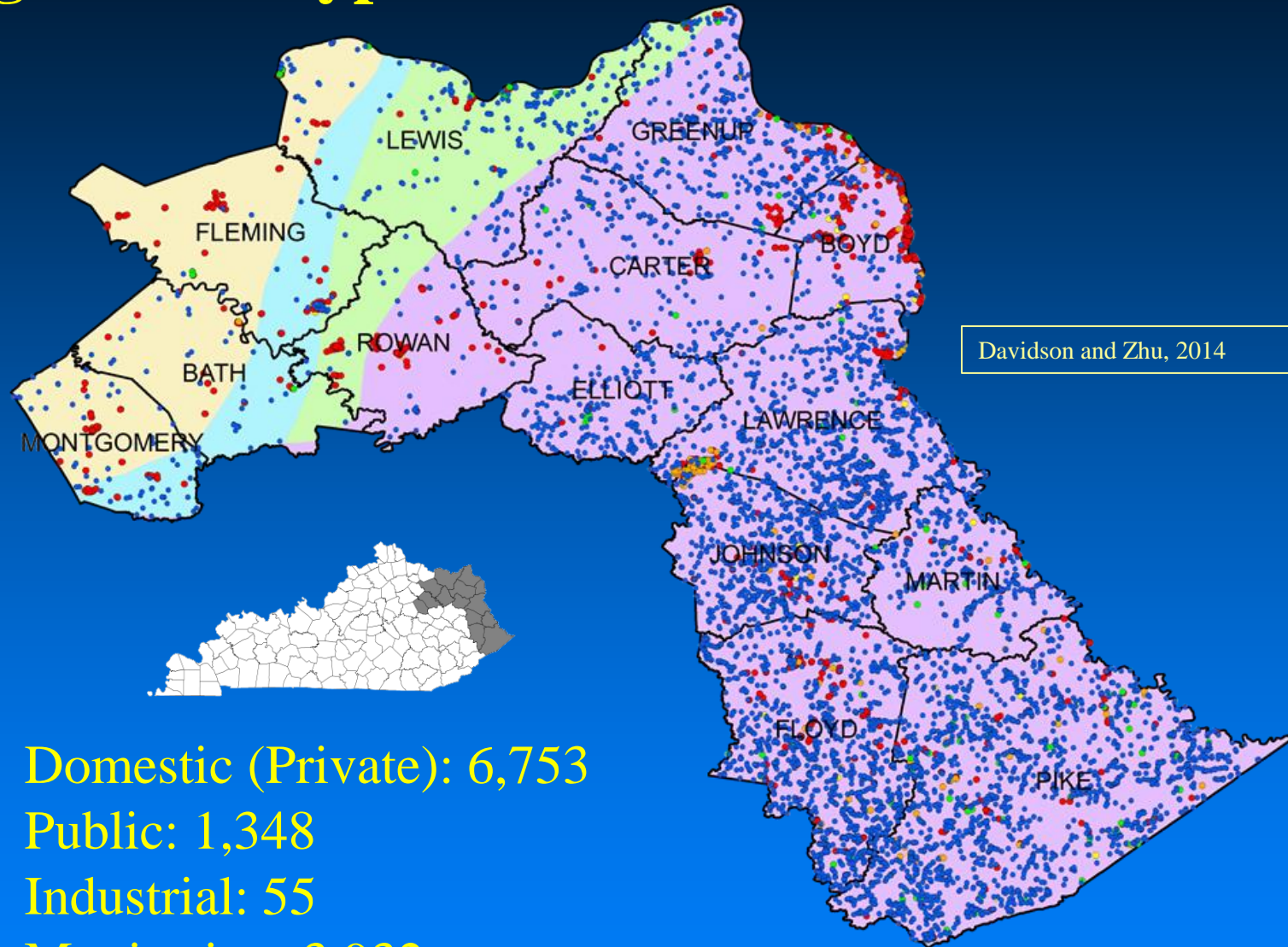
Berea Play area showing physiographic regions and types of water wells

Type of Well

- Domestic
- Public
- Industrial
- Monitoring
- Irrigation

Physiographic Region

- Eastern Coal Field
- Eastern Pennyroyal
- Knobs
- Outer Blue Grass



Domestic (Private): 6,753

Public: 1,348

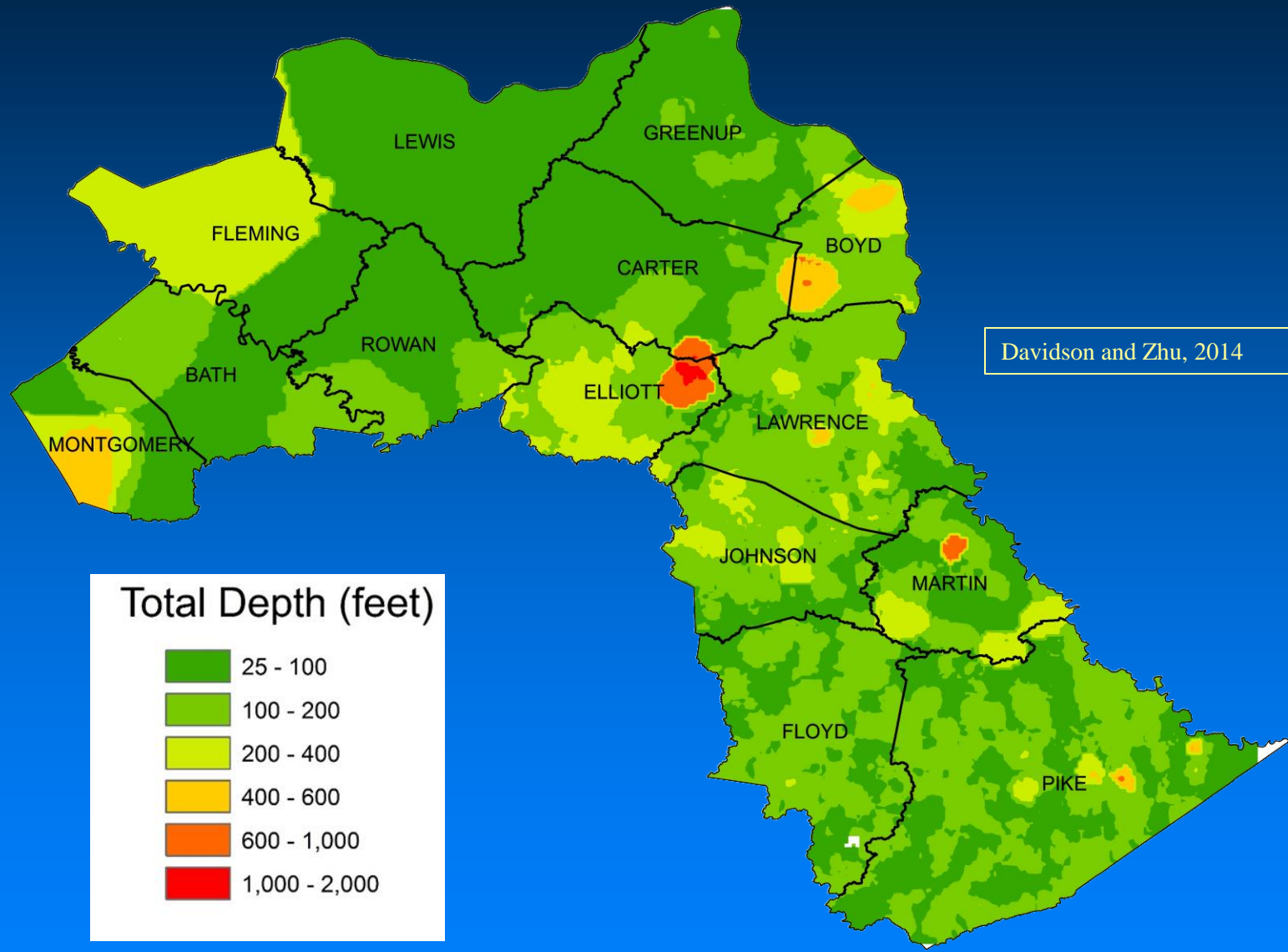
Industrial: 55

Monitoring: 3,932

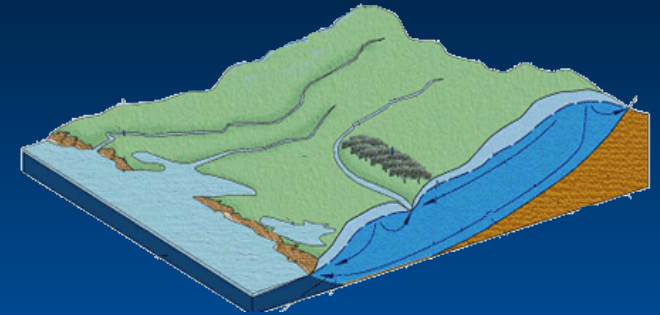
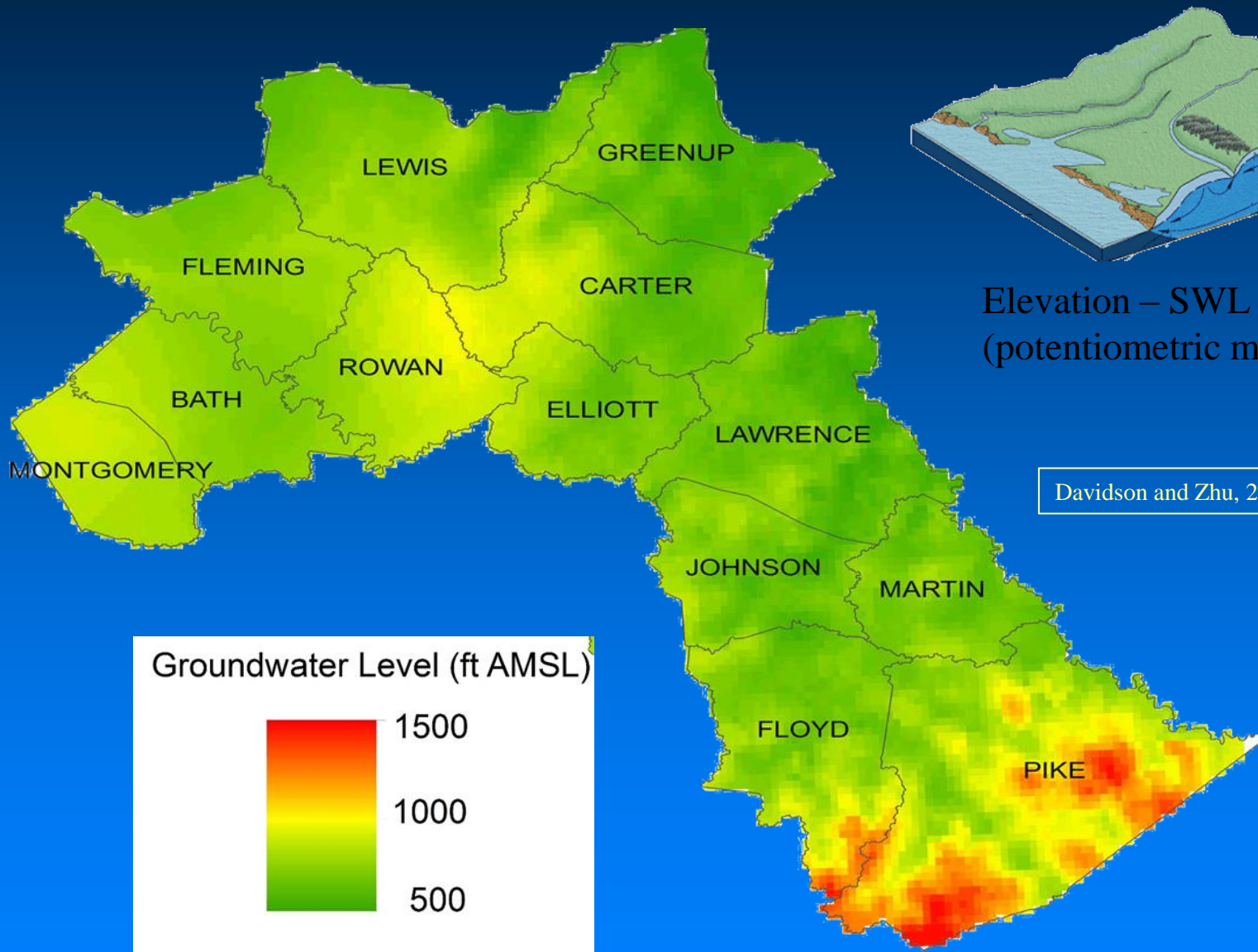
Agriculture (Irrigation or Livestock): 114

TOTAL: 12,202

Total depths for domestic wells (feet below land surface)



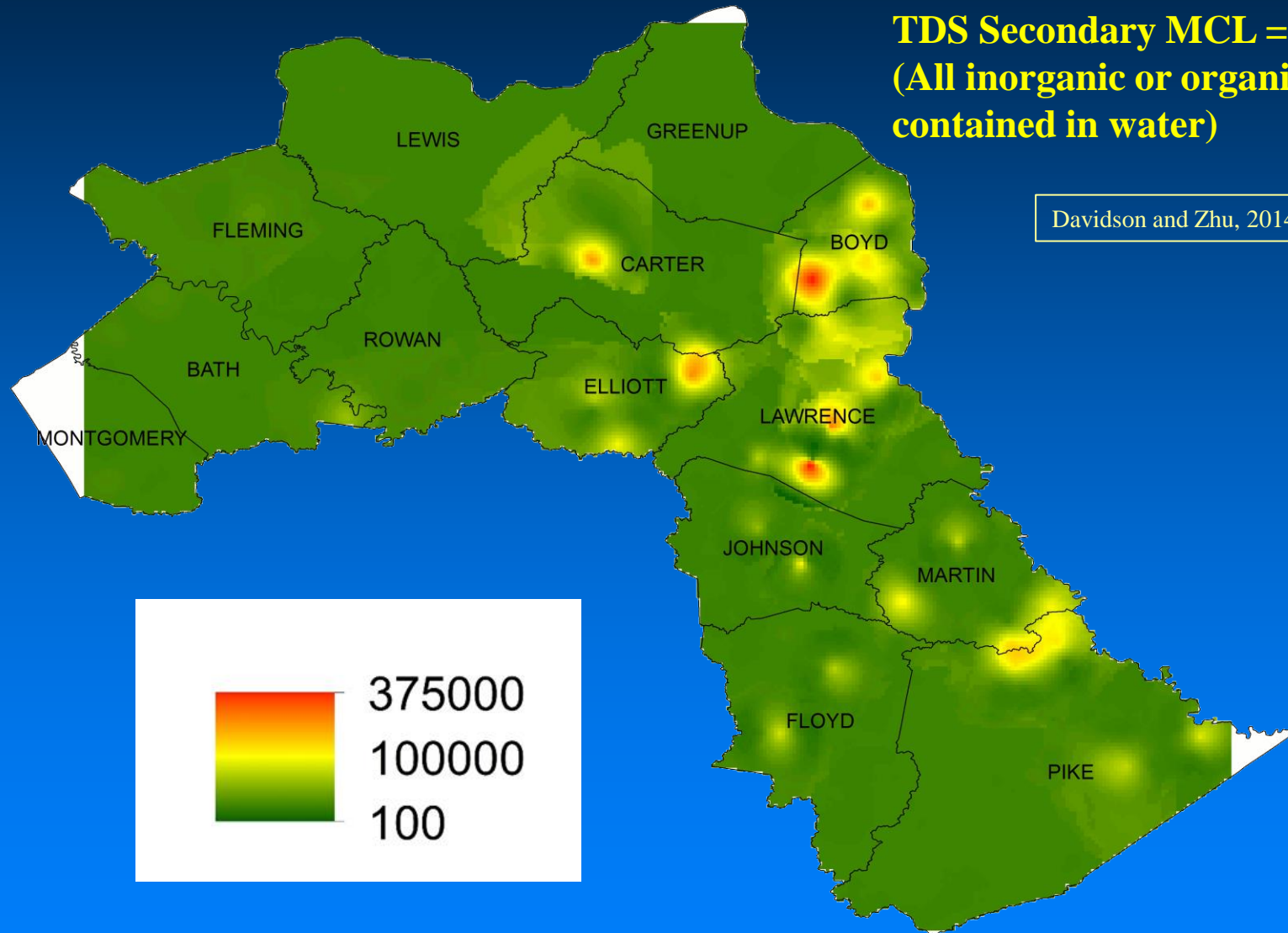
Groundwater Levels Reported in the Berea play area (feet above mean sea level)



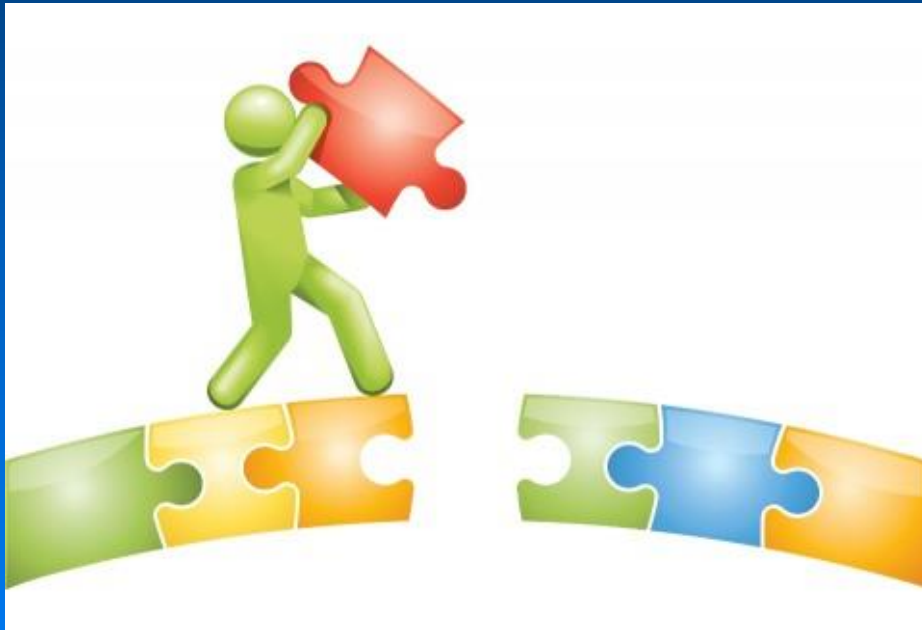
Elevation – SWL = GW level
(potentiometric map)

Davidson and Zhu, 2014

Total Dissolved Solids in Domestic Wells (mg/L)



Although Much Information Is Available By Searching the KGS Websites and the GWDR, There Is One Critical Data Gap:



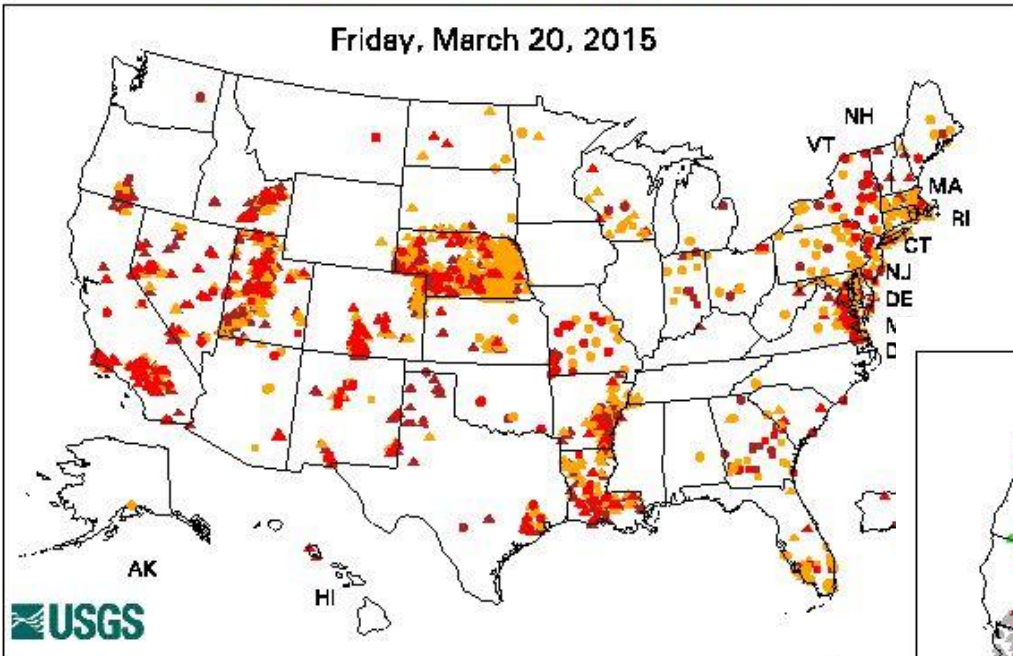
Kentucky lacks a statewide network of long-term groundwater observation (monitoring) wells.

For many parts of the state, groundwater-level data are lacking or more than 20-30 years out-of-date.

Is This A Cause For Concern for Kentucky?

Below Normal Groundwater Levels

Friday, March 20, 2015



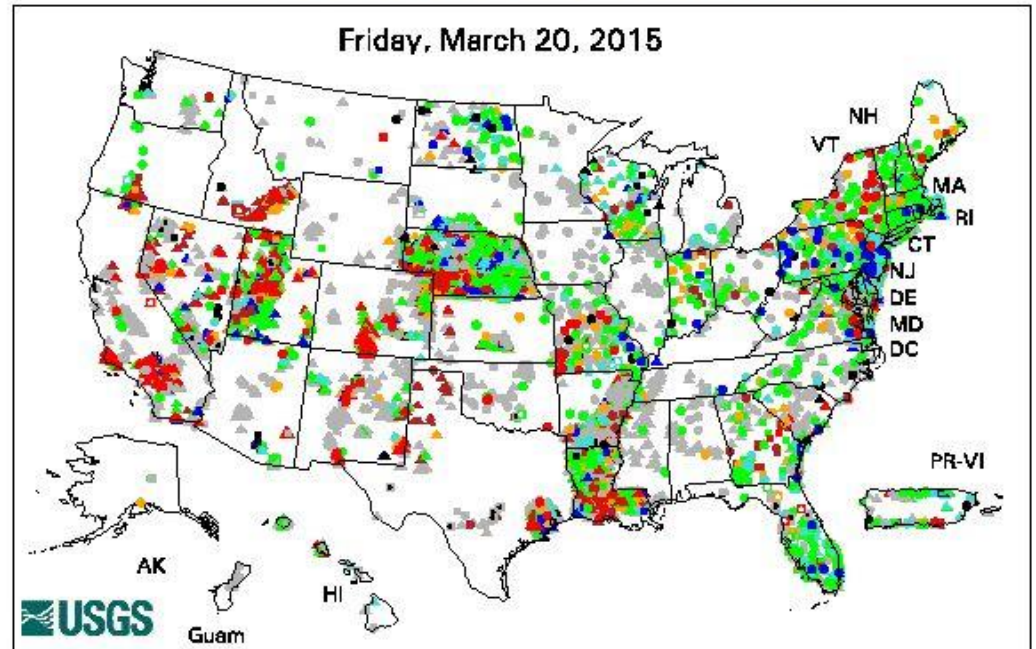
Explanation - Percentile classes (symbol color based on most recent measurement)

Low	<10	10-24	25-75	76-90	>90	High	Not Ranked
	Much Below Normal	Below Normal	Normal	Above Normal	Much Above Normal		

If so, We Need to Address This Critical Data Gap Soon.

Active Groundwater Level Network

Friday, March 20, 2015



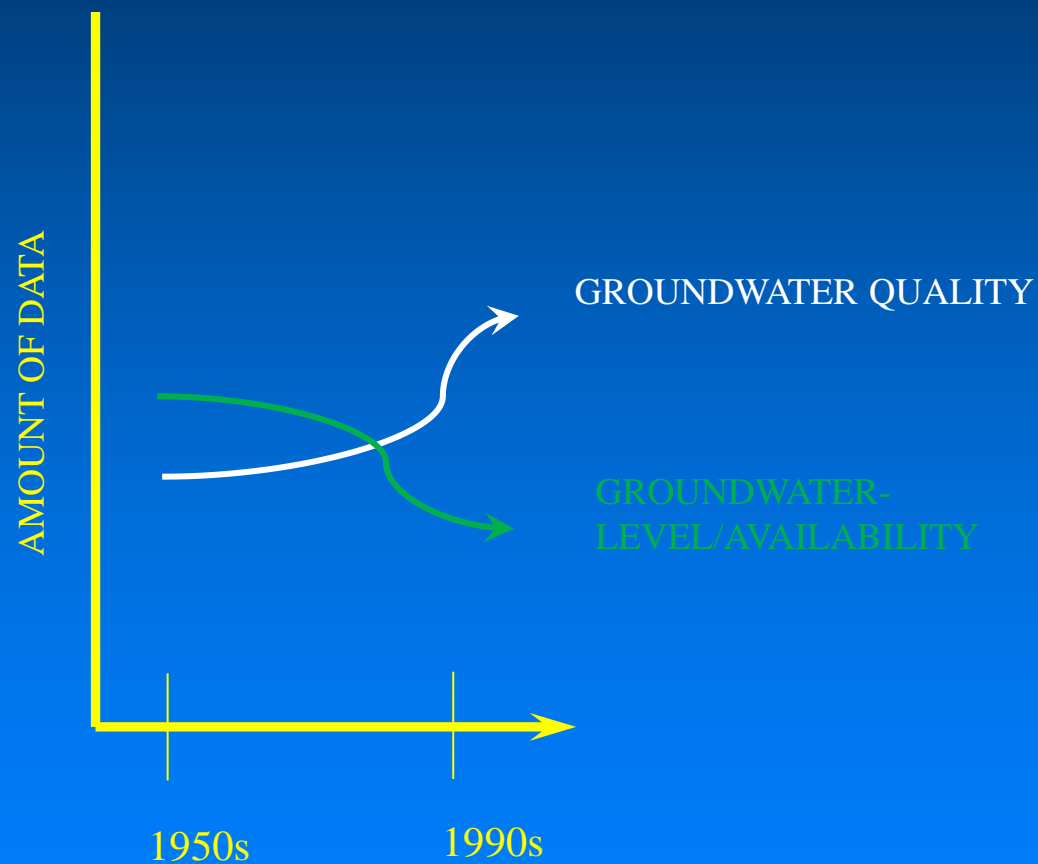
Explanation - Percentile classes (symbol color based on most recent measurement)

Low	<10	10-24	25-75	76-90	>90	High	Not Ranked
	Much Below Normal	Below Normal	Normal	Above Normal	Much Above Normal		

Wells	Springs
○ Real-Time	■
□ Continuous	■
△ Periodic Measurements	■

Long-Term Records of Water-Level Measurements (>5 yrs.) Are Needed To Be Able to Identify Statistical Trends

Comparison of Historical Trends in Kentucky's Groundwater Data Collection Activities



Presently Active Groundwater Monitoring Sites



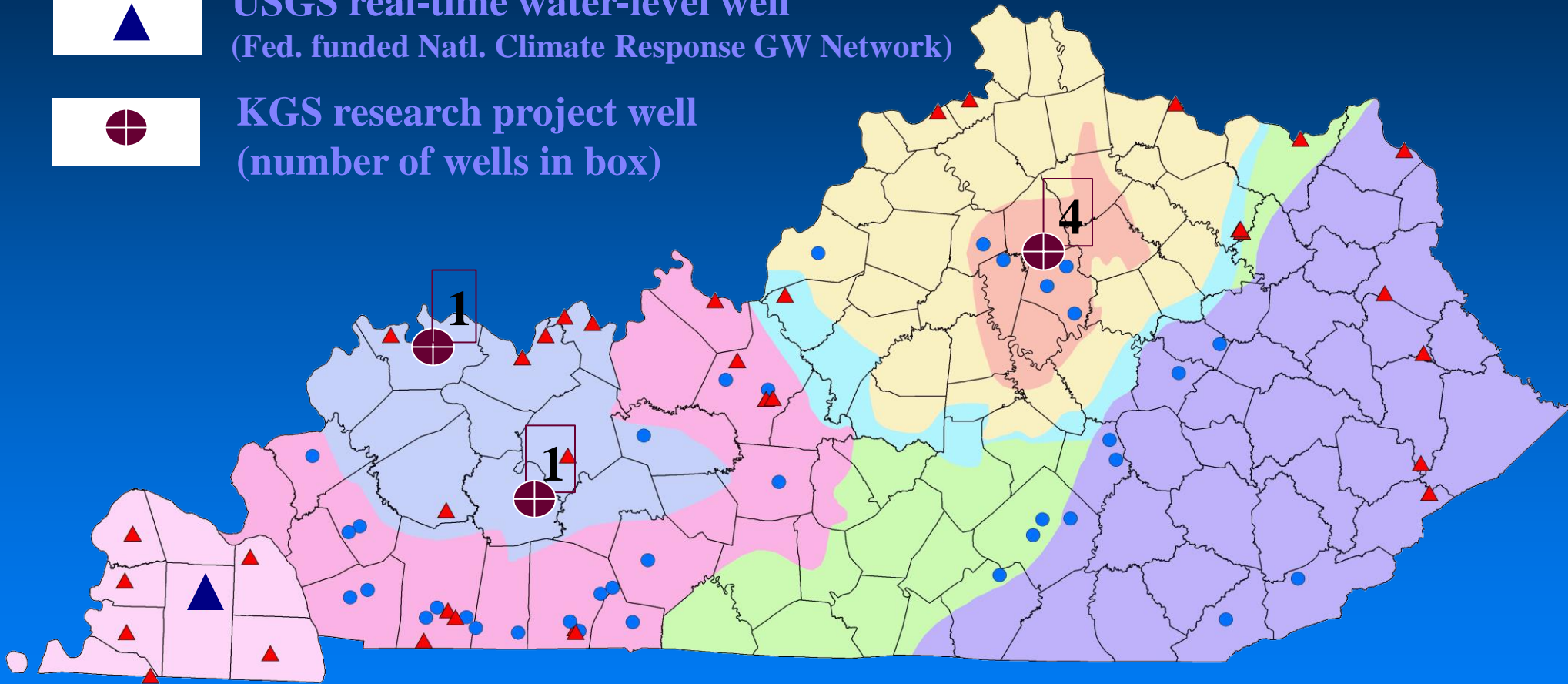
KDOW-ITAC Groundwater-Quality Sites



USGS real-time water-level well
(Fed. funded Natl. Climate Response GW Network)



KGS research project well
(number of wells in box)



Map Courtesy of Rob Blair, KDOW, 2014

KGS Initiation of A New Statewide Groundwater Observation Network

- Set up 14 new or revived observation well sites: Capitalization using \$145K one-time funding; to collect continuous water-level measurements and quarterly groundwater-quality samples.
 - “...in areas of demonstrated need.” (KRS 151.625)
 - Wells serve as fixed monitoring sites representative of specific aquifers or aquifer types (e.g. karst, fractured sedimentary rock, etc.).
 - “...support research efforts that develop models for groundwater systems...”, and “...to determine and monitor trends...”.
- Also 4 karst spring monitoring sites: “Livestream” NEA-LexArts project contributing \$75K in private donations to equipment; continuous WQ and stage-discharge flow monitoring..

- The observation wells to be located in areas of state where groundwater withdrawals are great and/or are expected to increase.
 - Geographic distribution is a consideration,
 - Also areas having significant agricultural or energy resource-extraction activities.
 - Shallow, mostly unconfined aquifers responsive to precipitation recharge.
 - Plan on drilling approx. 7 new wells in areas of critical need.
 - Also, approx. 6 wells equipped with telemetry.
- Annual O&M costs (est. \$30K) to be covered by KGS for first 3 years:
 - Unanticipated cost increases, funding cuts, or resource re-allocation/research program decisions could potentially affect this.
- Long-term maintenance, expansion or enhancement of network and data-collection activities, will require additional outside funding/partnerships.

Proposed New KY Groundwater Observation Network



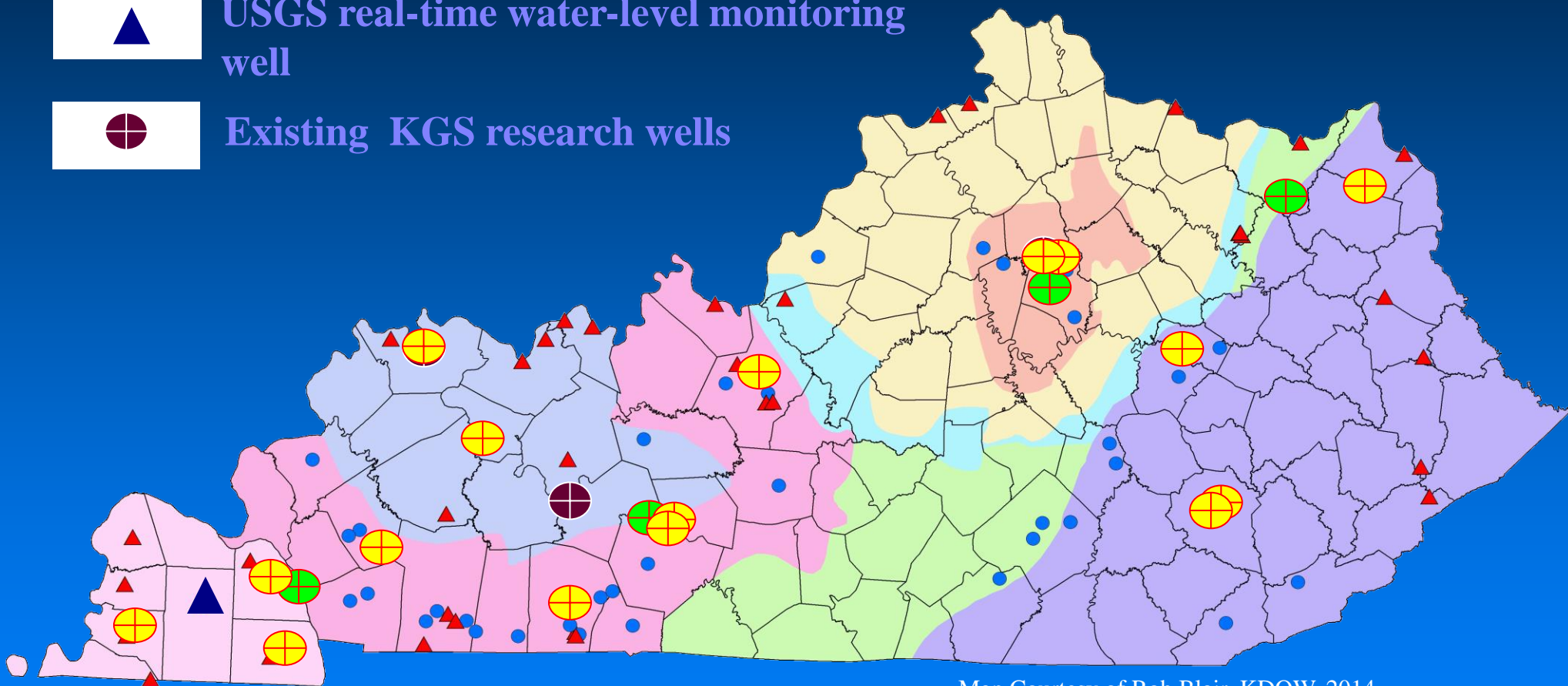
KDOW (ITAC GWQ network) sites



USGS real-time water-level monitoring well



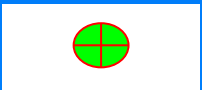
Existing KGS research wells



Map Courtesy of Rob Blair, KDOW, 2014



Proposed general location for new KGS-KGON observation well site



Proposed KGS "Livestream" spring monitoring site

Other Planned Activities to Support the Network Include:

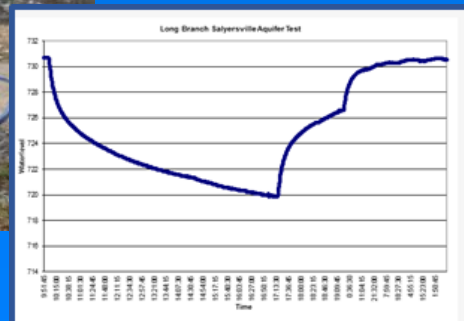
Additional Well Inventory and Logging Work



Periodic Water-Level Mapping in Selected Areas of Interest



Conduct Aquifer Tests to Better Assess Groundwater Availability



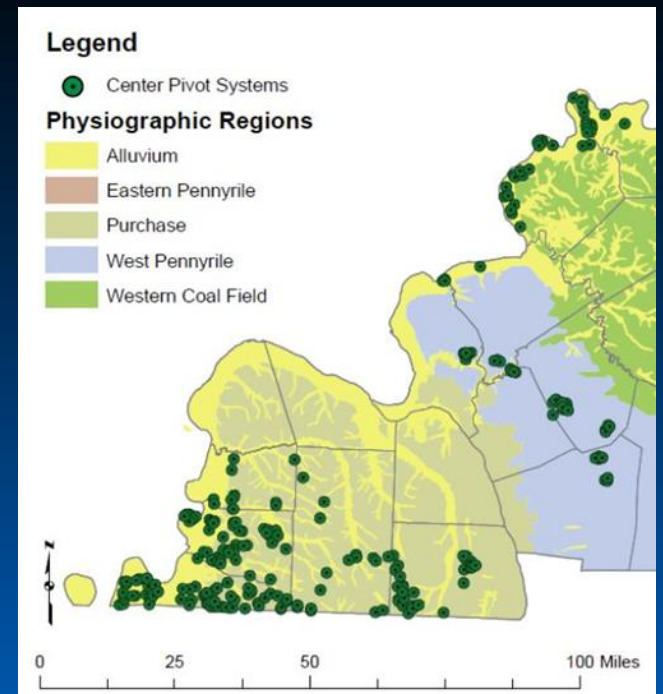
Create New Webpages Needed to Store and Display Water-Level Hydrograph Data



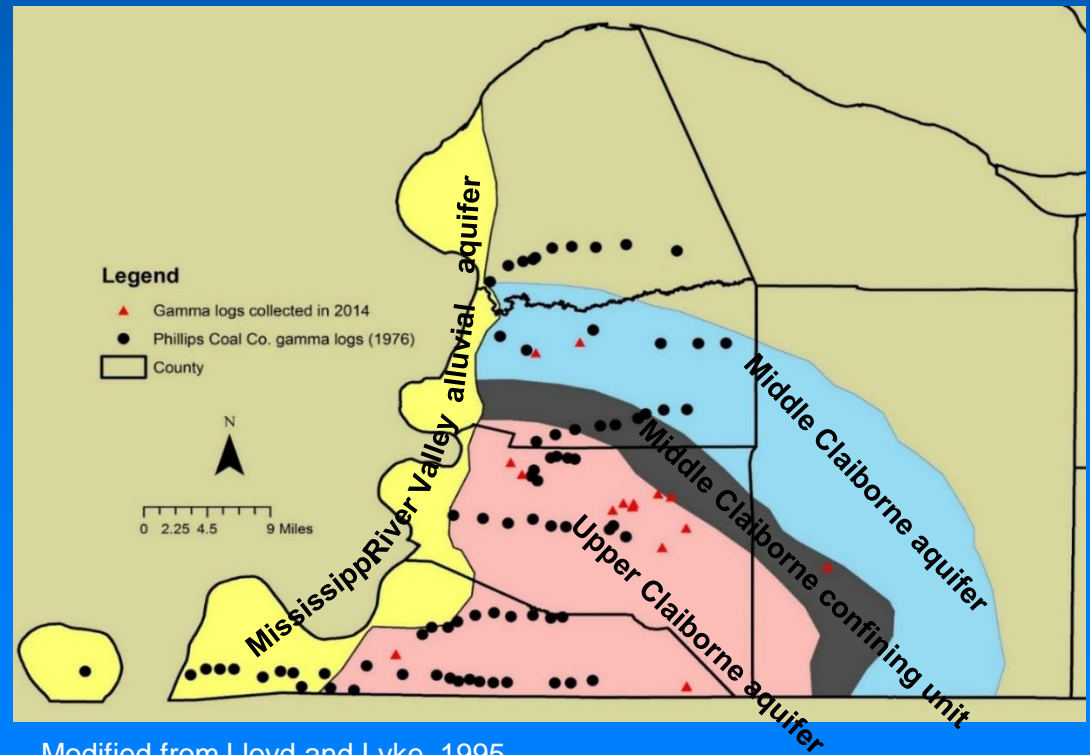
For Example KGS Is Presently Conducting a Well Inventory and Gamma-ray Logging of Selected Wells in the Jackson Purchase Area:



The Intent Here is to Better Understand Local Stratigraphic Variability in the Aquifers that May Effect GW Monitoring

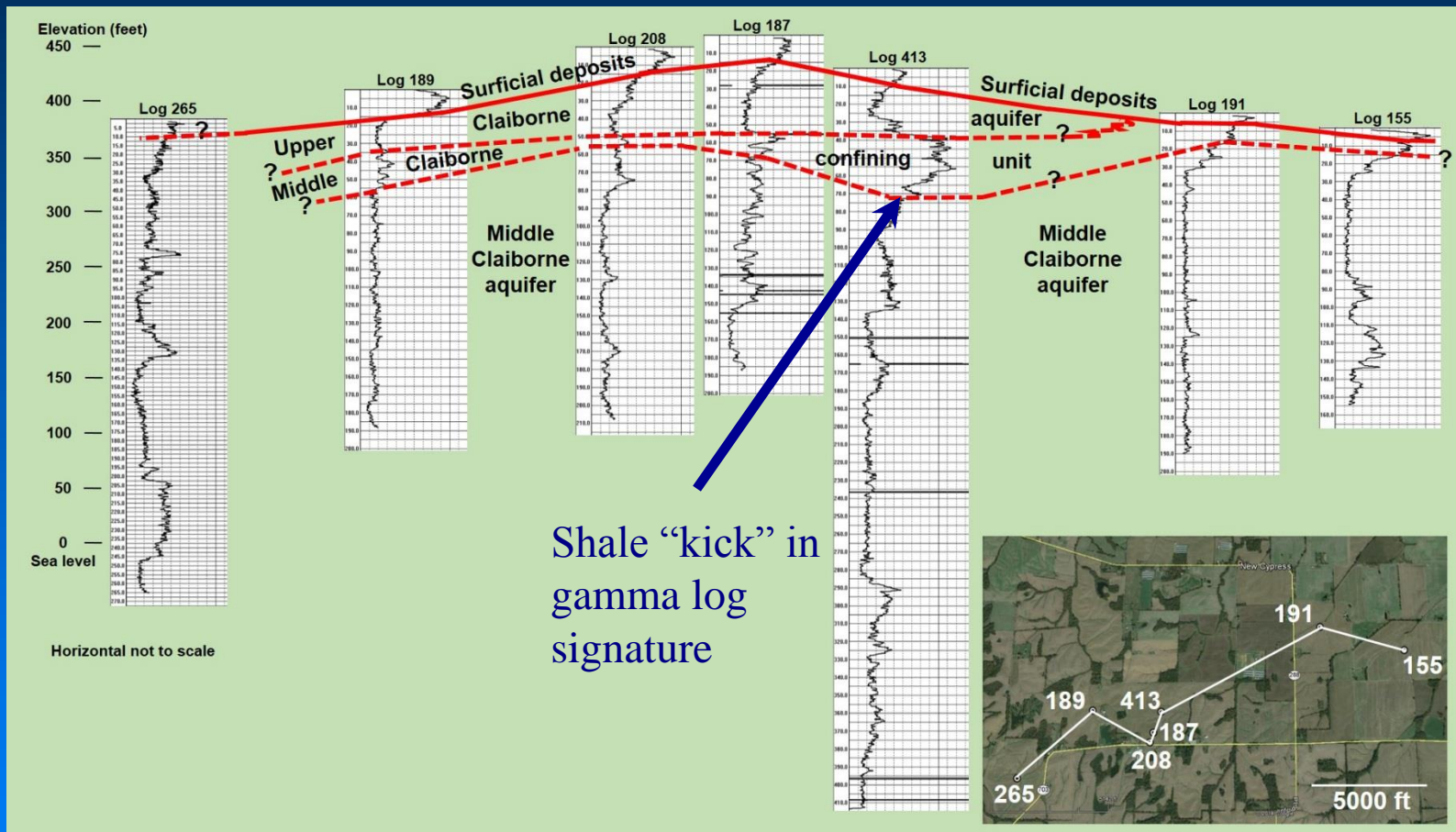


Courtesy of Jessica Moore, KDOW, 2014



Modified from Lloyd and Lyke, 1995

Questions about the Local Aquifer Boundaries and the Extent of the JPA Confining Units Have Important Implications for Observation Well Placement and Construction



Also for Interpretation of Groundwater Monitoring Data and Groundwater and Surface Water Resources Management in the Area.

KGS Proposed Network and Groundwater Investigation Plans Have Been Incorporated into the Draft KASMC 3-Year Work Plan

Kentucky Agriculture Science and Monitoring Committee (KASMC) – 3-year cooperative scope of work and work plan (2015-2017)



- Plan was reviewed during the KASMC Annual Executive Level Meeting held on December 9, 2014.
- Goal Is to Build Support for Groundwater Research and Data-Collection Efforts Needed to Support Agriculture.

Summary

KGS Water Resources Section is active on a variety of fronts to fulfill its legislative mandates to characterize the water resources of the Commonwealth, to maintain the State Groundwater Data Repository, and to establish a Statewide Groundwater Observation Network.

Although we are research unit within UK, we are also a public service agency, devoted to meeting the needs of state and federal agencies, and the general public for geologic and hydrologic data and information.

The WRS principally focuses on groundwater and hydrogeology research, but is also very involved in conducting applied research pertaining to water quality issues, sinkhole and karst hazards, and other water-related science and environmental issues.

In 2015-2016, the WRS will start up the new statewide Kentucky Groundwater Observation Network (KGON), consisting initially of fourteen long-term water-level monitoring wells and four karst springs.

The goal of the network is to provide groundwater data needed to better assess groundwater availability, recharge, aquifer characteristics, and interaction with surface streams for the benefit of all Kentuckians, including the agricultural community.

Questions and Discussion?

