

KOLAR

Kansas On-Line Automated Reporting

**Kansas Department of Health and Environment
Geology and Well Technology Section**

**Pamela Chaffee, Unit Chief
Water Well & Technical Support Unit**

Wednesday, September 7, 2016



<https://kolar.kgs.ku.edu>



KOLAR History

- Discussions began in August 2009 to allow water well contractors to use KOLAR for submitting WWC-5 Forms.
- On September 12, 2011, the first official WWC-5 was entered and fee submitted on KOLAR.
- First WWC-5P was entered on June 24, 2014
- Since that date, 83 Kansas water well contractors have registered with KOLAR. Of those registered, 62 have submitted at least some records and 21 are inactive.

KOLAR Fees WWC-5 Forms

- First record submitted would be \$7.00 (\$5.00 for record plus \$2.00 usage fee)
- Second and subsequence records would be \$6.50 (\$5.00 for record plus \$1.50 usage fee)

Note: This is for 1 group of records. When you start a new group, the fee starts over with \$7.00 for the first record.

Training Module

The following slides will show you how to register and what to expect when using KOLAR.

We will then take you “Live” on the KOLAR Website and fill out a form.

<http://www.kdheks.gov/waterwell/index.html>

The screenshot shows the website header with the Kansas Department of Health and Environment logo, the motto "AD ASTRA PER ASPERA", and the names of Governor Sam Brownback and Secretary Susan Mosier, MD. A navigation menu includes links for Home, Public Health, Environment, Health Care Finance, Laboratories, and News. Below the menu is a search bar and a "A to Z Topic Listing" link. The main content area features a "Water Well Program" section with contact information for Pam Chaffee, a "General Information" section, and a "Directions to KDHE and Visitor Parking" link.

Kansas
Department of Health and Environment

Sam Brownback, Governor
Susan Mosier, MD, Secretary

Home Public Health Environment Health Care Finance Laboratories News

BOW - Water Well Program

A to Z Topic Listing

Water Well Program

Water Home

- Blue-Green Algae (BGA) Blooms
- Geology & Well Technology
- Industrial Programs
- Livestock Management
- Municipal Programs
- Public Water Supply
- Technical Services
- Watershed Management
- Watershed Planning, Monitoring, and Assessment

Pam Chaffee, Professional Geologist
Chief, Water Well Unit
Geology & Well Technology, 1000 SW Jackson Street, Suite 420
Topeka, KS 66612-1367
Office: (785) 296-3565
Fax: (785) 559-4258
pchaffee@kdheks.gov

General Information

The Water Well Program at KDHE is administered by the Water Well Unit within the Geology & Well Technology Section.

The purpose of the Water Well Program is to provide for the exploration and protection of groundwater through the licensing and regulation of water well contractors in Kansas and to protect the health and general welfare of the citizens of Kansas. The program oversees the proper construction, reconstruction, treatment and plugging of water wells and to provide data on potential water supplies in Kansas. This is done by requiring well logs for all water well construction, reconstruction and plugging of wells within the state.

To become a Kansas Licensed Water Well Contractor requires submitting to KDHE a completed application, successful completion of a written exam and submitting the required fees to KDHE. After becoming a Licensed Water Well Contractor, the contractor is required to renew their license annually by submitting to KDHE a renewal application on a form provided by KDHE, filing all well records (WWC-5 form) for each well constructed, reconstructed or plugged during the previous year of licensure, satisfying the continuing education requirements and submitting the required fees.

[Directions to KDHE and Visitor Parking](#)



WWC-5/WWC-5P Forms

*** **Hard copies will no longer be furnished - use one of the reporting methods listed below** ***

- **KOLAR** - Kansas Online Automated Reporting System for WWC-5 Forms
 - [Announcement](#)
 - [Registration and instructions](#)
 - [How to correct a WWC-5 form when initially entered through KOLAR](#)
- Fillable WWC-5 Form (.pdf)
 - [WWC-5 Instructions](#)
 - [WWC-5 Form](#)
- Fillable WWC-5P Form (.pdf)
 - [WWC-5P Instructions](#)
 - [WWC-5P Form](#)

Note: If you do not have a computer, call 785-296-5524 or 785-296-3565 and ask that a blank copy be sent to you. You may reproduce the copy for your record submittals. You will need to make copies as follows: **1st** copy will be mailed to KDHE, Geology & Well Technology Section, 1000 SW Jackson St., Suite 420, Topeka, KS 66612-1367, **2nd** copy needs to be sent to landowner, and a **3rd** copy will be retained by you for your files.

Overview of KOLAR



KOLAR

Welcome to KOLAR (Kansas On Line Automated Reporting) system.

KOLAR was developed by the Kansas Geological Survey (KGS) and the Kansas Department of Health and Environment (KDHE) to enable water well contractors to submit water well records (WWC-5) forms and the associated water well record fees electronically.

Benefits of electronic submission include:

- 1) Easy to understand fill in forms resulting in time saving and efficient reporting.
- 2) You only need to provide a paper copy to:
 - a. the water well owner, and
 - b. retain one for your files
- 3) Reduce human error (as the program will not let you submit your WWC-5 form unless it complies with pre-programmed parameters established by KDHE).
- 4) No more check writing or the possibility of checks getting lost in the mail. Electronic payment is done using a credit card.
- 5) Automatically populates the Kansas water well database.

Registration & Instructions

The original instructions for registering to use KOLAR and how to use it are at: http://www.kdheks.gov/waterwell/download/KOLAR_Instructions_by_Kurt_Look_KGS_1-19-2012.pdf. These instructions were updated for training purposes in September 2016. A final updated version will be posted on the Water Well Program website at: <http://www.kdheks.gov/waterwell/index.html>.

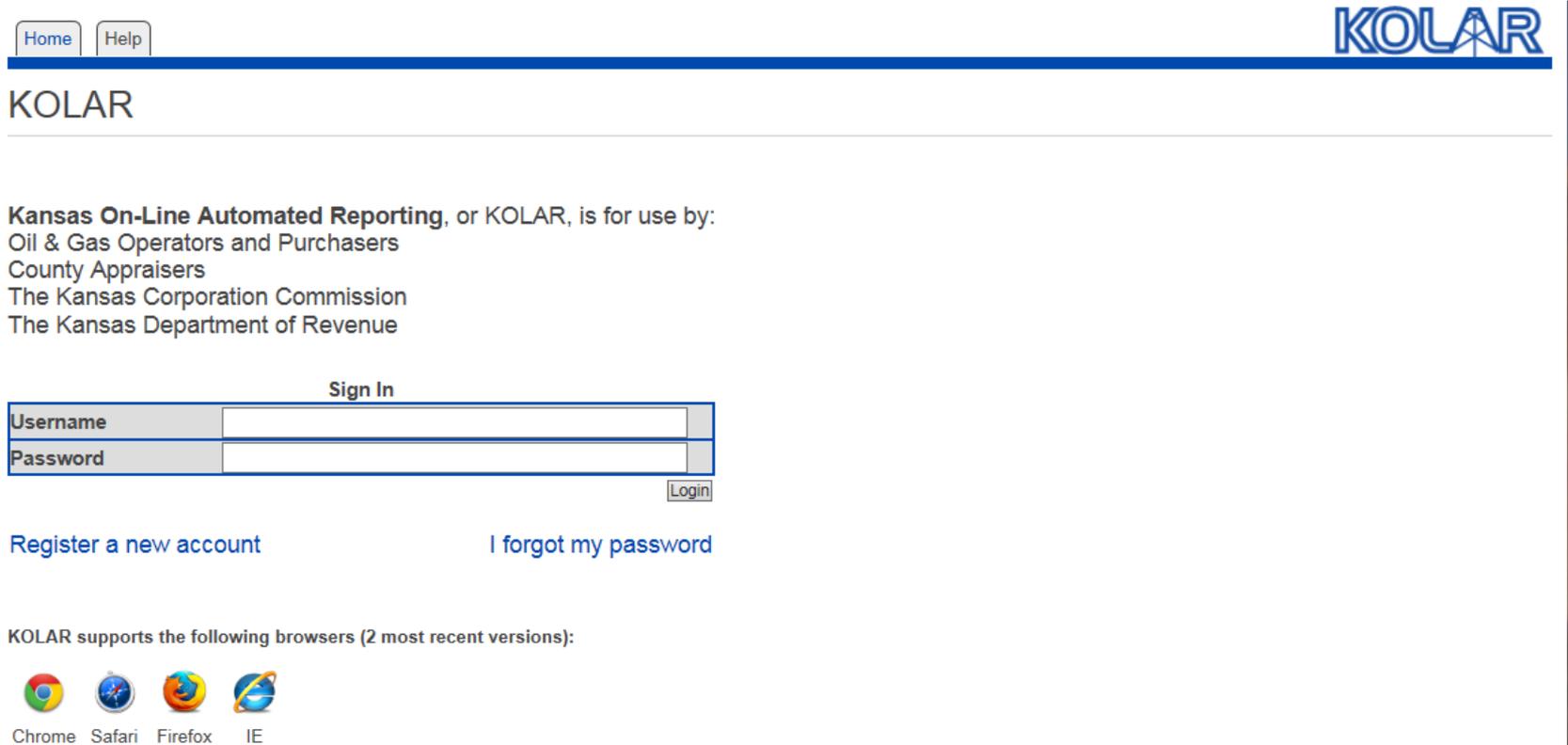
If you have questions, please contact Pamela Chaffee, KDHE, at 785-296-3565.

KOLAR has been tested and is in use by a group of Kansas licensed water well contractors who volunteered to help us fine tune this project. These contractors provide valuable comments and feedback on how the system works for them and KDHE would like to thank these contractors for their help and support.

REMINDER: You must still provide a paper copy of the water well record (WWC-5 and WWC-5P Forms) to the water well owner and retain a copy for your files.

Registration & Instructions

1. Bring up the KOLAR web site in your browser: <http://kolar.kgs.ku.edu>. It will look something like this:



The screenshot shows the KOLAR website interface. At the top right is the KOLAR logo. Below it are two buttons: "Home" and "Help". The main heading "KOLAR" is displayed. A list of users for whom KOLAR is intended is provided: Oil & Gas Operators and Purchasers, County Appraisers, The Kansas Corporation Commission, and The Kansas Department of Revenue. A "Sign In" section contains two input fields for "Username" and "Password", followed by a "Login" button. Below the sign-in section are two links: "Register a new account" and "I forgot my password". At the bottom, it states "KOLAR supports the following browsers (2 most recent versions):" and lists icons for Chrome, Safari, Firefox, and Internet Explorer (IE).

2. Click on “Register a new account.”

3. Enter the requested information and click on “Register” to get a confirmation page:

KOLAR

[Home](#) [Help](#)

New User Registration

User Information

First Name	<input type="text" value="Pamela"/>	*
Last Name	<input type="text" value="Chaffee"/>	*
Username for KOLAR		
<ul style="list-style-type: none">You may use letters, digits, and underscores.Do not use special characters such as @ and &.Usernames must be 8 to 30 characters in length.Usernames are case sensitive.		
	<input type="text" value="pam13KDHE"/>	*
Email	<input type="text" value="Pam.Chaffee@ks.gov"/>	*
Phone (999-999-9999)	<input type="text" value="785-296-3565"/>	*
Extension	<input type="text"/>	

Tell Us How You Plan to Use KOLAR

Water Well Contractors:

Do you want the ability to submit WWC5 forms to the Kansas Department of Health and Environment? If so, then you need to be added to the KOLAR group for your company, which will need to be a licensed water well contractor.

Oil & Gas Operators:

Do you want the ability to submit forms to the Kansas Corporation Commission (KCC)? Contact your company's Electronic Filing Administrator to add you to your company's group. If you are not sure if your company has an Electronic Filing Administrator or who the Electronic Filing Administrator is, contact a.banks@kcc.ks.gov.

Do you want the ability to report severance tax to the Kansas Department of Revenue? If so, then you need to be added to the KOLAR group for your company. If other people in your company use KOLAR, ask them who the group administrator is. That person can add you to the company group. If you are the first KOLAR user for your company, call Roberto Tetuan at the Department of Revenue, 785-296-7713 and he will get you set-up. Have your KDOR Taxpayer ID number handy when you call.

3a. You'll be asked to confirm the information in order to register.

Home

Help

KOLAR
TEST

Confirm New User

User Information

Username	pam13KDHE
Name	Pamela Chaffee
Email	Pam.Chaffee@ks.gov
Phone (999-999-9999)	785-296-3565
Extension	

Additional Information

Water Well Contractors:

Do you want the ability to submit WWC5 forms to the Kansas Department of Health and Environment? If so, then you need to be added to the KOLAR group for your company, which will need to be a licensed water well contractor.

Yes

Oil & Gas Operators:

Do you want the ability to submit forms to the Kansas Corporation Commission (KCC)? Contact your company's Electronic Filing Administrator to add you to your company's group. If you are not sure if your company has an Electronic Filing Administrator or who the Electronic Filing Administrator is, contact a.banks@kcc.ks.gov.

No

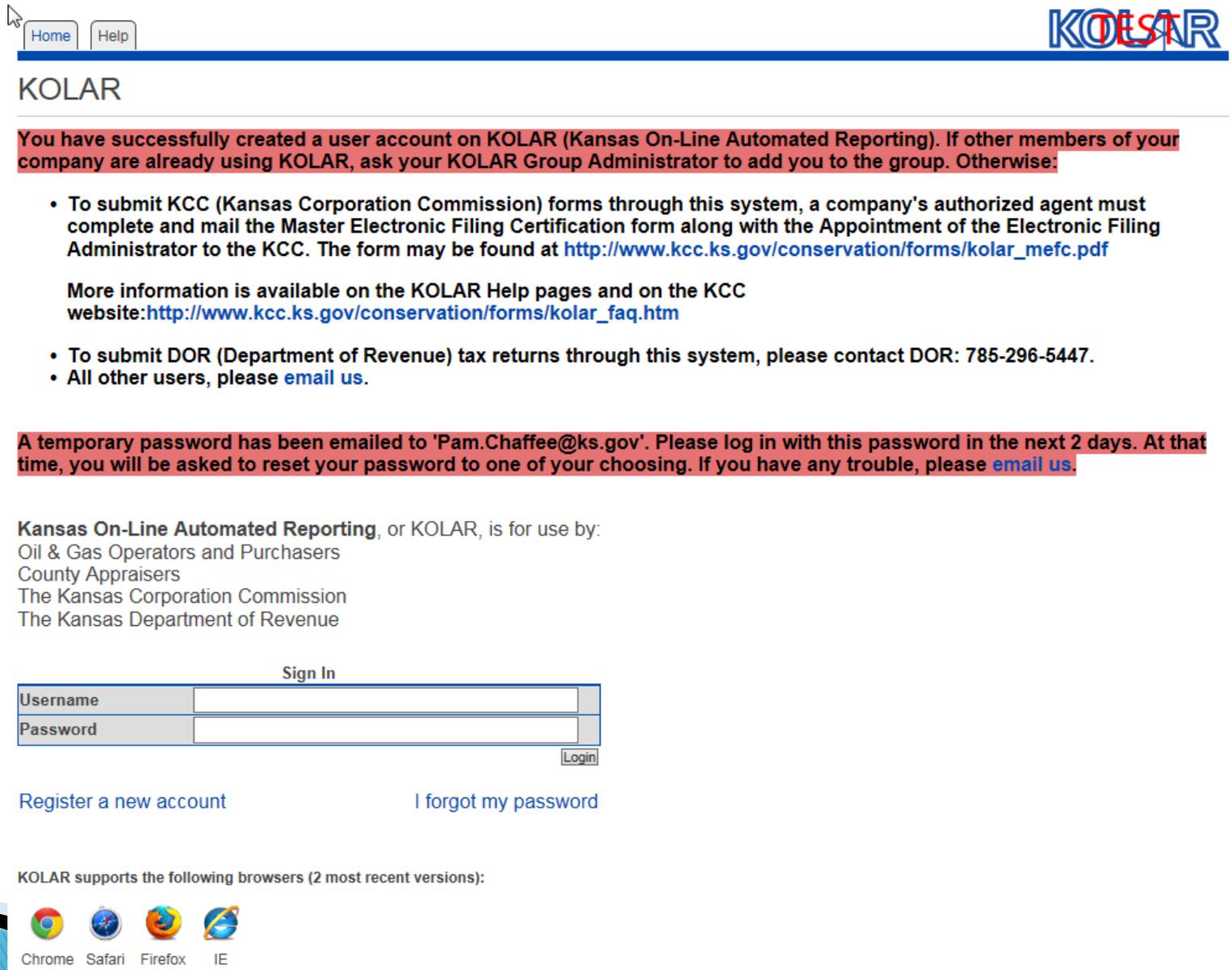
Do you want the ability to report severance tax to the Kansas Department of Revenue? If so, then you need to be added to the KOLAR group for your company. If other people in your company use KOLAR, ask them who the group administrator is. That person can add you to the company group. If you are the first KOLAR user for your company, call Roberto Tetuan at the Department of Revenue, 785-296-7713 and he will get you set-up. Have your KDOR Taxpayer ID number handy when you call.

No

Incorrect - Start Over

Correct - Register Now

4. You will get this page telling you that an email has been sent to you with a temporary password. It takes a minute or two, but you will get the email and password in your inbox with instructions:



The screenshot shows the KOLAR website interface. At the top right is the KOLAR logo. Below it are 'Home' and 'Help' buttons. The main heading is 'KOLAR'. A red banner contains the message: 'You have successfully created a user account on KOLAR (Kansas On-Line Automated Reporting). If other members of your company are already using KOLAR, ask your KOLAR Group Administrator to add you to the group. Otherwise:'. Below this are two bullet points: 'To submit KCC (Kansas Corporation Commission) forms through this system, a company's authorized agent must complete and mail the Master Electronic Filing Certification form along with the Appointment of the Electronic Filing Administrator to the KCC. The form may be found at http://www.kcc.ks.gov/conservation/forms/kolar_mefc.pdf' and 'More information is available on the KOLAR Help pages and on the KCC website: http://www.kcc.ks.gov/conservation/forms/kolar_faq.htm'. A second bullet point states: 'To submit DOR (Department of Revenue) tax returns through this system, please contact DOR: 785-296-5447. All other users, please [email us](#).' Another red banner follows: 'A temporary password has been emailed to 'Pam.Chaffee@ks.gov'. Please log in with this password in the next 2 days. At that time, you will be asked to reset your password to one of your choosing. If you have any trouble, please [email us](#).' Below this, it says 'Kansas On-Line Automated Reporting, or KOLAR, is for use by:' followed by a list: 'Oil & Gas Operators and Purchasers', 'County Appraisers', 'The Kansas Corporation Commission', and 'The Kansas Department of Revenue'. A 'Sign In' section contains a form with 'Username' and 'Password' fields and a 'Login' button. Below the form are links for 'Register a new account' and 'I forgot my password'. At the bottom, it states 'KOLAR supports the following browsers (2 most recent versions):' and shows icons for Chrome, Safari, Firefox, and IE.

Home Help

KOLAR

You have successfully created a user account on KOLAR (Kansas On-Line Automated Reporting). If other members of your company are already using KOLAR, ask your KOLAR Group Administrator to add you to the group. Otherwise:

- To submit KCC (Kansas Corporation Commission) forms through this system, a company's authorized agent must complete and mail the Master Electronic Filing Certification form along with the Appointment of the Electronic Filing Administrator to the KCC. The form may be found at http://www.kcc.ks.gov/conservation/forms/kolar_mefc.pdf
- More information is available on the KOLAR Help pages and on the KCC website: http://www.kcc.ks.gov/conservation/forms/kolar_faq.htm
- To submit DOR (Department of Revenue) tax returns through this system, please contact DOR: 785-296-5447.
- All other users, please [email us](#).

A temporary password has been emailed to 'Pam.Chaffee@ks.gov'. Please log in with this password in the next 2 days. At that time, you will be asked to reset your password to one of your choosing. If you have any trouble, please [email us](#).

Kansas On-Line Automated Reporting, or KOLAR, is for use by:
Oil & Gas Operators and Purchasers
County Appraisers
The Kansas Corporation Commission
The Kansas Department of Revenue

Sign In

Username	<input type="text"/>
Password	<input type="password"/>

Login

[Register a new account](#) [I forgot my password](#)

KOLAR supports the following browsers (2 most recent versions):

Chrome Safari Firefox IE



Fri 9/2/2016 1:11 PM

chasm@kgs.ku.edu

+KOLAR: Temporary Password and Login Instructions

To Pam Chaffee

 You forwarded this message on 9/2/2016 1:17 PM.

1. To submit forms to the Kansas Corporation Commission (KCC) through this system, a company's authorized agent must complete and mail the [Master Electronic Filing Certification Form](#) along with the "Appointment of the Electronic Filing Administrator" to the KCC. More information is available on the KOLAR [FAQ](#) page and on the KCC website.
2. To submit WWC5 forms to KDHE, contact Richard Harper at rharper@kdheks.gov or Deb Biester at dbiester@kdheks.gov. They will set up a group for your company and will put you into the group as a user.
3. To submit severance tax reports to KDOR, contact Roberto Tetuan at Roberto.Tetuan@kdor.ks.gov.
4. All other users, please email the [KOLAR Administrators](#).

Your temporary password is: **26062584**

Please log in with this password in the next 2 days. At that time, you will be asked to reset your password to one of your choosing. If you have any trouble, please email the [KOLAR Administrators](#).

It is highly recommended that you Cut and Paste the temporary password into the log-in screen. Follow these instructions to do so:

1. Highlight the password. MAKE SURE NO BLANK SPACES ARE HIGHLIGHTED BEFORE OR AFTER THE PASSWORD.
2. Press Control + C (Command + C for Macs) at the same time OR go to Edit --> Copy
3. Click in the password box on the website. Make sure the cursor appears in that box.
4. Press Control + V (Command + V for Macs) OR go to Edit --> Paste

This is [KOLAR](#) email request #102988601161.

Registration & Instructions

5. Connect to KOLAR again and login with your new username and temporary password:

TEST SERVER

[Home](#) [Help](#)

KOLAR

Reset Expired Password

Please choose a new password.

Enter Current Password

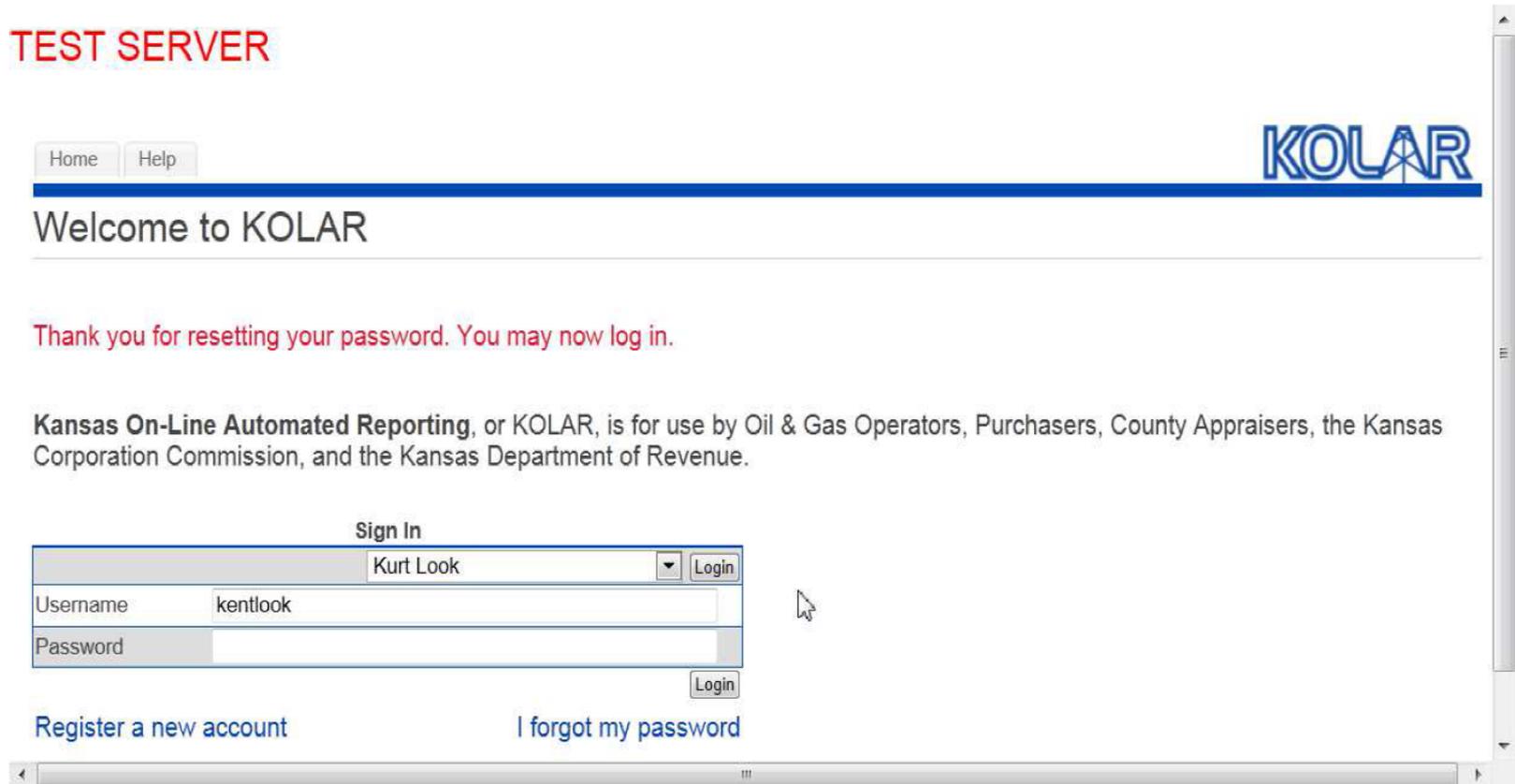
Enter New Password

Re-type Password

Registration & Instructions

6. Finally, you're ready to do a normal login. You'll never do the above steps again:

TEST SERVER



The screenshot shows the KOLAR web application interface. At the top right is the KOLAR logo. Below it are 'Home' and 'Help' buttons. A blue horizontal bar separates the header from the main content. The main content area displays a welcome message and a success notification in red text: 'Thank you for resetting your password. You may now log in.' Below this is a paragraph explaining that KOLAR is for use by Oil & Gas Operators, Purchasers, County Appraisers, the Kansas Corporation Commission, and the Kansas Department of Revenue. A 'Sign In' section contains a dropdown menu with 'Kurt Look' selected, a 'Login' button, a 'Username' field with 'kentlook', a 'Password' field, and another 'Login' button. At the bottom of the sign-in section are two links: 'Register a new account' and 'I forgot my password'. The browser's scrollbar is visible on the right side.

Home Help

KOLAR

Welcome to KOLAR

Thank you for resetting your password. You may now log in.

Kansas On-Line Automated Reporting, or KOLAR, is for use by Oil & Gas Operators, Purchasers, County Appraisers, the Kansas Corporation Commission, and the Kansas Department of Revenue.

Sign In

Kurt Look Login

Username kentlook

Password Login

[Register a new account](#) [I forgot my password](#)

Registration & Instructions

7. You are now logged in. You still can't do anything, but you are logged in. You have to be associated with a GROUP before you can do anything. A group is your company.



Registration & Instructions

8. At this point, call Pam Chaffee at 785.296.3565 or Deb Biester at 785.296.5524 at KDHE to finish the registration process. They will create your group, put your user in the group and give you the permissions you need to do your work.

Manage User Roles

User	Change Role of User
Eileen Jones Remove User	<input checked="" type="checkbox"/> Group Admin <input checked="" type="checkbox"/> KDHE Form Submit Change Role
Keith Hunsinger Remove User	<input checked="" type="checkbox"/> Group Admin <input checked="" type="checkbox"/> KDHE Form Submit Change Role
Melissa Moore Remove User	<input type="checkbox"/> Group Admin <input checked="" type="checkbox"/> KDHE Form Submit Change Role

Add User to Group

Username to add kentlook	ROLES <input checked="" type="checkbox"/> Group Admin <input checked="" type="checkbox"/> KDHE Form Submit
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[Add User](#)

Disable the Group by clicking on the following button.

[Disable](#)

9. The next time you log in, you'll see some major progress because you are finally associated with a known group in the system (upper right). And you have menu items (upper left).



Getting Started with Filling Out a WWC-5 Form on KOLAR

Using the "KDHE" Menu above, choose "WWC5." To return to this page, choose the "Home" tab above.

Location Information:

- You must enter a lat / long. Set your GPS to display Decimal Degrees. You must know your units datum: WGS 84, NAD 83 or NAD 27.
- Once you enter the lat / long, the other location information will be filled in automatically: County, T-R-S, quarter calls and elevation.
- There is a button at the top of the form labeled "View Location Info." This button will open a new page that shows an aerial photo of the section and other information relevant to that location.

Well IDs: For some well types, like monitoring wells, you must fill in a well ID. Once you fill it in on section 7 of the form (well use), it will be shown automatically in the upper right corner of the form.

Casing Record: Computers can't deal with fractions so you must enter the values in decimals. There is a button on the page labeled "Decimal Conversion Chart" that you can use to look up the decimal equivalent for the fractions you need to enter.

Lithologic Log: The lithologic log section of the form has a scroll bar because you can enter more rows than are initially visible. If you want to reorder the rows, put the cursor in the row you want to move and use the "Up" or "Down" buttons to move it. Don't worry about rows that you leave blank because those will be removed automatically. Sometimes this tool is a bit slow so be patient.

10. Selecting the KDHE Forms menu item, you can choose either WWC5 or WWC-5P to get you to the page that manages all of your WWC-5 or WWC-5P forms, or start a new form.

Select a queue to view

Table	Documents
WWC5s Unsubmitted	89
WWC5s Ready to Submit	4
WWC5s Submitted	0
WWC5s Approved	1
Total	94

WWC5s Unsubmitted

Show entries

Search:

Action	Doc ID	County	Section	Well Owner	Well ID	Last Saved
Edit Delete PDF Clone	1315735	Douglas	35-13S-18E			08/30/2016
Edit Delete PDF Clone	1305417	Dickinson	34-13S-02E	Brown Memorial Foundation		05/13/2016
Edit Delete PDF Clone	1305415	Dickinson	34-13S-02E			04/28/2016

11. You are about to complete the WWC5 form on-line. Since much is dependent on the location of the well, you must provide the latitude & longitude coordinates for the well prior to completing the form. You'll get these from your GPS unit, on-line mapping tool, or a surveyor's report.

[Home](#)[KDHE Forms](#)[Settings](#)[Help](#)

Pamela Chaffee

[Logout](#)Test WW Driller 

Create Doc

[Back to WWC5](#)

Latitude, Longitude and Datum are required when creating a WWC5. Some location information will be filled in automatically once these are entered. You can change these later if you need to.

Latitude: N (decimal degrees) e.g. 38.881796Longitude: W (decimal degrees) e.g. 95.383889Datum: WGS84 NAD83 NAD27

12. Click Submit and you get the partially filled out WWC5:

County, Quarter Fractions, Section, Township, Range, and Elevation fill-in automatically from Latitude, Longitude, and Horizontal Datum you enter.

Home KDHE Forms Settings Help

KOLAR Pamela Chaffee Logout Test WW Driller

Required Questionable Invalid Associated fields

WATER WELL RECORD Form WWC-5

Division of Water Resources App. # Well ID

Original record Correction Change in well use

1 LOCATION OF WATER WELL: <input type="text" value="Douglas"/>	Fraction (smallest-to-largest) NW <input type="button" value="¼"/> SE <input type="button" value="¼"/> NE <input type="button" value="¼"/> NW <input type="button" value="¼"/>	Section <input type="text" value="35"/>	Township <input type="text" value="13"/> S	Range <input type="text" value="18"/> <input checked="" type="radio"/> E <input type="radio"/> W
--	---	--	---	---

2 WATER WELL OWNER: First: <input type="text"/> Last: <input type="text"/> Business: <input type="text"/> Address line 1: <input type="text"/> Address line 2: <input type="text"/> City: <input type="text"/> State: <input type="text"/> ZIP: <input type="text"/>	3 WATER WELL ADDRESS: Street/Rural Address of Well Location; if unknown, distance & direction from nearest town or intersection: If at owner's address, check here <input type="checkbox"/> <input type="text"/>
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4 DEPTH OF COMPLETED WELL <input type="text"/> ft. Depth(s) groundwater encountered: 1) <input type="text"/> ft. 2) <input type="text"/> ft. 3) <input type="text"/> ft. or 4) <input type="checkbox"/> Dry well WELL'S STATIC WATER LEVEL <input type="text"/> ft. <input type="radio"/> below land surface measured (mm/dd/yyyy) <input type="text"/> <input type="radio"/> above land surface measured (mm/dd/yyyy) <input type="text"/> <u>Pump test data:</u> Well water was <input type="text"/> ft. after <input type="text"/> hrs. pumping <input type="text"/> gpm. Well water was <input type="text"/> ft. after <input type="text"/> hrs. pumping <input type="text"/> gpm. Estimated yield: <input type="text"/> gpm Bore hole diameter: <input type="text"/> in. to <input type="text"/> ft. and <input type="text"/> in. to <input type="text"/> ft.	5 Latitude: <input type="text" value="38.881796"/> (decimal degrees) Longitude: <input type="text" value="95.383889"/> (decimal degrees) Datum: <input checked="" type="radio"/> WGS84 <input type="radio"/> NAD83 <input type="radio"/> NAD27 Source for latitude/longitude: <input type="radio"/> GPS (unit make/model) <input type="text"/> WAAS enabled? <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Land survey <input type="radio"/> Topographic map <input type="radio"/> Online mapper <input type="text"/>
---	---

6 Elevation: <input type="text" value="1043"/> ft. <input checked="" type="radio"/> Ground Level <input type="radio"/> TOC Source: <input type="radio"/> Land Survey <input type="radio"/> GPS <input type="radio"/> TopoMap <input checked="" type="radio"/> Other <input type="text" value="KOLAR"/>

7 WELL WATER TO BE USED AS:

1. Domestic: Household Lawn/garden Livestock Irrigation Feedlot Industrial
2. Public water supply Well ID
3. Dewatering How many wells?
4. Aquifer recharge Well ID
5. Monitoring: Well ID
6. Env. remediation Well ID
7. Oil field water supply Lease
8. Test hole Well ID
9. Geothermal How many bores?
10. Cased Uncased Geotechnical
11. Closed loop Horizontal Vertical
12. Open loop Surface discharge Inj. of water
13. Other (specify)

Was a chemical/bacteriological sample submitted to KDHE? Yes No

If yes, date sample was submitted (mm/dd/yyyy) Water well disinfected? Yes No

8 TYPE OF CASING USED: Steel PVC Other

CASING JOINTS: Glued Clamped Welded Threaded

Casing diameter in. to ft., Diameter in. to ft., Diameter in. to ft.

Casing height above land surface in. Weight lbs./ft. Wall thickness or gauge No.

TYPE OF SCREEN OR PERFORATION MATERIAL:

- Steel Stainless Steel Fiberglass PVC Other (specify)
- Brass Galvanized steel Concrete tile None

SCREEN OR PERFORATION OPENINGS ARE:

- Continuous slot Mill slot Gauze wrapped Torch cut Drilled holes Other (specify)
- Louvered shutter Key punched Wire wrapped Saw cut None

SCREEN-PERFORATED INTERVALS: From ft. to ft. From ft. to ft. From ft. to ft.

SCREEN GRAVEL PACK INTERVALS: From ft. to ft. From ft. to ft. From ft. to ft.

9 CROUT MATERIAL:

9 GROUT MATERIAL: Neat cement Cement Bentonite Other

Grout intervals: From ft. to ft. From ft. to ft. From ft. to ft.

Nearest source of possible contamination:

- Septic tank Lateral lines Pit privy Livestock pens Insecticide storage
 Sewer lines Cess pool Sewage lagoon Fuel storage Abandoned water well
 Watertight sewer lines Seepage pit Feedyard Fertilizer storage Oil/gas well
 Other (please specify)

Direction from well? Distance from well? ft.

10 LITHOLOGIC LOG / PLUGGING MATERIALS:

From	To	Lithologic Log
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>

Lithologic Log Notes:

11 CONTRACTOR'S OR LANDOWNER'S CERTIFICATION: This water well was constructed reconstructed plugged

under my jurisdiction and was completed on (mo/day/year) and this record is true to the best of my knowledge and belief. Kansas Water Well Contractor's License No. 111 . This Water Well Record was completed on (mo/day/year) under the business name of by (signature)

Send one copy to WATER WELL OWNER and retain one for your records. Fee of \$5.00 for each constructed well.
KS Department of Health and Environment, Bureau of Water, Geology Section
1000 SW Jackson St., Suite 420, Topeka, Kansas 66612-1367. Telephone 785-296-3565
Visit us at <http://www.kdheks.gov/waterwell/index.html> Telephone 785-296-5524.

KSA82a-1212

Save and Exit

13. When you click “Save and Exit,” you are given the ability to do things to the WWC5 you just created along with a list of any problems detected in the form. You cannot submit to KDHE until the required items are completed, then “Cannot Submit” becomes “Ready to Submit.”

Home
KDHE Forms
Settings
Help



KOLAR
Pamela Chaffee Logout Test WW Driller ▾

[Back to WWC5](#)

Document 1315919

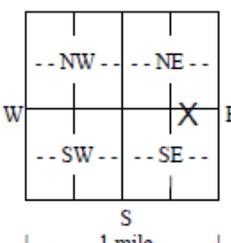
Actions

View PDF
Delete
Edit
Cannot Submit

Problems Preventing Submission

Form Field	Error Message
Bore Hole Diameter (1st)	Bore Hole Diameter (1st) is required.
Bore Hole Diameter To (1st)	Bore Hole Diameter To (1st) is required.
Casing Diameter (1st)	Casing Diameter (1st) is required.
Casing Height Above Land Surface	Casing Height Above Land Surface is required.
Casing Joints - Clamped	At least one Casing Joints option must be checked.
Casing Joints - Glued	At least one Casing Joints option must be checked.
Casing Joints - Threaded	At least one Casing Joints option must be checked.
Casing Joints - Welded	At least one Casing Joints option must be checked.
Casing To (1st)	Casing To (1st) is required.
Casing Wall Thickness Or Gauge Number	Casing Wall Thickness Or Gauge Number is required.
Contractor's or Landowner's Certification: Well Completion Date	Contractor's or Landowner's Certification: Well Completion Date is required. The format is mm/dd/yyyy.
Was a Chemical / Bacterial Sample Submitted to KDHE?	Was a Chemical / Bacterial Sample Submitted to KDHE? is required.
Depth of Completed Well	Depth of Completed Well is required.
Depth Groundwater was Encountered 1	Depth Groundwater was Encountered 1 is required.
Grout - Cement	At least one Grout Material option must be checked.
Grout - Bentonite	At least one Grout Material option must be checked.
Grout Interval From	Grout Interval From is required.

14. "View PDF" shows you the pdf version of the WWC5 as it was when you exited. "DRAFT" watermark stays on the form until it is submitted to KDHE. If you go back and click "Edit" it takes you to the WWC5 so you can complete it and/or correct problems that prevent it from being submitted.

WATER WELL RECORD Form WWC-5		Division of Water Resources App. No.	Well ID
<input type="checkbox"/> Original Record <input type="checkbox"/> Correction <input type="checkbox"/> Change in Well Use			
1 LOCATION OF WATER WELL: County: Douglas		Fraction NE ¼ NW ¼ NE ¼ SE ¼	Section Number 2
		Township Number T 13 S	Range Number R 19 <input checked="" type="checkbox"/> E <input type="checkbox"/> W
2 WELL OWNER: Last Name: _____ First: _____ Business: _____ Address: _____ Address: _____ City: _____ State: _____ ZIP: _____		Street or Rural Address where well is located (if unknown, distance and direction from nearest town or intersection): If at owner's address, check here: <input type="checkbox"/>	
3 LOCATE WELL WITH "X" IN SECTION BOX: N 	4 DEPTH OF COMPLETED WELL: 40 ft. Depth(s) Groundwater Encountered: 1) 25 ft. 2) _____ ft. 3) _____ ft., or 4) <input type="checkbox"/> Dry Well WELL'S STATIC WATER LEVEL: _____ ft. <input type="checkbox"/> below land surface, measured on (mo-day-yr) _____ <input type="checkbox"/> above land surface, measured on (mo-day-yr) _____ Pump test data: Well was _____ ft. after _____ hours pumping _____ gpm Well water was _____ ft. after _____ hours pumping _____ gpm Estimated Yield: _____ gpm Bore Hole Diameter: _____ in. to _____ ft. and _____ in. to _____ ft.	5 Latitude: 38.949007 (decimal degrees) Longitude: 95.262841 (decimal degrees) Datum: <input checked="" type="checkbox"/> WGS 84 <input type="checkbox"/> NAD 83 <input type="checkbox"/> NAD 27 Source for Latitude/Longitude: <input type="checkbox"/> GPS (unit make/model: _____) (WAAS enabled? <input type="checkbox"/> Yes <input type="checkbox"/> No) <input type="checkbox"/> Land Survey <input type="checkbox"/> Topographic Map <input checked="" type="checkbox"/> Online Mapper: _____	
7 WELL WATER TO BE USED AS: 1. Domestic: <input type="checkbox"/> Household <input type="checkbox"/> Lawn & Garden <input type="checkbox"/> Livestock 2. <input type="checkbox"/> Irrigation 3. <input type="checkbox"/> Feedlot 4. <input type="checkbox"/> Industrial 5. <input type="checkbox"/> Public Water Supply: well ID _____ 6. <input type="checkbox"/> Dewatering: how many wells? _____ 7. <input checked="" type="checkbox"/> Aquifer Recharge: well ID _____ 8. <input type="checkbox"/> Monitoring: well ID _____ 9. Environmental Remediation: well ID _____ <input type="checkbox"/> Air Sparge <input type="checkbox"/> Soil Vapor Extraction <input type="checkbox"/> Recovery <input type="checkbox"/> Injection 10. <input type="checkbox"/> Oil Field Water Supply: lease _____ 11. Test Hole: well ID _____ <input type="checkbox"/> Cased <input type="checkbox"/> Uncased <input type="checkbox"/> Geotechnical 12. Geothermal: how many bores? _____ a) Closed Loop <input type="checkbox"/> Horizontal <input type="checkbox"/> Vertical b) Open Loop <input type="checkbox"/> Surface Discharge <input type="checkbox"/> Inj. of Water 13. <input type="checkbox"/> Other (specify): _____		6 Elevation: 943 ft. <input checked="" type="checkbox"/> Ground Level <input type="checkbox"/> TOC Source: <input type="checkbox"/> Land Survey <input type="checkbox"/> GPS <input type="checkbox"/> Topographic Map <input checked="" type="checkbox"/> Other KOLAR	
Was a chemical/bacteriological sample submitted to KDHE? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, date sample was submitted: _____ Water well disinfected? <input type="checkbox"/> Yes <input type="checkbox"/> No			
8 TYPE OF CASING USED: <input type="checkbox"/> Steel <input type="checkbox"/> PVC <input type="checkbox"/> Other _____ CASING JOINTS: <input type="checkbox"/> Glued <input type="checkbox"/> Clamped <input type="checkbox"/> Welded <input type="checkbox"/> Threaded			

If you click “View Location Info” you can confirm the well location and see a list of nearby wells from the KGS Water Well Database.

[Home](#)
[KDHE Forms](#)
[Settings](#)
[Help](#)



 Pamela Chaffee Logout [Test WW Driller](#)

KOLAR
View Location Info Save and Exit

■ Required
 ■ Questionable
 ■ Invalid
 ■ Associated fields

WATER WELL RECORD Form WWC-5 Division of Water Resources App. # Well ID

Original record
 Correction
 Change in well use

1 LOCATION OF WATER WELL: <input type="text" value="Douglas"/>	Fraction (smallest-to-largest) <input type="text" value="NE"/> ¼ <input type="text" value="NW"/> ¼ <input type="text" value="NE"/> ¼ <input type="text" value="SE"/> ¼	Section <input type="text" value="2"/>	Township <input type="text" value="13"/> S	Range <input type="text" value="19"/> <input checked="" type="radio"/> E <input type="radio"/> W
--	---	---	--	---

2 WATER WELL OWNER: First: <input type="text"/> Last: <input type="text"/> Business: <input type="text" value="Kansas Geological Surve"/> Address line 1: <input type="text" value="1930 Constant Ave."/> Address line 2: <input type="text"/> City: <input type="text" value="Lawrence"/> State: <input type="text" value="KS"/> ZIP: <input type="text" value="66047"/>	3 WATER WELL ADDRESS: Street/Rural Address of Well Location; if unknown, distance & direction from nearest town or intersection: If at owner's address, check here <input checked="" type="checkbox"/> <div style="border: 1px solid gray; padding: 5px; min-height: 80px;"> 150 feet west of the NW corner of Parker Hall at the KGS, across Constant Ave, near easternmost tree. </div>
--	--

4 DEPTH OF COMPLETED WELL <input type="text" value="320"/> ft. Depth(s) groundwater encountered: 1) <input type="text" value="250"/> ft. 2) <input type="text"/> ft. 3) <input type="text"/> ft. or 4) <input type="checkbox"/> Dry well WELL'S STATIC WATER LEVEL <input type="text" value="204"/> ft. <input checked="" type="radio"/> below land surface measured (mm/dd/yyyy) <input type="text" value="07/31/201"/> <input type="radio"/> above land surface measured (mm/dd/yyyy) <input type="text"/> <u>Pump test data:</u> Well water was <input type="text"/> ft. after <input type="text"/> hrs. pumping <input type="text"/> gpm. Well water was <input type="text"/> ft. after <input type="text"/> hrs. pumping <input type="text"/> gpm. Estimated yield: <input type="text" value="7"/> gpm Bore hole diameter: <input type="text" value="9"/> in. to <input type="text" value="320"/> ft. and <input type="text"/> in. to <input type="text"/> ft.	5 Latitude: <input type="text" value="38.949007"/> (decimal degrees) Longitude: <input type="text" value="95.262841"/> (decimal degrees) Datum: <input checked="" type="radio"/> WGS84 <input type="radio"/> NAD83 <input type="radio"/> NAD27 <u>Source for latitude/longitude:</u> <input type="radio"/> GPS (unit make/model) <input type="text"/> WAAS enabled? <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Land survey <input type="radio"/> Topographic map <input checked="" type="radio"/> Online mapper <input type="text" value="Google Earth Pr"/>
6 Elevation: <input type="text" value="943"/> ft. <input checked="" type="radio"/> Ground Level <input type="radio"/> TOC <u>Source:</u> <input type="radio"/> Land Survey <input type="radio"/> GPS <input type="radio"/> TopoMap <input checked="" type="radio"/> Other <input type="text" value="KOLAR"/>	

Spot Information	
Latitude	38.949007
Longitude	-95.262841
Section	Sec-2 Twp-13 S Rng-19 E
Quarter Calls	NE NW NE SE
County	Douglas
Elevation	943 ft

Water Well Information

WWC5 Records: Five Closest Wells & All Public Water Supplies Within a Mile

Dist *	Dist **	Dist ***	Type	Status	Depth	Water Lvl	Owner	WWC5
245 ft	310ft	245ft	Monitoring well/observation/piezometer	CONSTRUCTED	293 ft	86.75 ft	Kansas Geological Survey	PDF
732 ft	733ft	731ft	Test hole/well	RECONSTRUCTED	254 ft		Kansas Geological Survey	scan
732 ft	733ft	731ft	Test hole/well	CONSTRUCTED	260 ft		Kansas University Farm	PDF
732 ft	733ft	731ft	Test hole/well	CONSTRUCTED	250 ft		Kansas University Farm	PDF
1705 ft		1705ft	Test Hole, Uncased	CONSTRUCTED	300 ft		Kansas University Farm	PDF

* This distance is calculated using geographic tools and a PLSS data layer.

** This distance is calculated using the pythagorean theorem and assuming that the section is exactly 5280 feet square. Also, if the water well is within a mile of the well spot, but is in a neighboring section, then this distance is not calculated.

*** This distance is calculated using UTM coordinates.

2014 2012 2010 2006 2002 Topo



15. Once the form is completed and identified problems are corrected, click "Save and Exit."

KOLAR

Required Questionable Invalid Associated fields

WATER WELL RECORD Form WWC-5

Division of Water Resources App. # Well ID

Original record Correction Change in well use

1 LOCATION OF WATER WELL: <input type="text" value="Douglas"/>	Fraction (smallest-to-largest) NE <input type="text" value="¼"/> NW <input type="text" value="¼"/> NE <input type="text" value="¼"/> SE <input type="text" value="¼"/>	Section <input type="text" value="2"/>	Township <input type="text" value="13"/> S	Range <input type="text" value="19"/> <input checked="" type="radio"/> E <input type="radio"/> W
--	---	---	---	---

2 WATER WELL OWNER:
First:
Last:
Business:
Address line 1:
Address line 2:
City:
State:
ZIP:

3 WATER WELL ADDRESS:
Street/Rural Address of Well Location; if unknown, distance & direction from nearest town or intersection: If at owner's address, check here

4 DEPTH OF COMPLETED WELL ft.
Depth(s) groundwater encountered:
1) ft. 2) ft. 3) ft. or 4) Dry well
WELL'S STATIC WATER LEVEL ft.
 below land surface measured (mm/dd/yyyy)
 above land surface measured (mm/dd/yyyy)
Pump test data:
Well water was ft. after hrs. pumping gpm.
Well water was ft. after hrs. pumping gpm.
Estimated yield: gpm
Bore hole diameter: in. to ft. and in. to ft.

5 Latitude: (decimal degrees)
Longitude: (decimal degrees)
Datum: WGS84 NAD83 NAD27
Source for latitude/longitude:
 GPS (unit make/model)
WAAS enabled? Yes No
 Land survey Topographic map
 Online mapper

6 Elevation: ft. Ground Level TOC
Source: Land Survey GPS TopoMap
 Other

7 WELL WATER TO BE USED AS:

1. Domestic: Household Lawn/garden Livestock
2. Irrigation
3. Feedlot
4. Industrial
5. Public water supply Well ID
6. Dewatering How many wells?
7. Aquifer recharge Well ID
8. Monitoring: Well ID
9. Env. remediation Well ID
- Air Sparge Soil vapor extraction
- Recovery Injection
10. Oil field water supply Lease
11. Test hole Well ID
- Cased Uncased Geotechnical
12. Geothermal How many bores?
- a) Closed loop Horizontal Vertical
- a) Open loop Surface discharge Inj. of water
13. Other (specify)

Was a chemical/bacteriological sample submitted to KDHE? Yes No

If yes, date sample was submitted (mm/dd/yyyy) Water well disinfected? Yes No

8 TYPE OF CASING USED: Steel PVC Other

CASING JOINTS: Glued Clamped Welded Threaded

Casing diameter 5 in. to 300 ft., Diameter in. to ft., Diameter in. to ft.

Casing height above land surface 24 in. Weight lbs./ft. Wall thickness or gauge No. SDR 26

TYPE OF SCREEN OR PERFORATION MATERIAL:

- Steel Stainless Steel Fiberglass PVC Other (specify)
- Brass Galvanized steel Concrete tile None

SCREEN OR PERFORATION OPENINGS ARE:

- Continuous slot Mill slot Gauze wrapped Torch cut Drilled holes Other (specify)
- Louvered shutter Key punched Wire wrapped Saw cut None

SCREEN-PERFORATED INTERVALS: From 300 ft. to 320 ft. From ft. to ft. From ft. to ft.

GRAVEL PACK INTERVALS: From 75 ft. to 184 ft. From 204 ft. to 320 ft. From ft. to ft.

9 GROUT MATERIAL: Neat cement Cement Bentonite Other

Grout intervals: From 3 ft. to 75 ft. From 184 ft. to 204 ft. From ft. to ft.

Nearest source of possible contamination:

- Septic tank Lateral lines Pit privy Livestock pens Insecticide storage
- Sewer lines Cess pool Sewage lagoon Fuel storage Abandoned water well
- Watertight sewer lines Seepage pit Feedyard Fertilizer storage Oil/gas well
- Other (please specify)

Direction from well? East Distance from well? 50 ft.

“Save and Exit” buttons are available at the top and bottom of the WWC5 form.

10 LITHOLOGIC LOG / PLUGGING MATERIALS:

From	To	Lithologic Log
<input type="text" value="0"/>	<input type="text" value="1"/>	<input type="text" value="topsoil"/>
<input type="text" value="1"/>	<input type="text" value="44"/>	<input type="text" value="Shale"/>
<input type="text" value="44"/>	<input type="text" value="75"/>	<input type="text" value="Limestone"/>
<input type="text" value="75"/>	<input type="text" value="78"/>	<input type="text" value="Shale"/>
<input type="text" value="78"/>	<input type="text" value="100"/>	<input type="text" value="Limestone"/>
<input type="text" value="100"/>	<input type="text" value="157"/>	<input type="text" value="Shale"/>
<input type="text" value="157"/>	<input type="text" value="162"/>	<input type="text" value="Limestone"/>
<input type="text" value="162"/>	<input type="text" value="250"/>	<input type="text" value="Shale"/>
<input type="text" value="250"/>	<input type="text" value="262"/>	<input type="text" value="Limestone"/>
<input type="text" value="262"/>	<input type="text" value="320"/>	<input type="text" value="Shale"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>

Lithologic Log Notes:

11 CONTRACTOR'S OR LANDOWNER'S CERTIFICATION: This water well was constructed reconstructed plugged under my jurisdiction and was completed on (mo/day/year) and this record is true to the best of my knowledge and belief. Kansas Water Well Contractor's License No. . This Water Well Record was completed on (mo/day/year) under the business name of by (signature)

Send one copy to WATER WELL OWNER and retain one for your records. Fee of \$5.00 for each constructed well.
 KS Department of Health and Environment, Bureau of Water, Geology Section
 1000 SW Jackson St., Suite 420, Topeka, Kansas 66612-1367. Telephone 785-296-3565
 Visit us at <http://www.kdheks.gov/waterwell/index.html> Telephone 785-296-5524.

KSA82a-1212

Save and Exit

16. You are returned to a page where all of your forms are listed. You have the option to review old forms or submit recently completed forms to KDHE. If you click on “WWC5s Ready to Submit”, you can click the “Pay and Submit” to pay the WWC5 fee using KanPay and submit the form to KDHE. You can also batch up several forms and submit them all at once.

[Start a New WWC5 Form](#)

Select a queue to view

Table	Documents
WWC5s Unsubmitted	90
WWC5s Ready to Submit	5
WWC5s Submitted	0
WWC5s Approved	0
Total	95

WWC5s Ready to Submit

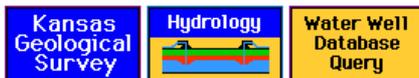
Show entries

Search:

Action	Doc ID	County	Section	Well Owner
Pay and Submit Move to the Unsubmitted queue	1165114	Douglas	35-13S-18E	sdfdfs
Pay and Submit Move to the Unsubmitted queue	1221284	Reno	31-22S-05W	KDHE
Pay and Submit Move to the Unsubmitted queue	1276916	Douglas	35-13S-18E	d
Pay and Submit Move to the Unsubmitted queue	1309879	Haskell	26-27S-34W	Deseret Cattle Feeders
Pay and Submit Move to the Unsubmitted queue	1315919	Douglas	02-13S-19E	Kansas Geological Survey

Showing 1 to 5 of 5 entries

17. Once the form gets through KDHE, it will automatically be released to the KGS Water Well Database at: <http://www.kgs.ku.edu/Magellan/WaterWell/index.html>:



Water Well Completion Records (WWC5) Database

Use this form to search the KGS index of water wells. In Kansas, Township values vary from 1 in the north to 35 in the south, and the values for Range are from 1-43 West and 1-25 East. Values for Section are 1 to 36. For additional information or to purchase scans or copies of forms, see our [Data Resources Library](#).

Choose wells by entering a legal description OR county name.	
Legal Description Township: <input type="text"/> South Range: <input type="text"/> East: <input type="radio"/> or West: <input checked="" type="radio"/> Section (optional): <input type="text"/>	County Allen Anderson Atchison Barber Barton
<input type="button" value="Select by T-R"/>	<input type="button" value="Select by County"/>

[Interactive Map](#) of WWC5 data

[Database of Water Well Contractors](#)

[Status maps of WWC5 database](#), Updated Aug. 31, 2016

[Statewide statistics of wells drilled](#) (query may take a while)

[Water Use Code Statistics](#) (query may take a while)

ZIP'd file containing well data

This next link points to a pre-created file containing the data for all wells in the state. The format is the same as the files saved using the above query. The file containing all the wells in Kansas is a large zipped file of 14 megabytes (255,848 wells). Please use the above query to find the most up-to-date data or to receive more manageable amounts of data.

[wwc5_wells.zip](#) ~~updated~~ (Aug. 26, 2016)

These next two searches create files containing wells based on the date chosen.

Wells Constructed in...	January	▼	2016	▼	Select Wells
Wells Plugged in...	January	▼	2016	▼	Select Wells

[FGDC Metadata Information for this set is available.](#)

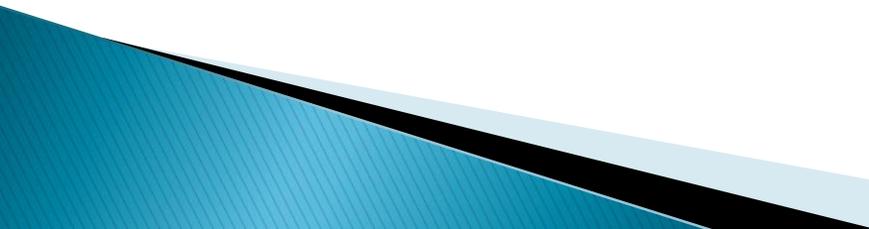
WWC5s Submitted but not Approved

Broken Rules

▶ Rules

1. Grout Material “Other” is checked;
 2. Grout Interval <20 ft and SWL >20 ft (excludes monitoring and dewatering);
 3. Well <50 ft from possible contamination source, or <10 ft from watertight sewer lines (excludes geothermal);
 4. Not used; and
 5. Well casing <12 inches above land surface (excludes monitoring and geothermal).
- 

Rule 1 – Examples

- ▶ Rule 1 – Grout Material – “Other”
 - ▶ Most common failure – monitoring & geothermal wells
 - Monitoring – var. grout materials at diff. intervals
 - Geothermal – “high solids,” “thermally enhanced,” “bentonite slurry w/ high sand content”
 - ▶ Holeplug – used in other wells
 - Use appropriate grout materials for site-specific conditions
 - ▶ Article 30 – K.A.R. 28-30-2(p)
- 

Rule 2 – Examples

- ▶ Rule 2 – Grout Interval <20ft & SWL >20ft
- ▶ Monitoring and dewatering wells excluded;
- ▶ Environmental remediation wells may be excluded;
- ▶ Shallow aquifer targeted by shallow well;
- ▶ Shallow aquifer combined with deeper aquifer(s)
 - Both may be screened, but must be separated by grout in annular space.
- ▶ WWC–5 Form used to report a plugged well
 - Provide correction or resubmit on WWC–5P Form
- ▶ Environmental remediation wells – More than one interval grouted in deeper wells. KOLAR reads top.

Rule 3 – Examples

- ▶ Rule 3 – Well <50 ft from nearest possible contamination sources or <10 ft from watertight sewer lines (excludes geothermal)
- ▶ Most common failure – trying to report no possible contamination sources nearby.
 - Leave blank, if appropriate, until checkbox is added to report “none present” within given distance.
 - Request variance if less than minimum separation distances as per KDHE or local governmental entity.
- ▶ Environmental remediation wells to be excluded.

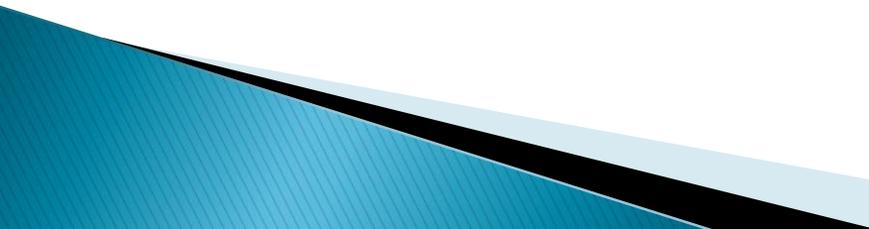
K.A.R. 28-30-8 and 28-30-2(w)(1)(A)

Rule 5 – Examples

- ▶ Rule 5 – Top of casing <12 inches above land surface (excludes monitoring & geothermal)
- ▶ Revision to require submission of scaled-map:
 - Showing location, ID #, and latitude/longitude coordinates for well(s)
- ▶ Environmental remediation wells to be excluded, if scaled-map attached.
- ▶ Errors/typos
- ▶ Flush-mount completion allowed for monitoring wells in high traffic areas if:
 - A scaled-map is provided, and
 - Follow KDHE “Flush-Mount Well Construction Detail”
- ▶ Otherwise, variance request is required (WWP-5).

K.A.R. 28-30-6(f) and 6(s)

Resolving 'On-Hold' WWC-5/5P Forms In KOLAR

- ▶ KDHE can approve “on-hold” KOLAR submittals;
 - ▶ KDHE & KGS KOLAR staff can revise rules for future submittals;
 - ▶ WW Contractor can submit required attachments, KDHE will transfer to KGS & approve submittal;
 - ▶ WW Contractor, KDHE, and well owner can discuss corrective action(s), if needed; and
 - ▶ WW Contractor can make corrections to hard copy of form and submit to KDHE.
- 

How to Correct a WWC-5 or WWC-5P Form When Initially Entered Through KOLAR

At the present time, there is no way to correct a WWC-5 or WWC-5P form that was initially entered using KOLAR.

If you need to submit a corrected WWC-5/WWC-5P form please follow the instructions below.

1. Using KOLAR, bring up the WWC-5 or WWC-5P form you initially entered.
2. Print it.
3. On the top of the page in Red, write "CORRECTED."
4. Highlight the information that you added or changed.
5. Mail the corrected copy to:
KDHE, Bureau of Water
Geology & Well Technology Section
1000 SW Jackson Street, Ste. 420
Topeka, KS 66612-1367

Should you have any questions regarding this procedure, please contact either:

Pamela Chaffee 785.296.3565

pchaffee@kdheks.gov *

or

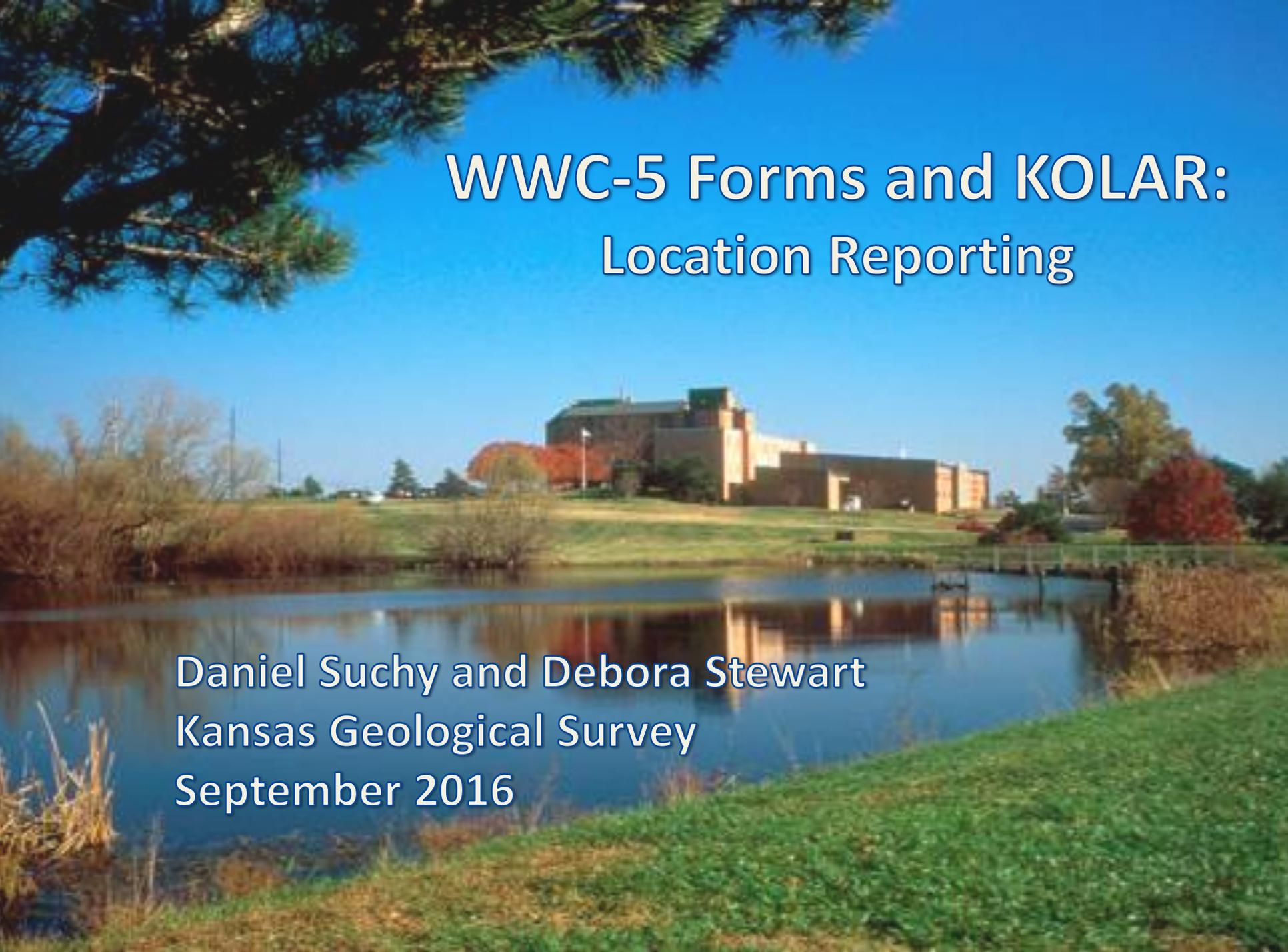
Debbie Biester 785.296.5524

dbiester@kdheks.gov *

* KDHE email addresses and fax numbers will be changing fall 2016.

Other KOLAR Issues Identified

- ▶ WWC-5 Form
 - Separate “Depth(s) GW Encountered” from “Well’s Static Water Level;”
 - Use shallow borehole diameter and casing diameter to determine compliance with minimum grouting requirement at surface;
 - Allow submission for monitoring wells where prior approval of borehole dia. <3 inches larger than casing dia., with subsequent approval by KDHE from “on-hold” status.
 - ▶ WWC-5P Form
 - Some info obscured or not shown in PDF view of submitted form;
 - Clarify casing height info required in Section 5;
 - Remove auto-populate feature in Water Well Owner section.
 - ▶ WWC-5 & WWC-5P Inconsistencies & Proposed Improvements
 - Require “nearest source of possible contamination” on WWC-5, but not on WWC-5P;
 - Determine appropriateness of “Draft” watermark;
 - Signature line vs. checkbox for electronic signature;
 - Auto-populate contractor business name, like license #.
- Older ‘flash form’ of KOLAR cannot be maintained.



WWC-5 Forms and KOLAR: Location Reporting

Daniel Suchy and Debora Stewart
Kansas Geological Survey
September 2016



**The Data Resources Library
at the Kansas Geological Survey**

Topics

- KGS WWC-5 website
- Section, Township, Range
- Latitude/Longitude Coordinate Systems
- Datums
- GPS



**The Data Resources Library
at the Kansas Geological Survey**

KGS Home Page



▶ Water

High Plains/Ogallala Aquifer, WWC5, WIZARD, WIMAS, Publications, ...

▶ Energy

Oil and Gas Wells, Production, Interactive Maps, Other Projects, ...

▶ Geology

County Maps, County Bulletins, Publications, Nomenclature, ODYSSEY Archaeological Research, ...

▶ Geophysics

Russell 4D Seismic, Shallow Seismic, WinSeis, SurfSeis, Earthquakes, ...

▶ Publications

Bibliography, Open-file Reports, Maps/GIS, LEOWEB, Software, ...

▶ Education

GeoKansas, Photo Library, Annual Field Conferences, ...

▶ About the KGS

Positions Available, News, Staff Listing, FAQ, KGS Staff Only, ...

Geologic Map for Morris County Now Available



News

- ▶ **Magnitude 2.7 earthquake at 9:38 PM, Mon., Aug. 29, located 3 mi ENE of Caldwell; details from USGS.**
- ▶ **Oil and gas production data through May 2016 added Aug. 27, 2016.**
- ▶ **New in "Current Research"--Classification of Red Beds at Point of Rocks, Morton County, Kansas: A Historical Review, by Robert S. Sawin**
- ▶ **Kansas Geological Survey Map Wins Awards at Professional Conference**
- ▶ **KGS featured in National Geographic article on the High Plains aquifer**
- ▶ **Search underway for the next Director of the Kansas Geological Survey**
- ▶ **Resources on Induced Seismicity--the KGS presents these links to help people learn about induced seismicity, or earthquakes somehow created or triggered by actions of humans.**

Links



Kansas By County, State Geological Surveys, Kansas Sites, Universities, Professional Organizations, more...

Kansas Geological Survey,
1930 Constant Ave., Lawrence, KS 66047-3724
phone 785-864-3965, fax 785-864-5317,
Core Library 785-864-4909

Wichita Well Sample Library,
4150 W. Monroe Street, Wichita, Kansas 67209-2640
phone 316-943-2343, fax 316-943-1261

KGS Water Page



▶ Water

- ▶ High Plains/Ogallala Aquifer
- ▶ Other Projects, aquifers
- ▶ WIMAS Database
- ▶ WWC5 Database
- ▶ Interactive Map
- ▶ WIZARD Database
- ▶ Master Inventory
- ▶ Publications
- ▶ Water Web Links
- ▶ Staff Listing

▶ Energy

▶ Geology

▶ Geophysics

▶ Publications

▶ Education

▶ About the KGS

Geohydrology Section and Water Resources Information



Newest Items

Open-file Report 2016-19, Western Kansas GMD1 maps, by J. J. Woods and B. B. Wilson

Open-file Report 2016-4, High Plains Aquifer Index Well Program: 2015 Annual Report, by J. J. Butler, Jr., D. O. Whittemore, E. Reboulet, S. Knobbe, B. B. Wilson, R. L. Stotler, and G. C. Bohling

Open-file Report 2016-3, Minimum Saturated Thickness Calculator: Method Overview and Spreadsheet Description, by Andrea Brookfield

Bulletin 260, Water Resources of the Dakota Aquifer in Kansas, by Donald O. Whittemore, P. Allen Macfarlane, and Blake B. Wilson. [News release](#) also available.

[KU Hydrogeology Program](#)--a cooperative program with the KU Department of Geology to teach and mentor students in hydrogeology

Water research at the University of Kansas: <http://www.water.ku.edu/>

Click on “WWC5 Database.”

WWC-5 Search Page

<http://www.kgs.ku.edu/Magellan/WaterWell/index.html>

Wells (WWC5) Database

Wells. In Kansas, Township values vary from 1 in the north to 35 in the south, and the values for Range are from 1-43 West and 1-25 East. Values for Section are arbitrary.

Choose wells by entering a legal description OR county name.	
<p>Legal Description</p> <p>Township: <input type="text" value="16"/> South</p> <p>Range: <input type="text" value="38"/> East: <input type="radio"/> or West: <input checked="" type="radio"/></p> <p>Section (optional): <input type="text" value="16"/></p>	<p>County</p> <p><input type="text" value="Allen"/></p> <p>Anderson</p> <p>Atchison</p> <p>Barber</p> <p>Barton</p>
<input type="button" value="Select by T-R"/>	<input type="button" value="Select by County"/>

[Interactive Map](#) of WWC5 data

[Database of Water Well Contractors](#)

[Status maps of WWC5 database](#), Updated
Aug. 1, 2016

[Statewide statistics of wells drilled](#) (query may
take a while)

[Water Use Code Statistics](#) (query may take a
while)

Can search by Section, Township, and Range; or by County.

List of wells for Section 16, Township 16S, Range 38W



7, Section: 16
ew details.
; to sort.

Save Data
to File

T-R-S	Owner	Well Depth Ascend. Desc.	Static Water Level Ascend. Desc.	Est. Yield Ascend. Desc.	Well Use	Other ID	Action Taken	Completion Date Ascend. Desc.	Scan?
Sec. 16 SW SW SW	Watt, Jr.	180 ft.	120 ft.	10 gpm.	Domestic		Constructed	23-Jun-1976	PDF
Sec. 16 SW NE	Watt, Betty	212 ft.	65 ft.		Irrigation		Plugged	17-Dec-2004	PDF
Sec. 16 SW SW NE	VMW Land Trust	222 ft.			Irrigation		Reconstructed	03-Aug-2004	PDF
Sec. 16 NE SW SW SW	University of Kansas	200 ft.	165 ft.		Monitoring well/observation/piezometer	Monitoring	Constructed	01-Apr-2016	KOLAR PDF
Sec. 16 NW SW SW SW	Watt, Judd	200 ft.	165 ft.	20 gpm.	Domestic, Livestock		Constructed	09-Jun-2016	KOLAR PDF



- List can be sorted by column heading.
- Can get to individual well page by clicking on location link on the left.
- Can see scanned image of WWC-5 by clicking on “PDF” or “Scan” or “KOLAR PDF” link on the right (Also can get to it from the individual well page).



Individual Well Page

← ⓘ chasm.kgs.ku.edu/ords/wwc5.wwc5d2.well_details?well_id=500268

KGS Water Well Database Query
Hydrology Specific Water Well Detail

Well T16S, R38W, Sec. 16, NE SW SW SW, Action: Constructed

Location Info		
Owner: University of Kansas	Status: Constructed	
Location: T16S, R38W, Sec. 16, NE SW SW SW	County: Wichita	
Directions: From intersection of highway 96 & 25 in Leoti Kansas, 12.1 miles North to road D, then 8.8 miles West on road D and 500ft North to flagged location		
Longitude: -101.52963	Latitude: 38.65689	Datum NAD 27
Longitude and latitude from GPS measurements.		
GPS Longitude: -101.52963	GPS Latitude: 38.65689	Datum NAD27
View well on interactive map This link will create a new window and display an interactive map of this well and its neighbors.		

General Info	
Well Depth: 200 ft.	Elevation: 3448 ft.
Static Water Level: 165 ft.	Est. Yield: gpm.
Comp. Date: 01-Apr-2016	Well Use: Monitoring well/observation/piezometer
DWR Applic. #:	Other ID: Monitoring

Driller Info	
Driller: Hydro Resources Mid Continent, Inc.	License #: 145

Scanned Form	
View scan of this form in PDF format.	
You will need the Acrobat PDF Reader , available free from Adobe, to read this file.	

Click on link for scanned image of WWC-5



PDF image of WWC-5 for this well, generated in KOLAR (note bar code at top)

File Edit View History Bookmarks Tools Help
 http://www...00268.pdf x +
 www.kgs.ku.edu/Hydro/WWC5/W/16538/500268.pdf Search
 This file includes fillable form fields. You can print the completed form and save it to your device or Acrobat.com. Fill & Sign Comment Highlight Existing Fields



WATER WELL RECORD Form WWC-5 1304626 Division of Water Resources App. No. Well ID Monitoring

Original Record Correction Change in Well Use

1 LOCATION OF WATER WELL: County: <u>Wichita</u>	Fraction NE ¼ SW ¼ SW ¼ SW ¼	Section Number 16	Township Number T 16 S	Range Number R 38 <input type="checkbox"/> E <input checked="" type="checkbox"/> W
--	---------------------------------	-----------------------------	----------------------------------	--

2 WELL OWNER: Last Name: <u>University of Kansas</u> Business: <u>University of Kansas</u> Address: <u>1246 W Campus Rd Room 20</u> Address: City: <u>Lawrence</u> State: <u>KS</u> ZIP: <u>66045</u>	Street or Rural Address where well is located (if unknown, distance and direction from nearest town or intersection): If at owner's address, check here: <input type="checkbox"/> From intersection of highway 96 & 25 in Leoti Kansas, 12.1 miles North to road D, then 8.8 miles West on road D and 500ft North
--	--

3 LOCATE WELL WITH "X" IN SECTION BOX: N <table border="1" style="width: 100%; height: 100%; text-align: center; border-collapse: collapse;"> <tr><td> </td><td> </td></tr> <tr><td>-- NW --</td><td>-- NE --</td></tr> <tr><td>W</td><td>E</td></tr> <tr><td>-- SW --</td><td>-- SE --</td></tr> <tr><td>X</td><td> </td></tr> <tr><td>S</td><td> </td></tr> </table> -----1 mile-----			-- NW --	-- NE --	W	E	-- SW --	-- SE --	X		S		4 DEPTH OF COMPLETED WELL: <u>200</u> ft. Depth(s) Groundwater Encountered: 1) <u>165</u> ft. 2) ft. 3) ft., or 4) <input type="checkbox"/> Dry Well WELL'S STATIC WATER LEVEL: <u>165</u> ft. <input checked="" type="checkbox"/> below land surface, measured on (mo-day-yr) <u>4/1/2016</u> <input type="checkbox"/> above land surface, measured on (mo-day-yr) Pump test data: Well water was ft. after hours pumping gpm Well water was ft. after hours pumping gpm Estimated Yield: gpm Bore Hole Diameter: <u>6.25</u> in. to <u>200</u> ft. and in. to ft.	5 Latitude: <u>38.65689</u> (decimal degrees) Longitude: <u>101.52963</u> (decimal degrees) Datum: <input type="checkbox"/> WGS 84 <input type="checkbox"/> NAD 83 <input checked="" type="checkbox"/> NAD 27 Source for Latitude/Longitude: <input type="checkbox"/> GPS (unit make/model:) (WAAS enabled? <input type="checkbox"/> Yes <input type="checkbox"/> No) <input type="checkbox"/> Land Survey <input type="checkbox"/> Topographic Map <input type="checkbox"/> Online Mapper:
-- NW --	-- NE --													
W	E													
-- SW --	-- SE --													
X														
S														

6 Elevation: <u>3448</u> ft. <input checked="" type="checkbox"/> Ground Level <input type="checkbox"/> TOC Source: <input type="checkbox"/> Land Survey <input checked="" type="checkbox"/> GPS <input type="checkbox"/> Topographic Map <input type="checkbox"/> Other
--

7 WELL WATER TO BE USED AS:

1. Domestic: <input type="checkbox"/> Household <input type="checkbox"/> Lawn & Garden <input type="checkbox"/> Livestock	5. <input type="checkbox"/> Public Water Supply: well ID	10. <input type="checkbox"/> Oil Field Water Supply: lease
2. <input type="checkbox"/> Irrigation	6. <input type="checkbox"/> Dewatering: how many wells?	11. Test Hole: well ID
3. <input type="checkbox"/> Feedlot	7. <input type="checkbox"/> Aquifer Recharge: well ID	<input type="checkbox"/> Cased <input type="checkbox"/> Uncased <input type="checkbox"/> Geotechnical
	8. <input checked="" type="checkbox"/> Monitoring: well ID <u>Monitoring</u>	12. Geothermal: how many bores?
	9. Environmental Remediation: well ID	a) Closed Loop <input type="checkbox"/> Horizontal <input type="checkbox"/> Vertical
	<input type="checkbox"/> Air Spargers <input type="checkbox"/> Soil Vapor Extraction	b) Open Loop <input type="checkbox"/> Surface Discharge <input type="checkbox"/> Inj. of Water

Individual Well Page

← | chasm.kgs.ku.edu/ords/wwc5.wwc5d2.well_details?well_id=500268

KGS Water Well Database Query
Hydrology Specific Water Well Detail

Well T16S, R38W, Sec. 16, NE SW SW SW, Action: Constructed

Location Info		
Owner: University of Kansas	Status: Constructed	
Location: T16S, R38W, Sec. 16, NE SW SW SW	County: Wichita	
Directions: From intersection of highway 96 & 25 in Leoti Kansas, 12.1 miles North to road D, then 8.8 miles West on road D and 500ft North to flagged location		
Longitude: -101.52963	Latitude: 38.65689	Datum NAD 27
Longitude and latitude from GPS measurements.		
GPS Longitude: -101.52963	GPS Latitude: 38.65689	Datum NAD27
View well on interactive map This link will create a new window and display an interactive map of this well and its neighbors.		
General Info		
Well Depth: 200 ft.	Elevation: 3448 ft.	
Static Water Level: 165 ft.	Est. Yield: gpm.	
Comp. Date: 01-Apr-2016	Well Use: Monitoring well/observation/piezometer	
DWR Applic. #:	Other ID: Monitoring	
Driller Info		
Driller: Hydro Resources Mid Continent, Inc.	License #: 145	
Scanned Form		
View scan of this form in PDF format.		
You will need the Acrobat PDF Reader , available free from Adobe, to read this file.		

Click on link to plot well on interactive map



Interactive map will open up in a new tab.

The screenshot shows a web browser window displaying the Kansas Geological Survey's Water Wells interactive map. The browser address bar shows the URL: `maps.kgs.ku.edu/wwc5/index.cfm?extenttype=wwc5&extentvalue=500268`. The page title is "Kansas Water Wells" and the site is identified as the "Kansas Geological Survey".

The map interface includes a navigation menu with options: "Statewide View", "Zoom to Location", "Filter Wells", "Label Wells", "Classify Wells", "Download Wells", "Print to PDF", "Clear Highlight", and "Help". The map itself shows a grid of sections in Wichita County, Kansas, with a well highlighted in yellow. The well's location is marked with a yellow circle and a blue dot. The map also shows several other wells marked with blue dots. The map includes a scale bar (0 to 600 feet) and a legend.

The right sidebar displays detailed information for the selected well, "WATER WELL (WWC5)". The information is organized into sections:

- WATER WELL (WWC5)**
- County:** Wichita
- Section:** T16S R38W Sec. 16
- Quarter Section:** SW SW SW
- Owner:** University of Kansas
- Status:** Constructed
- Depth:** 200 ft
- Elevation:** 3448 ft
- Static Water Level:** 165 ft
- Estimated Yield:**
- Well Use:** Monitoring Well/Observation /Piezometer
- Other ID:** Monitoring
- Completion Date:** Apr-01-2016
- Driller:** Henkle Drilling & Supply Co. Inc.
- DWR Application Number:**
- KGS Record Number:** 500268

Below the well information, there is a "Links:" section with a single link: [Full KGS Database Entry](#).

Well that you were looking at will be highlighted in yellow; notice the information for that well on the right.

Features

The screenshot displays the 'Kansas Water Wells' web application. The browser address bar shows the URL: `maps.kgs.ku.edu/wwc5/index.cfm?extenttype=wwc5&extentvalue=500268`. The application title is 'Kansas Water Wells' and it is part of the 'Kansas Geological Survey'. The interface includes a menu bar with options like 'Statewide View', 'Zoom to Location', 'Filter Wells', 'Label Wells', 'Classify Wells', 'Download Wells', 'Print to PDF', 'Clear Highlight', and 'Help'. A search bar is located in the top right. The main map area shows a grid of sections with several wells marked by blue dots. A yellow circle highlights a specific well. The map also shows roads and county boundaries, with 'Wichita County' labeled. A scale bar is visible in the bottom left, and the map is credited to 'Esri, HERE, DeLorme, INCREMENT P, NGA, USGS'. The right-hand panel provides detailed metadata for the selected well:

WATER WELL (WWC5)	
County:	Wichita
Section:	T16S R38W Sec. 16
Quarter Section:	SW SW SW
Owner:	University of Kansas
Status:	Constructed
Depth:	200 ft
Elevation:	3448 ft
Static Water Level:	165 ft
Estimated Yield:	
Well Use:	Monitoring Well/Observation /Piezometer
Other ID:	Monitoring
Completion Date:	Apr-01-2016
Driller:	Henkle Drilling & Supply Co. Inc.
DWR Application Number:	
KGS Record Number:	500268

Links:

- [Full KGS Database Entry](#)

You can click and drag the map, zoom in and out, and add a number of features.

File Edit View History Bookmarks Tools Help

KGS--Water Wells Quer... x Map of Kansas Water W... x +

maps.kgs.ku.edu/wwc5/index.cfm?extenttype=wwc5&extentvalue=500268

Kansas Water Wells

Kansas Geological Survey

Statewide View | Zoom to Location | Filter Wells | Label Wells | Classify Wells | Download Wells | Print to PDF | Clear Highlight | Help

Layers Info Legend Links

Layer	Transparency
<input checked="" type="checkbox"/> WWC5 Water Wells	<input type="text"/>
<input checked="" type="checkbox"/> Sec-Twp-Rng	<input type="text"/>
<input type="checkbox"/> Topographic Map	<input type="text"/>
<input checked="" type="checkbox"/> 2014 Aerials	<input type="text"/>
<input type="checkbox"/> 2002 B&W Aerials	<input type="text"/>
<input type="checkbox"/> 1991 B&W Aerials	<input type="text"/>
<input checked="" type="checkbox"/> Base map	<input type="text"/>

Wallace Logan
Greeley Wichita

Esri, HERE, DeLorme, INCREMENT P, NGA, USGS

4:27 PM
8/30/2016

- Can add different layers using the “Layers” tab on the upper right
- Can add aerial photos
- Can add a topo map

KGS Interactive Map of WWC5 data

<http://maps.kgs.ku.edu/wwc5/index.cfm?extenttype=wwc5>

- Zoom to Location
- Enter Latitude, Longitude and Datum, then click 'Go'

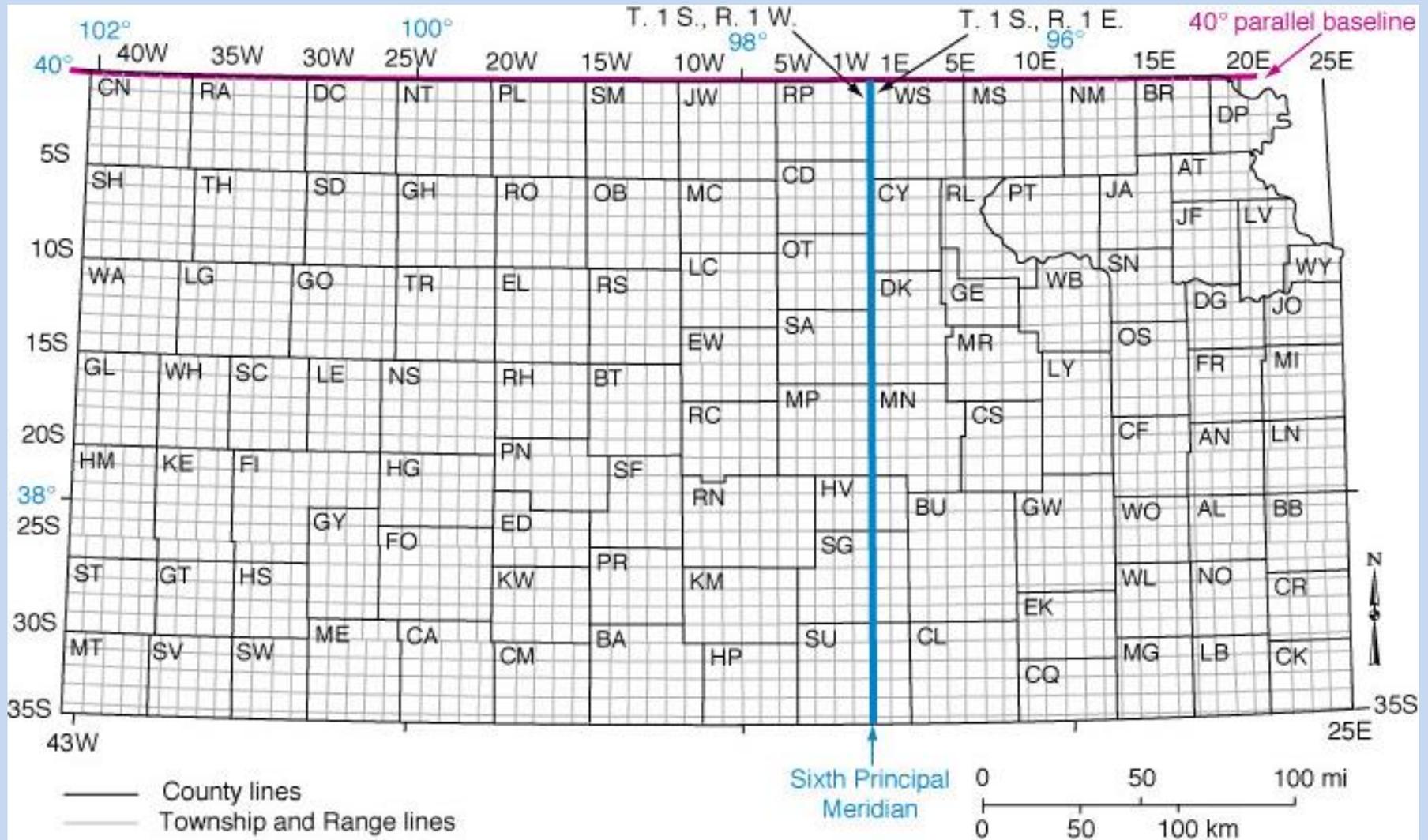
The screenshot displays the 'Kansas Water Wells' interactive map interface. The browser address bar shows the URL: maps.kgs.ku.edu/wwc5/index.cfm?extenttype=wwc5. The page title is 'Kansas Water Wells' and the site is identified as 'Kansas Geological Survey'. A navigation menu includes 'Statewide View', 'Zoom to Location', 'Filter Wells', 'Label Wells', 'Classify Wells', 'Download Wells', 'Print to PDF', 'Clear Highlight', and 'Help'. The map shows a grid with 'McCook' and 'Saline River' labeled. A 'Zoom to Location' dialog box is open, showing various input fields: Township (South), Range (East), Section, Latitude (ex. 39.12345), Longitude (ex. -95.12345), Datum (NAD27), KGS ID Number, Town, County (Select), and a 'Return to original location' button. A 'Layers' panel on the right lists 'WWC5 Water Wells*', 'Sec-Twp-Rng*', 'Topographic Map', '2014 Aerials', '2002 B&W Aerials', '1991 B&W Aerials', and 'Base map'. A scale bar at the bottom indicates 0, 15, and 30 miles. The map is powered by Esri, HERE, DeLorme, NGA, and USGS.

Where is that well?

Everything is location, location, location!



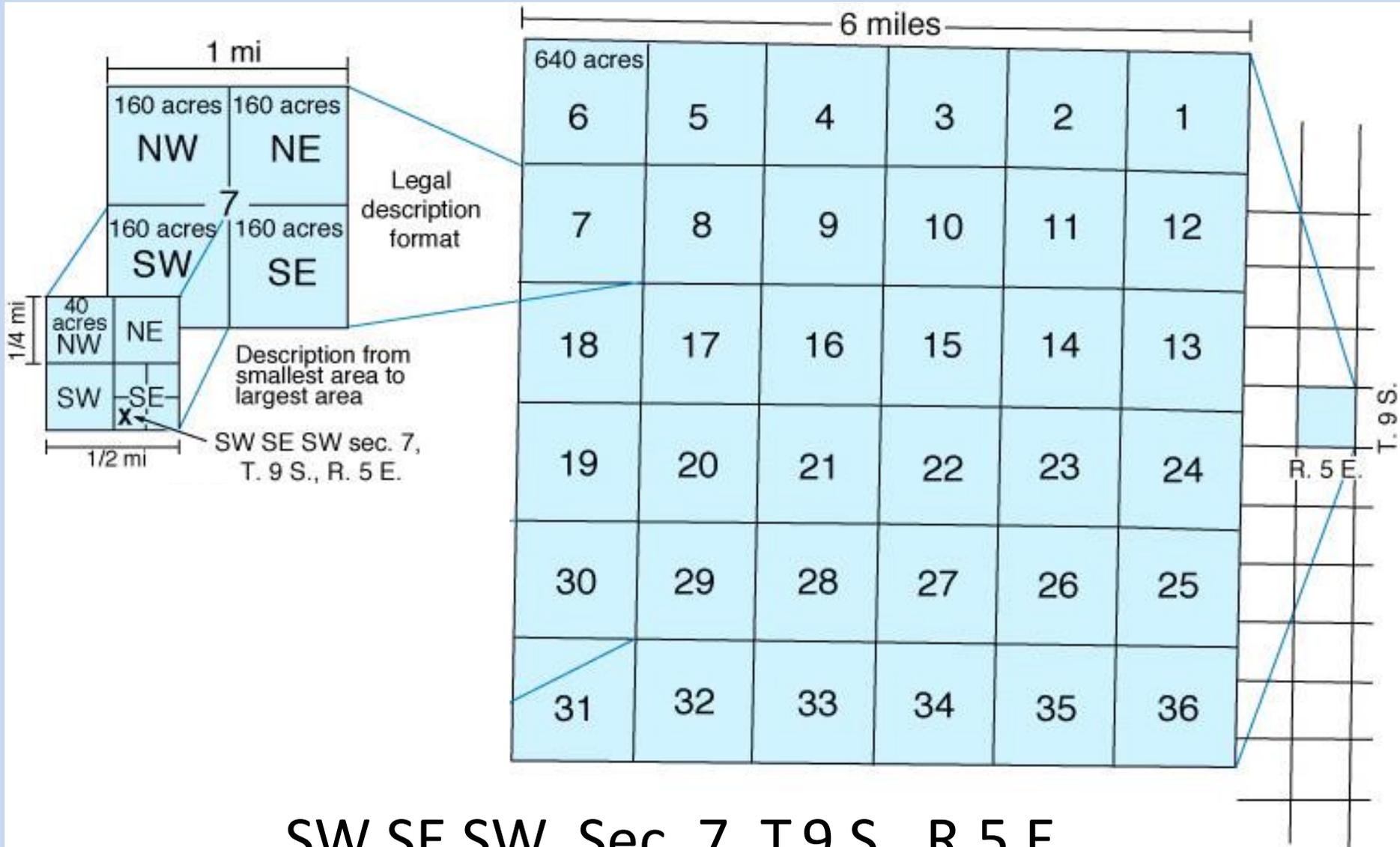
The Public Land Survey System in Kansas



Kansas Geological Survey, Public Information Circular (PIC) 20

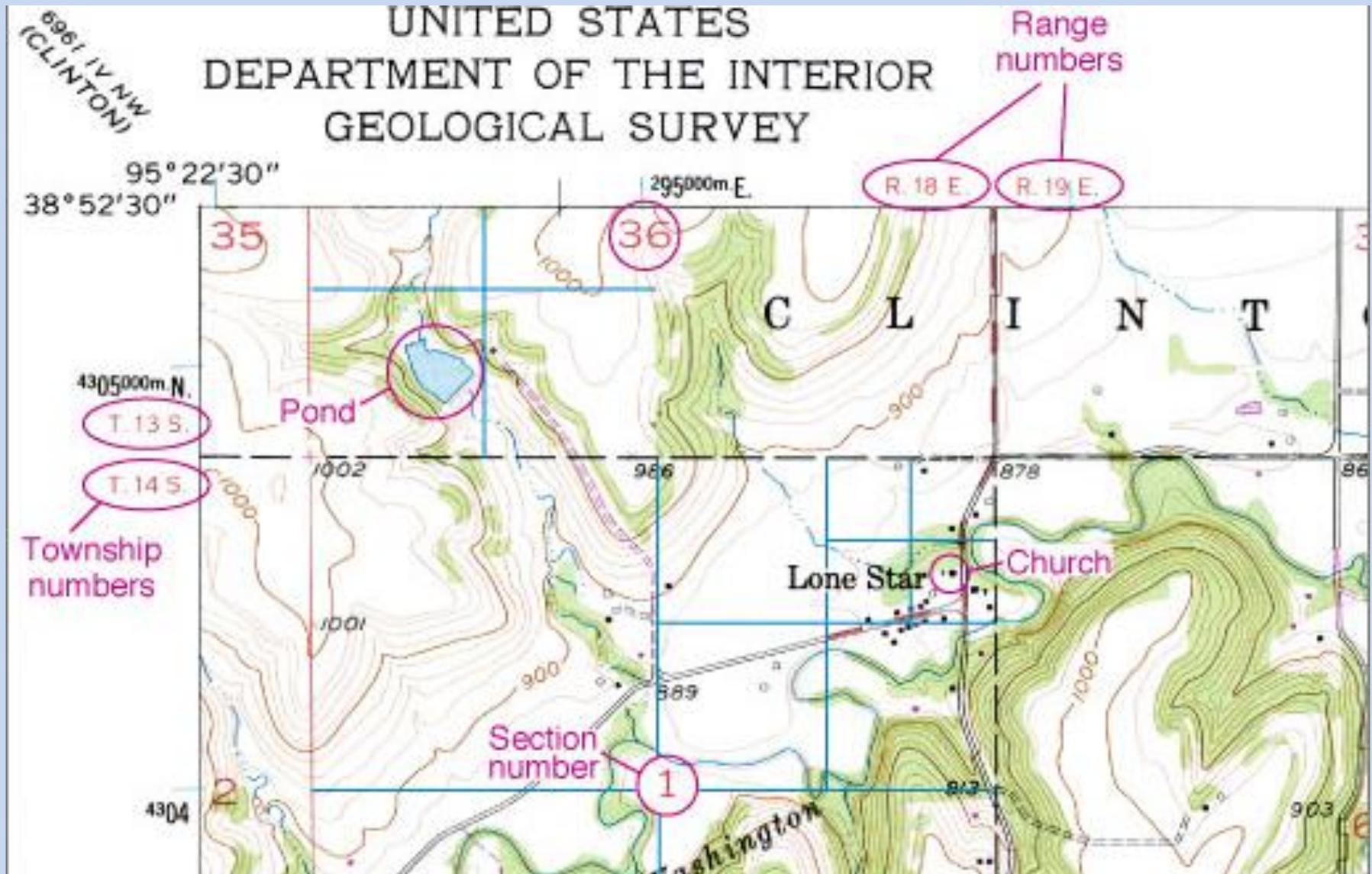
http://www.kgs.ku.edu/Publications/pic20/pic20_1.html

Section, Township, and Range



SW SE SW Sec. 7, T.9 S., R.5 E.

USGS Topo. Map, small area in Douglas County, KS



Church in Lone Star is in SE NE NE sec. 1, T.14S., R.18E.

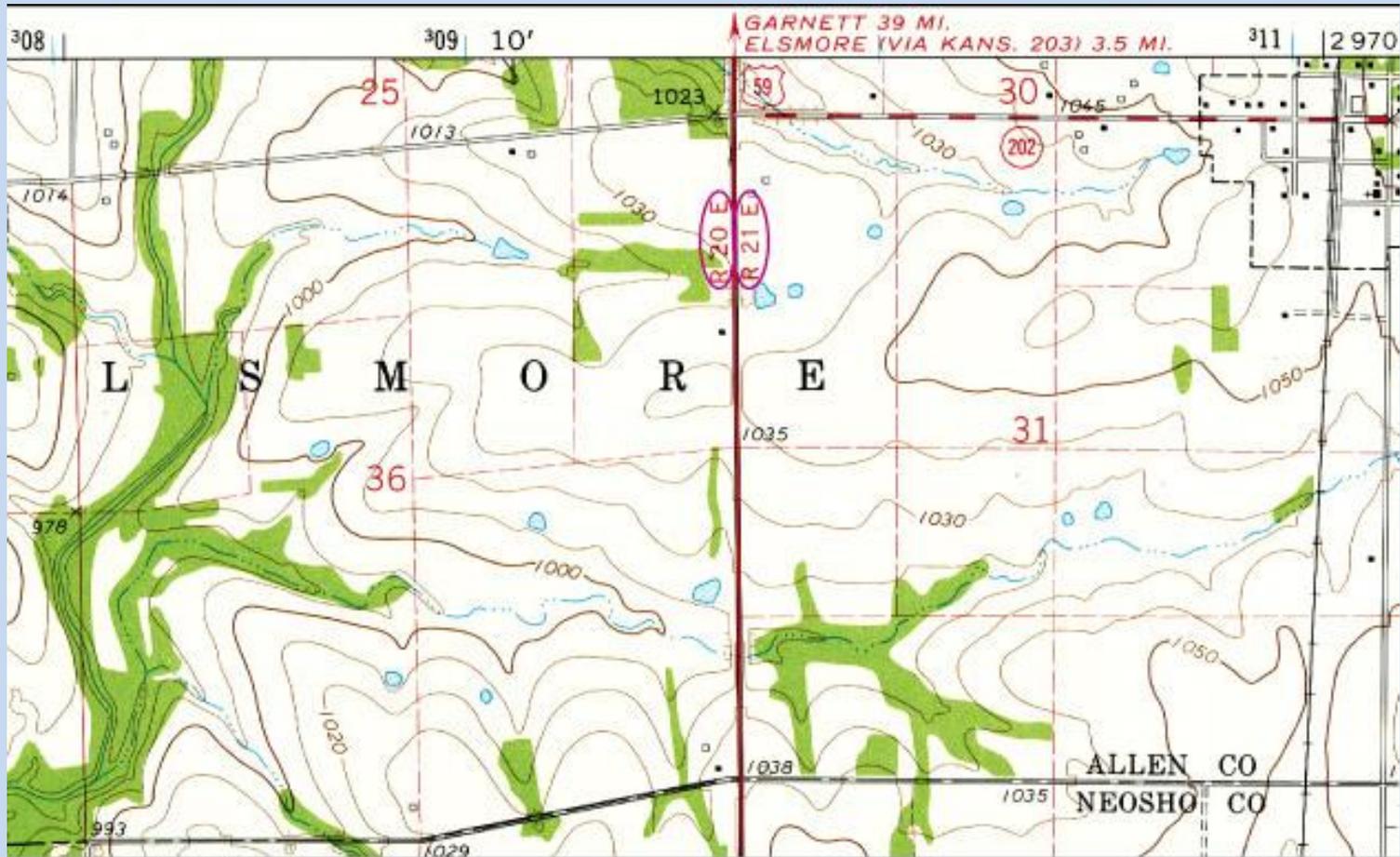
Pond is in SW SW sec. 36, T.13S., R.18E.

Common Mistakes Made

when reporting section, township, & range:

- Listing quarters in the wrong order (must be smallest to largest, left to right).
- Switching township and range numbers.
- Mislabeling ranges as to East and West.
- Designating two townships and two ranges (a section can only be in one township, which is designated by one township number and one range number).

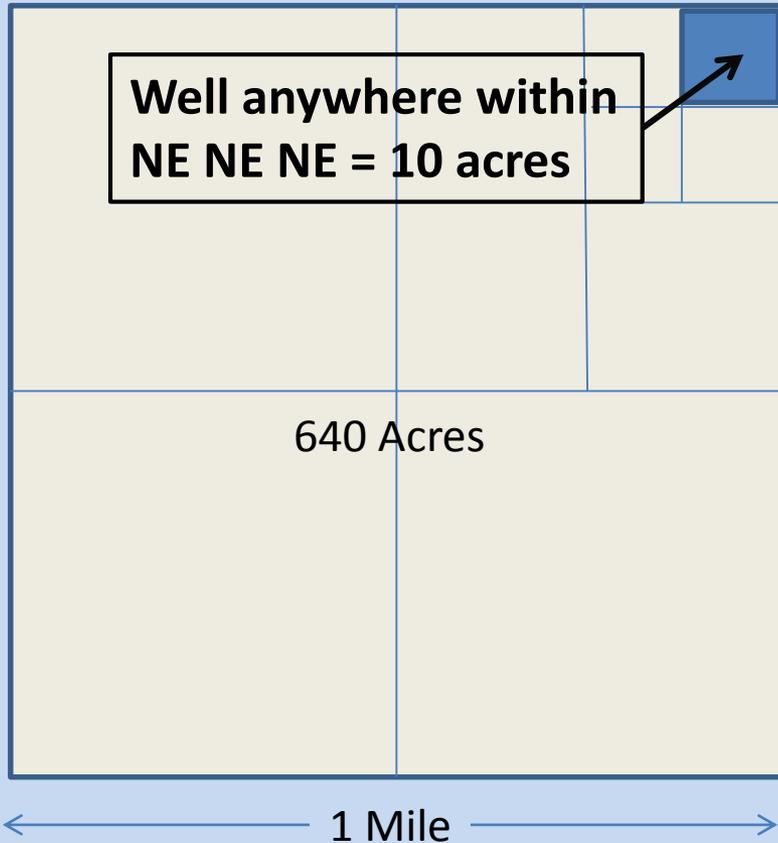
Irregularities



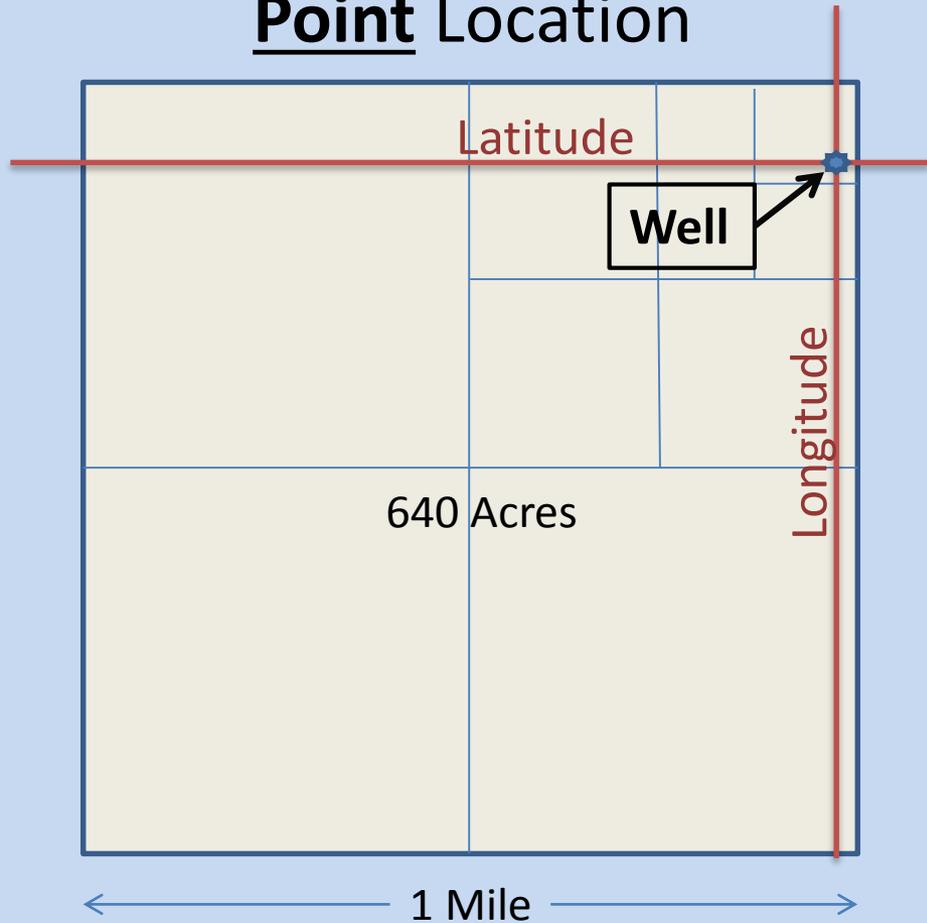
- Edges of the state
- Military properties (e.g., Fort Riley)
- Major Rivers
- Range 8 East
- Irregular sections (surveying adjustments)

Well Location

Quarter Calls =
Area Location

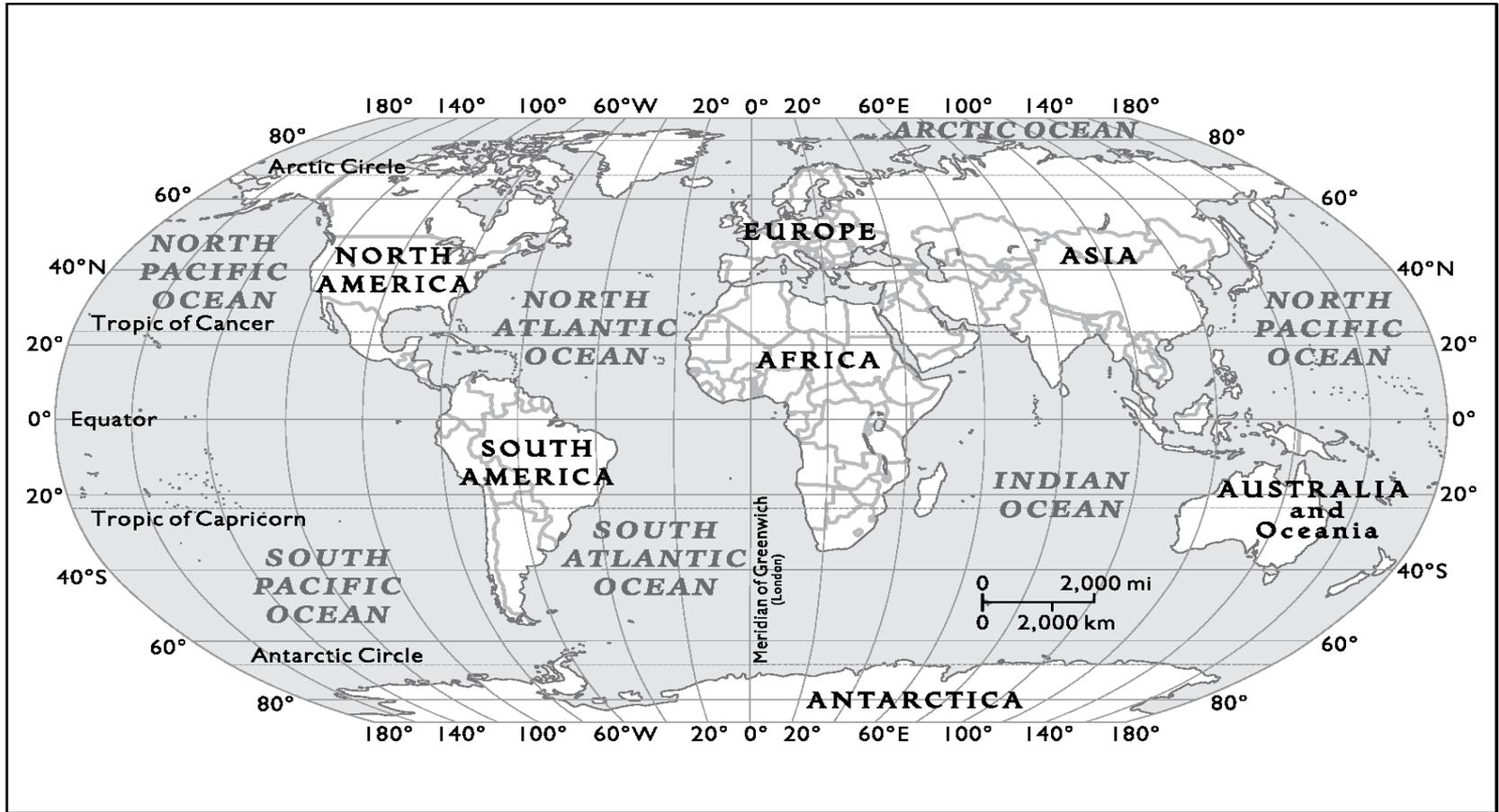


Latitude/Longitude =
Point Location

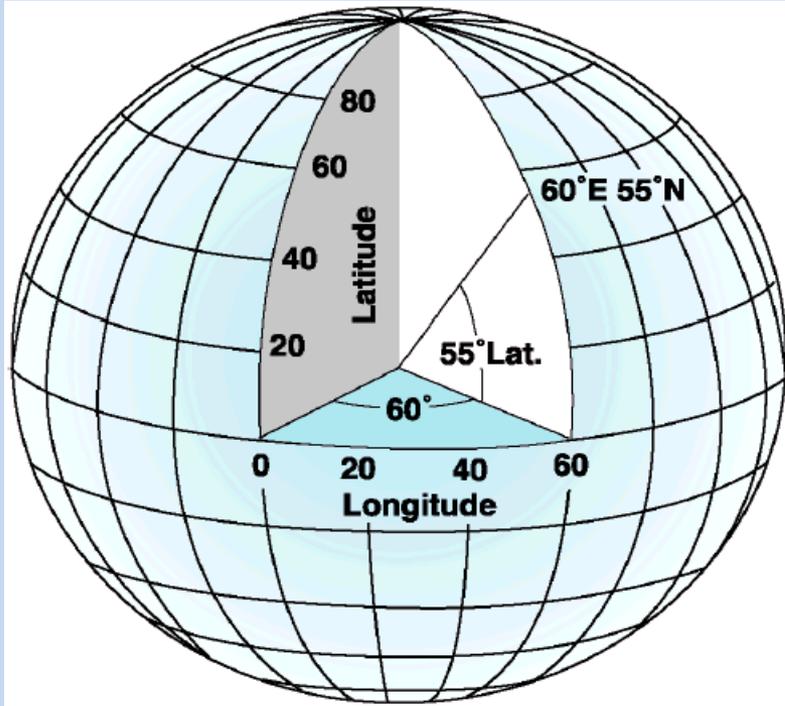


(Still required to include written location and/or address on WWC-5)

Latitude and Longitude



Sphere Models and Geographic Latitudes and Longitudes



Intersection between a parallel (latitude) and meridian (longitude) defines a location.

Only need two angles—latitude and longitude

Prime Meridian—The Royal Greenwich Observatory



(Slide courtesy of Dr. Xingong Li
KU Department of Geography)

The Austin Capitol Dome Liberty Star Horizontal Control Station (The star in the hand of the Goddess of Liberty)

Datum	Coordinate System	Coordinates	Units
NAD 83	Geodetic Latitude, Longitude	30:16:28.82 N, 97:44:25.19 W	deg:min:sec
NAD-27	Geodetic Latitude, Longitude	30:16:28.03 N, 97:44:24.09 W	deg:min:sec
WGS-72	Geodetic Latitude, Longitude	30:16:28.68 N, 97:44:25.75 W	deg:min:sec
NAD-83	UTM Easting, Northing, Zone	621160.98, 3349893.53 14 R	meters
NAD-27	UTM Easting, Northing, Zone	621193.18, 3349688.21	meters
NAD-83	Military Grid Reference System	14RPU2116149894	meters
NAD-27	Military Grid Reference System	14RPJ2119349688	meters
NAD-83	State Plane, TX C 4203 Easting, Northing	949465.059, 3070309.475	meters
NAD-27	State Plane, TX C 4203 Easting, Northing	2818560.55, 230591.76	feet
NAD-83	State Plane, TX SC 4204 Easting, Northing	721201.977, 4271229.432	meters
NAD-27	State Plane, TX SC 4204 Easting, Northing	2397741.25, 889749.98	feet
WGS-72	World Geographic Reference System	FJHA1516	deg. and min.
	VOR-DME Bearing, Distance, VOR ID	230.46, 2.271, 114.6 Ch.93 AUS	deg,nmi,id
	Loran-C GRI 7980 W, X, Y, Z TDs	10998.9,24795.0,47040.8,63902.3	microsec.
	U.S. Postal Zip Code (5-digits)	78705	

One Location Described by Different Coordinate Systems

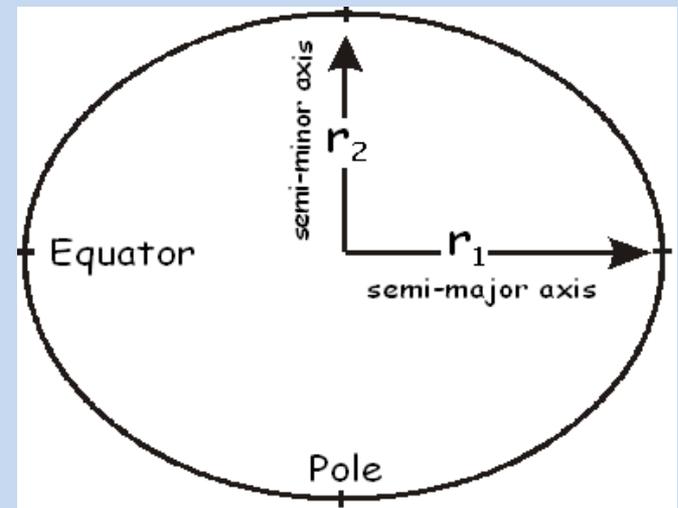
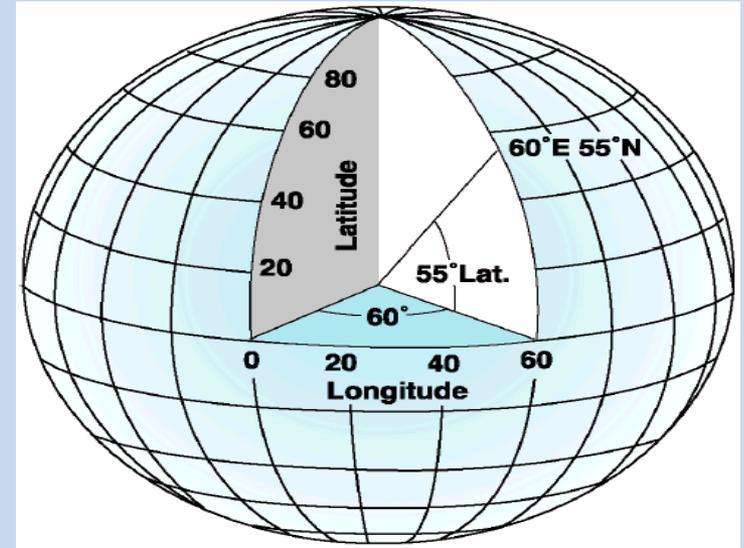
P. H. Dana 8/20/98

(Peter H. Dana, The Geographer's Craft Project, Department of Geography, The University of Colorado at Boulder)

Ellipsoid Models and Datums

Horizontal Datum = Reference Grid System Used to Describe Points on the Surface of the Earth

- Newton (1670) suggested an ellipsoidal earth due to centrifugal force (wider at the equator).
- **NAD 27** (North American Datum 27) – Clarke Spheroid.
- **NAD 83** (North American Datum 83) – GRS 1980 Ellipsoid.
- **WGS 84** (World Geographic Reference System) – WGS 1984 Ellipsoids.



(Modified from Dr. Li)

Horizontal Datums Commonly Used for Kansas

- NAD 27 (North American Datum of 1927)
 - Based on Clark ellipsoid of 1866
 - Reference point: Meades Ranch, Kansas
 - Control points surveyed on the ground - **stationary**
 - Kansas Geological Survey online data is in NAD 27
 - NAD 83 and WGS 84 coordinates are converted to NAD 27 coordinates
- NAD 83 (North American Datum of 1983)
 - Based on earth-centered Geodetic Reference System of 1980 (GRS 1980)
 - Developed using satellite observations
 - Tied to North American tectonic plate - **stationary**
- WGS 84 (World Geodetic System 1984)
 - Based on WGS 84 ellipsoid
 - Globally Based, uses Satellites
 - Tied to relative positions of Earth's tectonic plates - **it moves!**
 - GPS Units' usual default , also Google Earth's
- **Note: KGS cannot not use Lat/Long's submitted without horizontal datum -- location of well will default to PLSS location**

The Point of Origin

- The mother of all other control points for NAD 27
- Determined by celestial observations

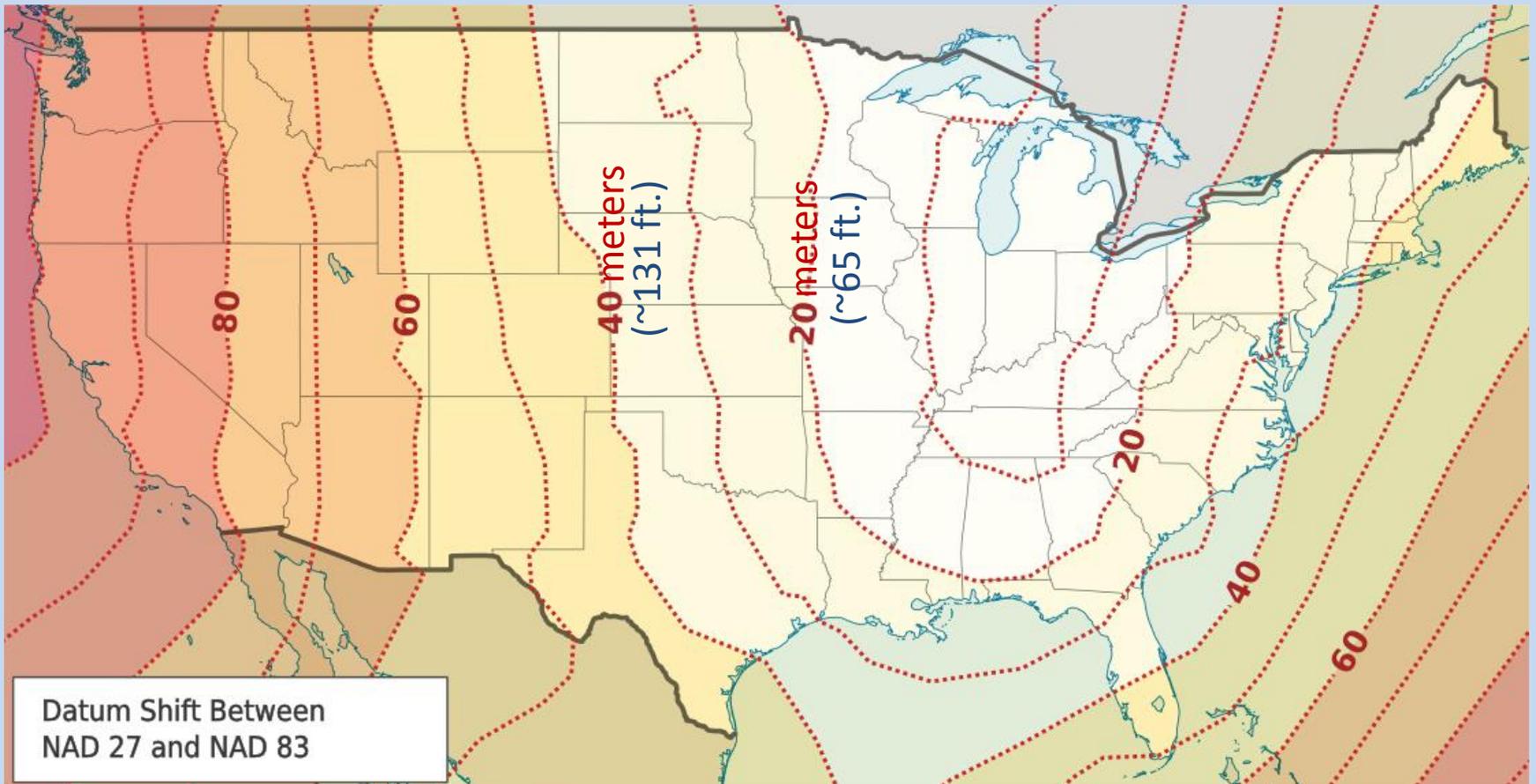


Meades Ranch in Kansas for NAD27 (12 miles north of Lucas, KS)

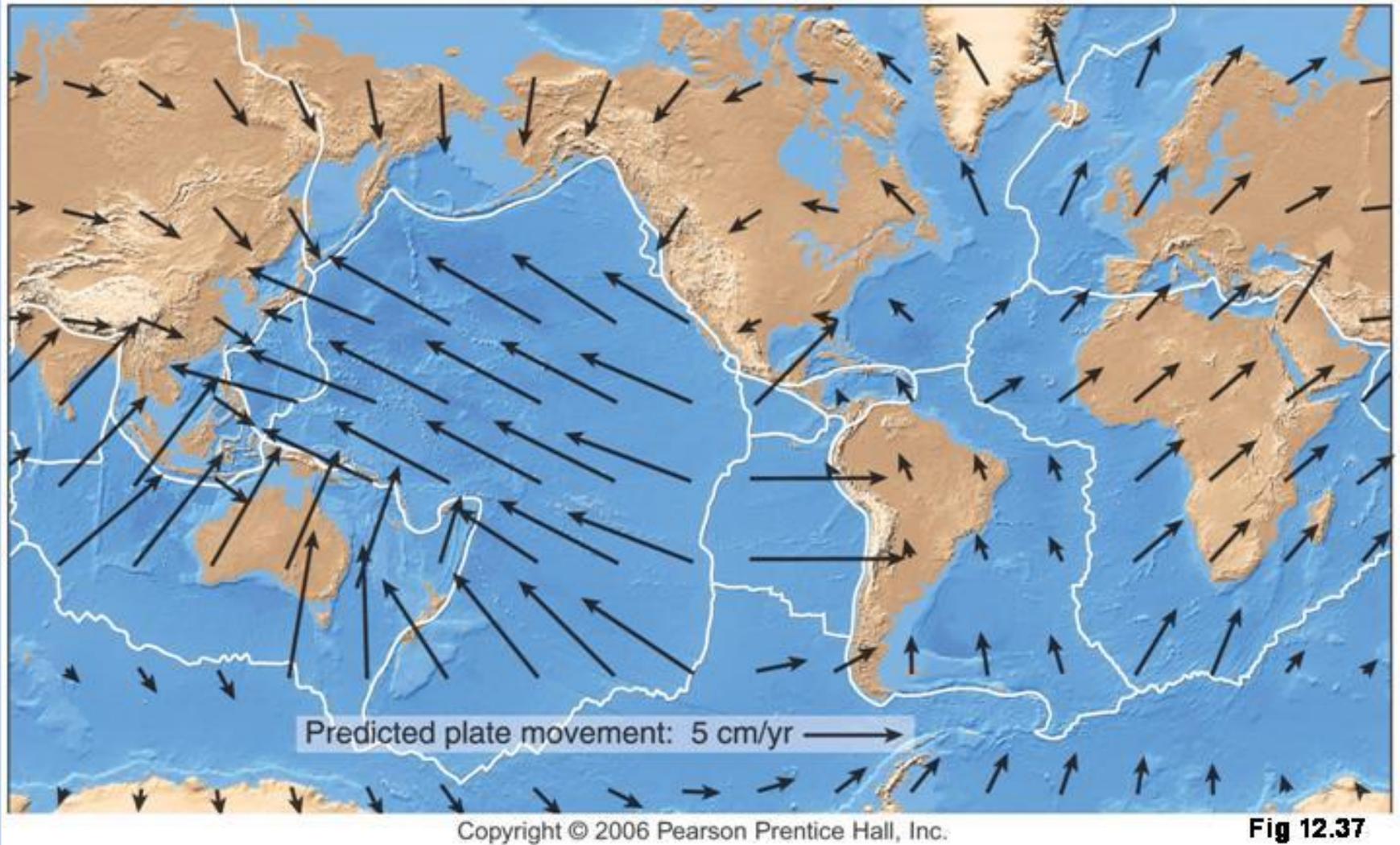
(Slide courtesy of Dr. Xingong Li,
KU Department of Geography)

Datum shift between NAD27 and NAD 83

- Horizontal Datum Shift: **same coordinates with different horizontal datums result in different locations**



Movement of Earth's Tectonic Plates

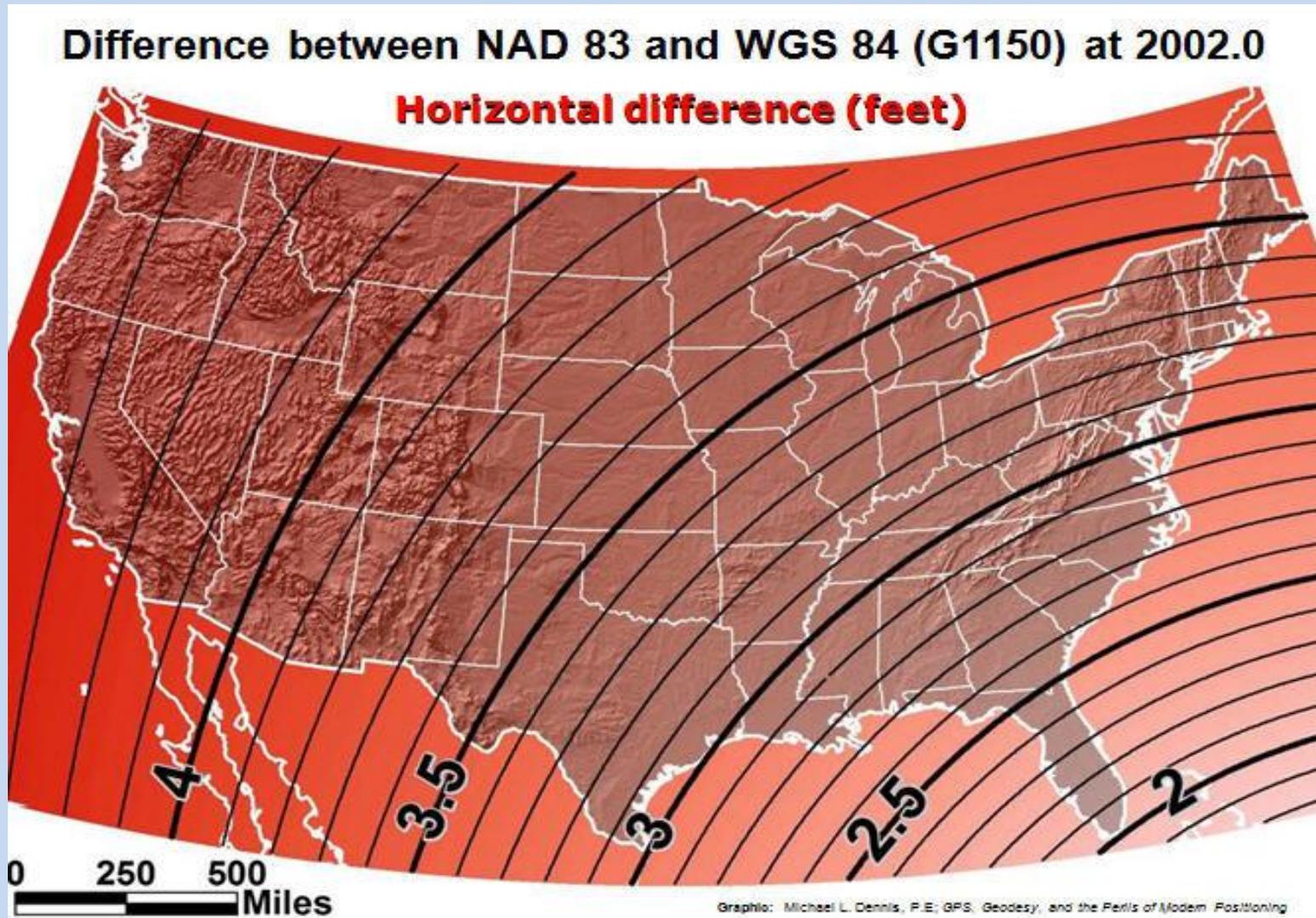


- WGS 84 Horizontal Datum is tied to the relative rate of movement of the tectonic plates, but its reference pole, meridian, and equator are very close to the geographic north pole, the Greenwich Prime Meridian, and the geographic equator. Other places on Earth's surface move relative to that reference ellipsoid.

(Credit: Pearson Prentice Hall, Inc.)

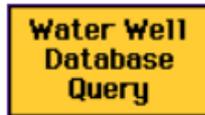
Datum shift between NAD 83 and WGS 84

NAD 83 and WGS 84 initially were nearly identical, but not now



(Graphic from: <http://www.spatial-ed.com/datums/datums-basics/532-convert-wgs84-nad83.html>)

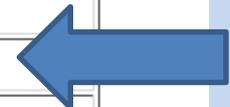
KGS Individual Water Well Web Page



Specific Water Well Detail

Well T27S, R3E, Sec. 11, NE SW NE NW, Action: Constructed

Location Info		
Owner: Parks	Status: Constructed	
Location: T27S, R3E, Sec. 11, NE SW NE NW	County: Butler	
Directions: 12722 SW Wagon Wheel Rd, Andover		
Longitude: -97.0740786	Latitude: 37.7209832	Datum NAD 27
Longitude and latitude from GPS measurements.		
GPS Longitude: -97.0744	GPS Latitude: 37.721	Datum WGS84
View well on interactive map This link will create a new window and display an interactive map of this well and its neighbors.		
General Info		
Well Depth: 310 ft.	Elevation: 1287 ft.	
Static Water Level: ft.	Est. Yield: gpm.	
Comp. Date: 17-Mar-2016	Well Use: Geothermal, Closed Loop, Vertical	
DWR Applic. #:	Other ID:	



Now shows Lat/Long values for two horizontal datums
(if you don't give us datum, it will calculate lat/long in NAD 27 from PLSS)

KOLAR Requires Latitude, Longitude and a Horizontal Datum

Home KDHE Forms Settings Help

KOLAR

Create Doc Deb Stewart Test WW Driller

Logout

[Back to WWC5](#)

Latitude, Longitude and Datum are required when creating a WWC5. Some location information will be filled in automatically once these are entered. You can change these later if you need to.

Latitude: N (decimal degrees) e.g. 38.881796

Longitude: W (decimal degrees) e.g. 95.383889

Datum: WGS84
 NAD83
 NAD27

Submit

Datum = Reference Grid System Used to Describe Points on the Surface of the Earth

KOLAR

Required Questionable Invalid Associated fields

WATER WELL RECORD Form WWC-5

Division of Water Resources App. # Well ID

Original record Correction Change in well use

1 LOCATION OF WATER WELL: <input type="text" value="Dickinson"/>	Fraction (smallest-to-largest) NW <input type="button" value="1/4"/> SW <input type="button" value="1/4"/> SW <input type="button" value="1/4"/> SE <input type="button" value="1/4"/>	Section <input type="text" value="34"/>	Township <input type="text" value="13"/> S	Range <input type="text" value="2"/> <input checked="" type="radio"/> E <input type="radio"/> W
--	---	--	--	--

2 WATER WELL OWNER:

First:

Last:

Business:

Address line 1:

Address line 2:

City:

State:

ZIP:

3 WATER WELL ADDRESS:

Street/Rural Address of Well Location; if unknown, distance & direction from nearest town or intersection: If at owner's address, check here

S. of Abilene on Buckeye Ave (K-15) 3 miles to 1900 Ave. then E. one mile to 1935 Ave. then N. 100 yards to maintenance building.
S. of Abilene on Buckeye Ave (K-15) 3 miles to 1900 Ave. then E. one mile to 1935 Ave. then N. 100 yards to maintenance building.

4

DEPTH OF COMPLETED WELL ft.
Depth(s) groundwater encountered:
1) ft. 2) ft. 3) ft. or 4) Dry well

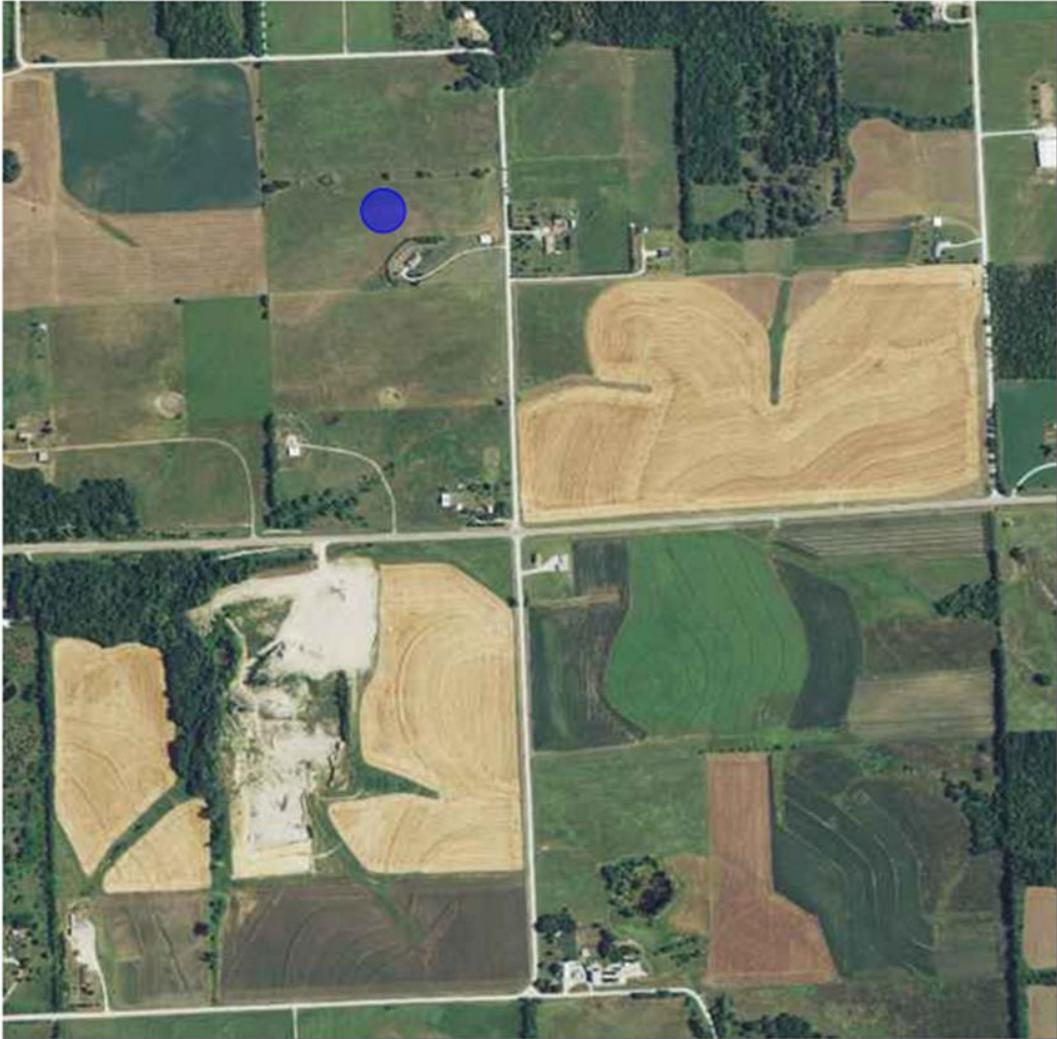
WELL'S STATIC WATER LEVEL ft.
 below land surface measured (mm/dd/yyyy)
 above land surface measured (mm/dd/yyyy)

5 Latitude: (decimal degrees)
Longitude: (decimal degrees)
Datum: WGS84 NAD83 NAD27
Source for latitude/longitude:
 GPS (unit make/model)
WAAS enabled? Yes No
 Land survey Topographic map
 Online mapper

Home | KDHE Forms | Settings | Help

KOLAR

2014 | 2012 | 2010 | 2006 | 2002 | Topo



View Location Info | Save and Exit

Well ID: The First One

Section	Township	Range
35	13 S	18 <input checked="" type="radio"/> E <input type="radio"/> W

Click on "View Location Info" box to verify well location.



▶ Water

High Plains/Ogallala Aquifer, WWC5, WIZARD, WIMAS, Publications, ...

▶ Energy

Oil and Gas Wells, Production, Interactive Maps, Other Projects, ...

▶ Geology

County Maps, County Bulletins, Publications, Nomenclature, ODYSSEY Archaeological Research, ...

▶ Geophysics

Russell 4D Seismic, Shallow Seismic, WinSeis, SurfSeis, Earthquakes, ...

▶ Publications

Bibliography, Open-file Reports, Maps/GIS, LEOWEB, Software, ...

▶ Education

GeoKansas, Library, Annual Field Conferences

▶ About the KGS

Positions Available, News, Staff Listing, FAQ, KGS Staff Only, ...

Geologic Map for Morris County Now Available



News

- ▶ **Magnitude 3.2 earthquake at 10:27 AM, Wed., Aug. 31, located 4 mi NNW of Ellis; details from [USGS](#).**
- ▶ **Magnitude 2.7 earthquake at 9:38 PM, Mon., Aug. 29, located 3 mi ENE of Caldwell; details from [USGS](#).**
- ▶ **Oil and gas production data through May 2016 added Aug. 27, 2016.**
- ▶ **New in "Current Research"--Classification of Red Beds at Point of Rocks, Morton County, Kansas: A Historical Review, by Robert S. Sawin**
- ▶ **Kansas Geological Survey Map Wins Awards at Professional Conference**

Links



GeoKansas



Data Access and Support Center



[Kansas By County, State Geological Surveys, Kansas Sites, Universities, Professional Organizations, more...](#)



LEOWEB V11.000

- Lat/Long (D.dddd)
- Lat/Long (DMS)
- Lat/Long (DM.mm)
- TRS_FT
- TRS Q Calls
- UTM
- Help
- About LEOWEB
- REST Service

Enter Latitude and Longitude as Decimal Degrees

Datum NAD83 Corner SE Session No -99999

Latitude 38.0

Longitude -98.0

Results String Enter values above and click "Submit" below to see results here.

Submit

Q- Go Actions

No data found.



LEOWEB V11.000

- Lat/Long (D.dddd)
- Lat/Long (DMS)**
- Lat/Long (DM.mm)
- TRS_FT
- TRS Q Calls
- UTM
- Help
- About LEOWEB
- REST Service

Enter Latitude and Longitude as Degrees Minutes and Seconds

Datum: Corner: Session No:

Latitude Degrees: Minutes: Seconds:

Longitude Degrees: Minutes: Seconds:

Results String: Enter values above and click "Submit" below to see results here.

Submit



LEOWEB V11.000

Lat/Long (D.dddd)

Lat/Long (DMS)

Lat/Long (DM.mm)

TRS_FT

TRS Q Calls

UTM

Help

About LEOWEB

REST Service

Enter Latitude and Longitude as Degrees Minutes and Seconds

Datum Corner Session No 15828816009552Latitude Degrees Minutes Seconds Longitude Degrees Minutes Seconds

Results String
Input DMS Lat = 38 39' 24.8 Long = -101 31' 46.66
DD Lat: 38.656888 Long: -101.529627 Datum: NAD27
Kansas TRS: 16S38W16

Township: 16S Range : 38 W Section: 16
Spot Footages from SE Corner: 592 N 4718 W
Spot: Center of NE SW SW SW

Section is approximately 645 acres
Length of north line = 5264 Ft
Length of south line = 5305 Ft
Length of east line = 5319 Ft
Length of west line = 5314 Ft

Submit



Go

Actions

The Global Positioning System (GPS)



A user's GPS device receives signals from satellites operated by the U.S. government, and uses that information to calculate the user's position and time.

(Image from <http://www.gps.gov/systems/gps/>)

WHAT IS GPS?

The Global Positioning System (GPS) is a U.S.-owned utility that provides users with positioning, navigation, and timing (PNT) services.

This system consists of three segments:

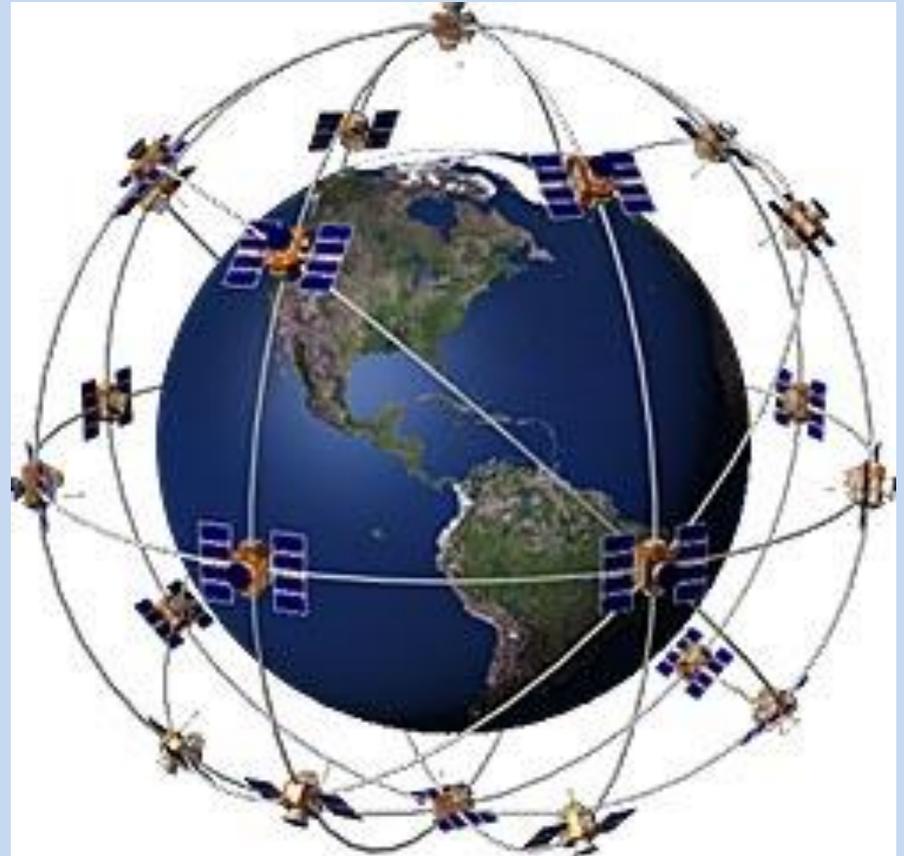
- the space segment
- the control segment
- the user segment

The U.S. Air Force develops, maintains, and operates the space and control segments.

GPS technology is now in everything from cell phones and wristwatches to bulldozers, shipping containers, and ATM's.

GPS Space Segment

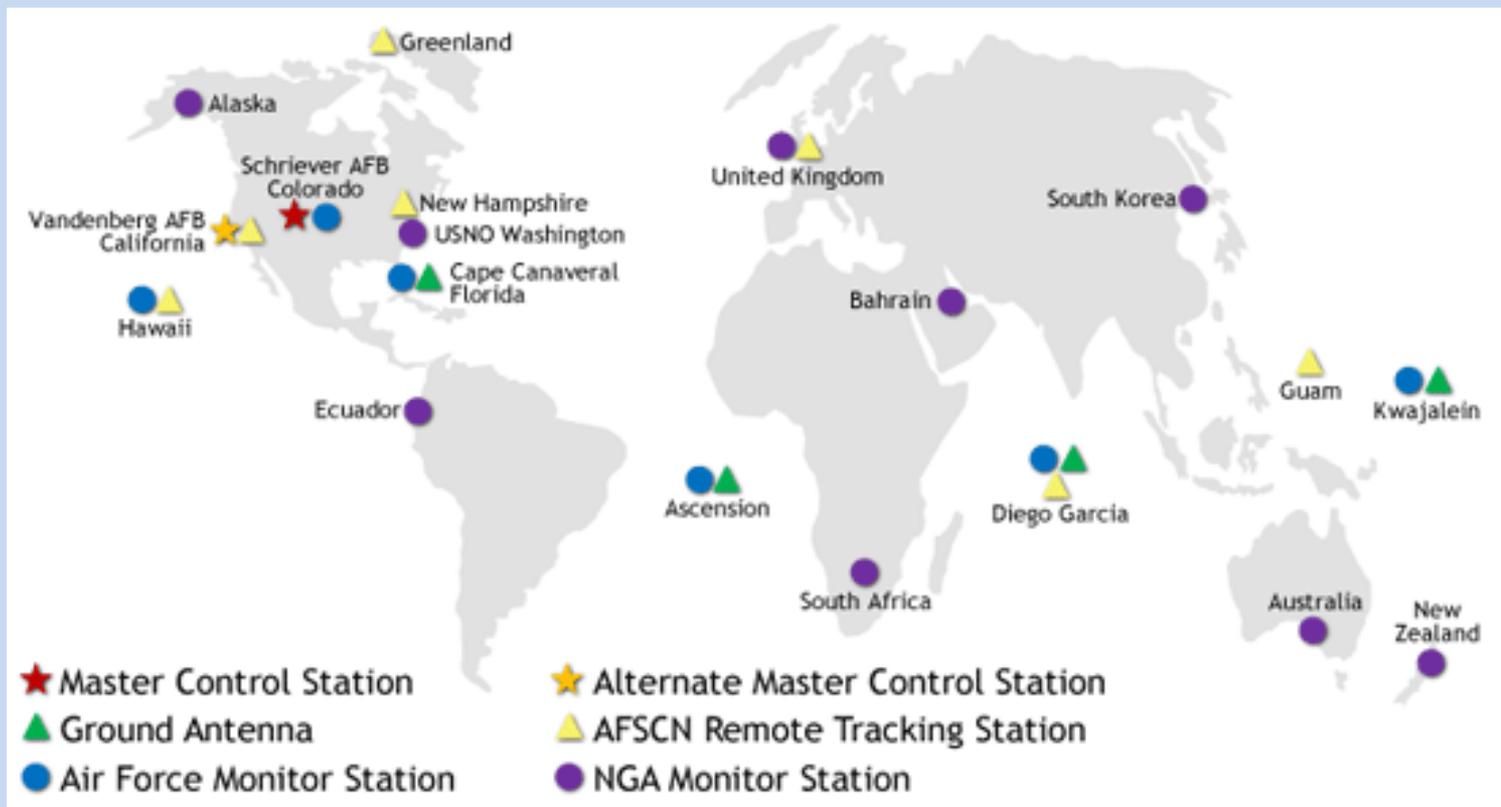
- A satellite-based global positioning system.
- It uses **distance measurements** to determine locations in 3-dimensional space.
- Typically it uses data from 4 different satellites that are part of a 24-satellite constellation.



(Slide courtesy of Dr. Xingong Li
KU Department of Geography)

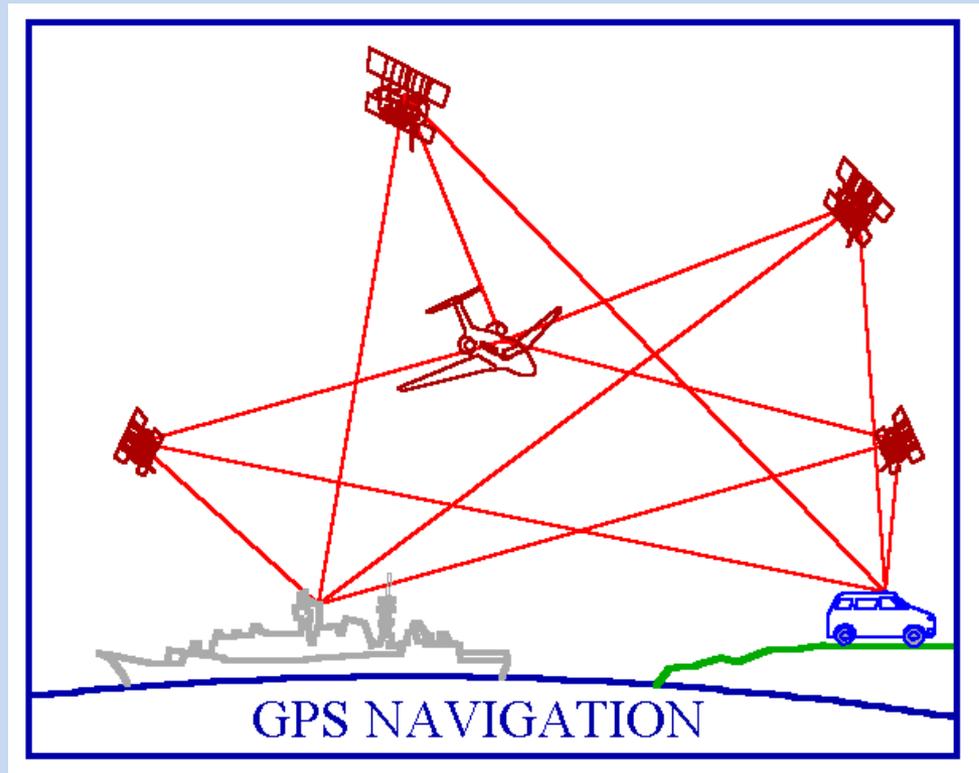


GPS Control Segment



GPS User Segment

GPS receivers record data transmitted by satellites and process the data to obtain position



(Slide adapted from Dr. Xingong Li
KU Department of Geography)

Report Latitude and Longitude on WWC-5 using Decimal Degrees

- Report Latitude and Longitude in Decimal Degrees
 - Decimal Degrees (DD.dddd) **REQUIRED for KOLAR**
 - 35.7722°
 - Degrees, Minutes, and Seconds (DMS)
 - 35° 46' 20"
 - Degrees, Decimal Minutes(DM.mm)
 - 35° 46.3333'
- To convert between styles:
 - DMS \leftrightarrow DD (You cannot just move the decimal!)
 - [LEOWEB](http://chasm.kgs.ku.edu/ords/f?p=120418) conversion program on the KGS Website:
<http://chasm.kgs.ku.edu/ords/f?p=120418>
 - Decimal Degrees = Degrees + Minutes/60 + Seconds/3600
 $35 + 46/60 + 20/3600 = 35.7722^\circ$
 - **OR, Divide seconds by 60, add the result to minutes and divide the sum by 60, then add the total to the degrees.**
 - Conversion program from FCC: <https://www.fcc.gov/media/radio/dms-decimal>
-  Set your GPS unit to display Decimal Degrees

Handheld GPS units



- Come in a variety of sizes and styles

(Images from Garmin.com website)

Using GPS to Collect Latitude & Longitude for WWC-5s

- On your GPS, change your Settings to display **DECIMAL DEGREES** using your Menu > Options.
- Note your **HORIZONTAL DATUM**: check settings or user manual, **most default to WGS 84**.
- Google Earth uses WGS 84.
- KGS online data are all in NAD 27; for consistency all coordinates are converted to NAD 27 from datum submitted. Water well records on KGS website also show coordinates as originally submitted by the driller.

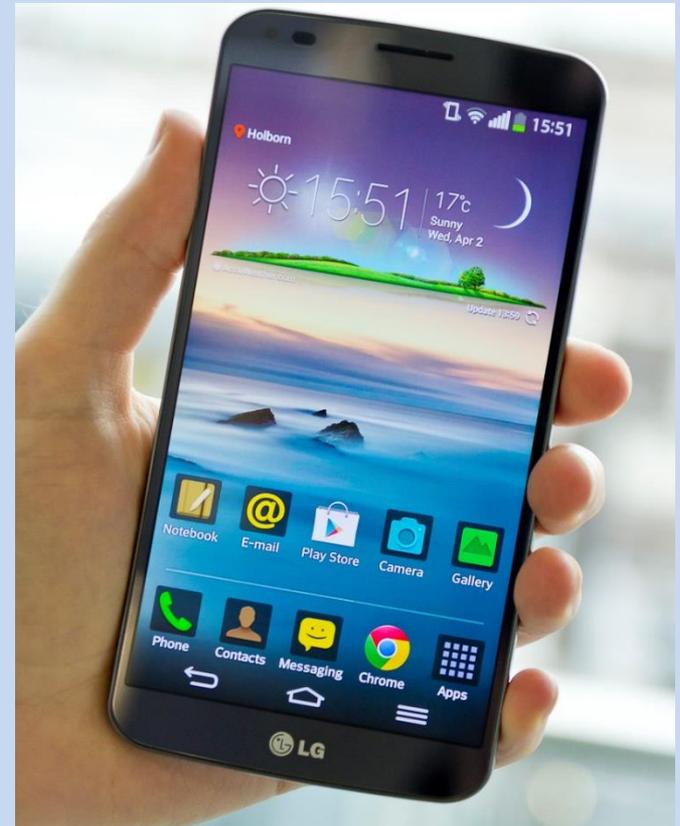
If you have a Garmin GPS unit, their instructions say:
“Position Format Settings”

- “From the app drawer, select **Setup > Position Format**
- **Position Format:** Sets the position format in which a location reading appears.
- **Map Datum:** Sets the coordinate system on which the map is structured.
- **Map Spheroid:** Shows the coordinate system the device is using. The default coordinate system is WGS 84. 

(Instructions copied from Garmin Oregon 700 Series Owner’s Manual)

Mobile Phone App

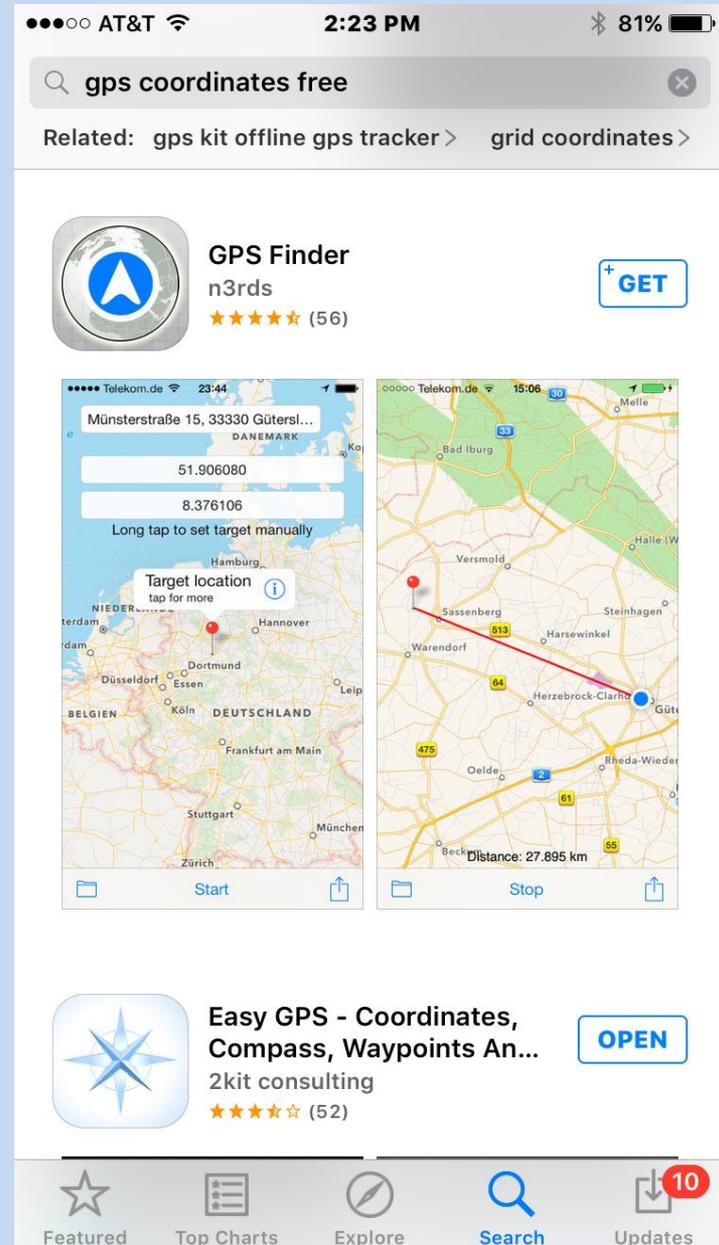
- Software applications for smartphones and tablet computers.
- Many apps available. Some free, others minimal fee.
- Good accuracy if satellite coverage available. Find one that displays accuracy, and then monitor and record it when taking a reading.
- Satellites, instead of cell phone tower relays.
- Email coordinates and/or store them.
- **Read Settings, Help and FAQ pages for best results.**
- **Adjust settings.**
- Verify location by entering Latitude and Longitude to Google Earth, Find Latitude Longitude, or on KOLAR.



- They can drain your battery – carry a charger, or turn off the location function when not using.

Mobile Phone Apps - Finding a program

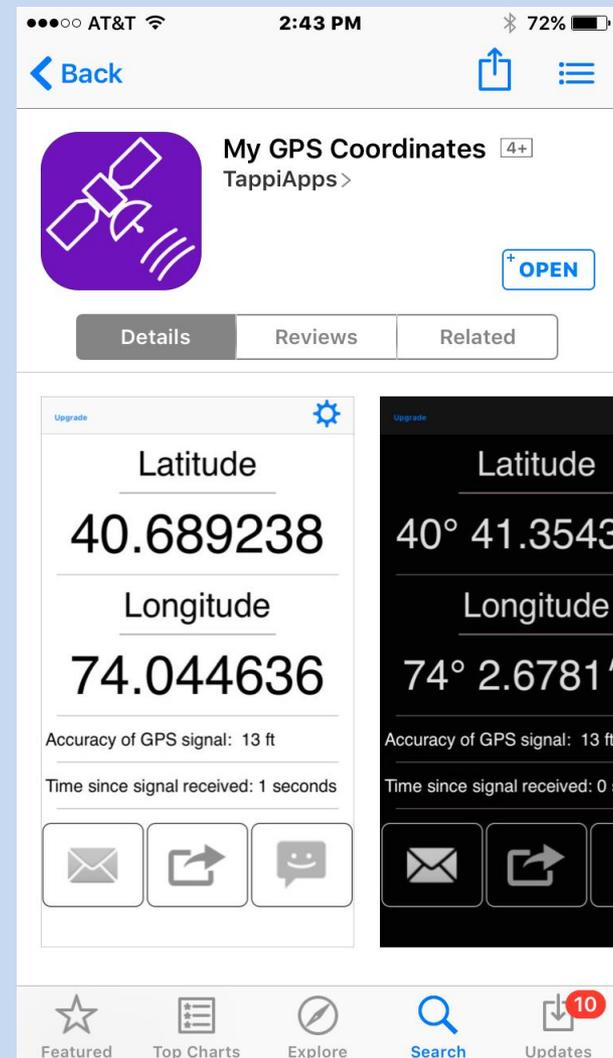
- On App Store go to Search, for example “GPS Coordinates Free”
- Tap an App in search results to view details, scroll sideways and down
- Purpose of App
- Date of updates
- Read reviews
- Download & Install



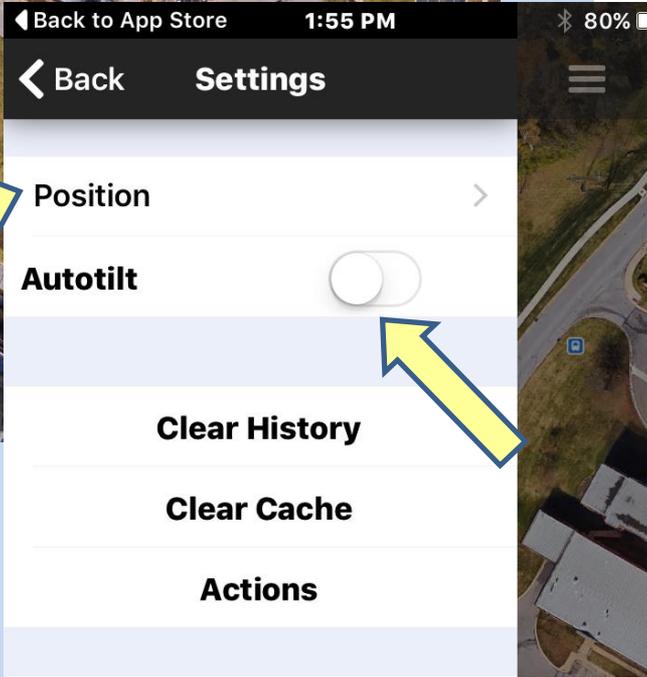
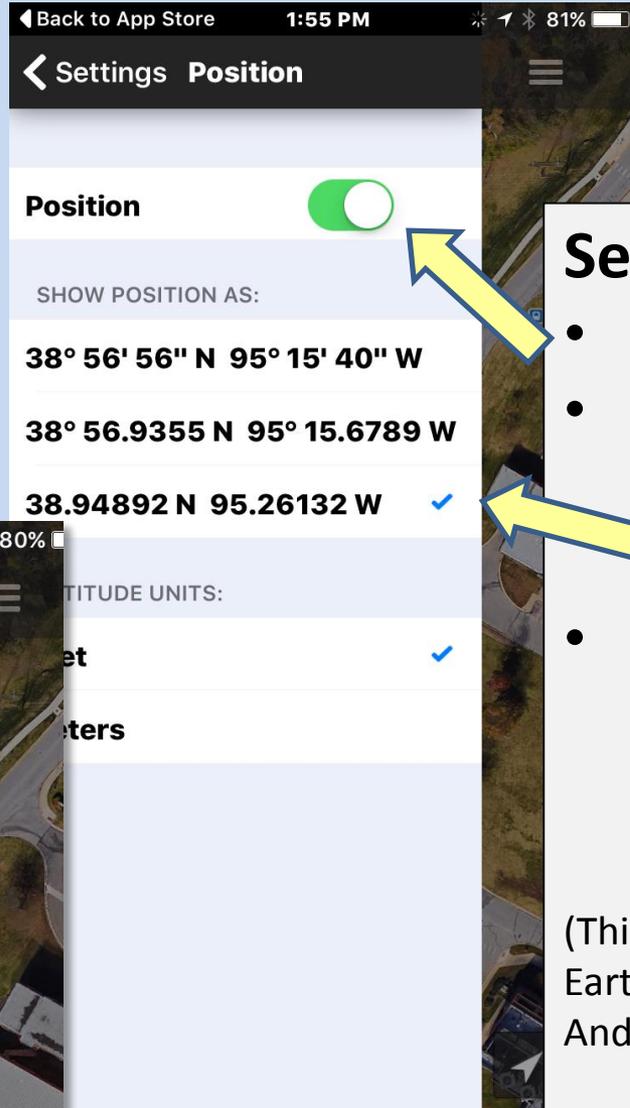
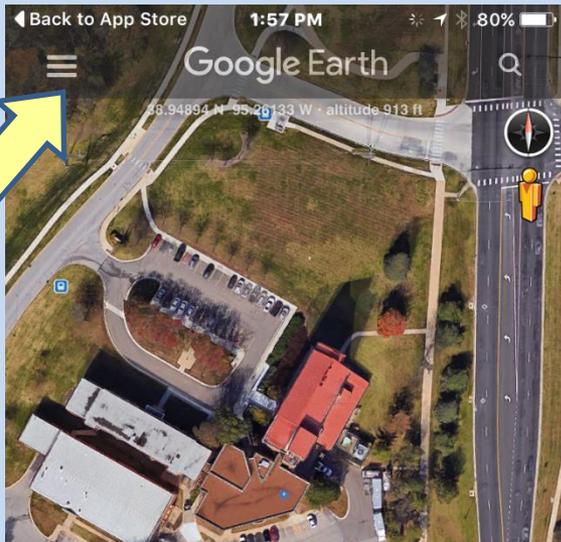
Mobile Phone Apps

- Read Details, Help, Settings, etc.

- Tap an App in search results to view details, scroll sideways and down,
- Open App information on your computer to get a comprehensive view.
- Check settings, (three bars).



Q Which Datum is used?
A WGS 84



Settings:

- **Position > ON**
- **Choose Decimal Degrees**
- **Turning Autotilt OFF is helpful**

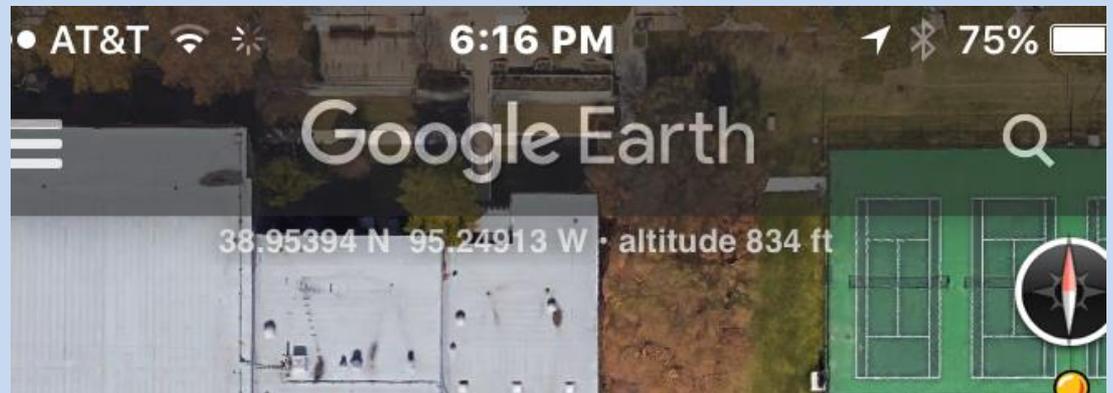
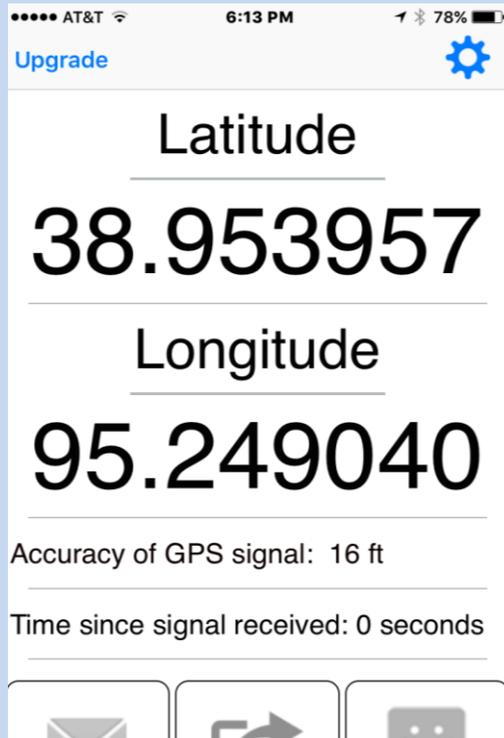
(This example is Google Earth on an I-Phone. Android phones)

3-Bar Icon > Layers > Settings > Position

Smart Phone App's vs. GPS



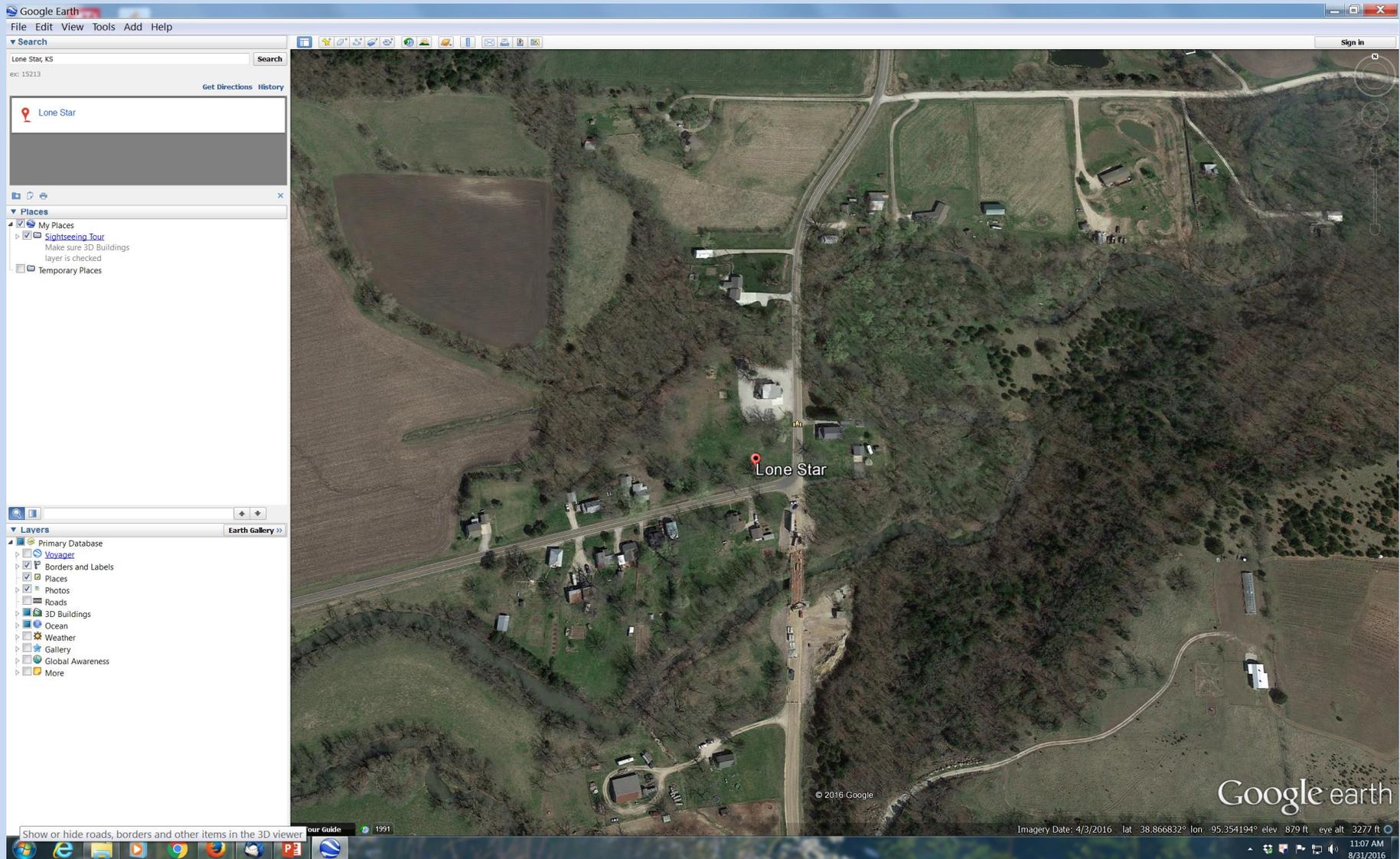
	Latitude	Longitude
Google Earth I-Phone	38.95394	95.24913
My GPS Coordinates	38.953957	95.249040
Garmin GPS 12XL	38.95399	95.24912



5 decimal places accurate to about one meter

(tappiapps.com)

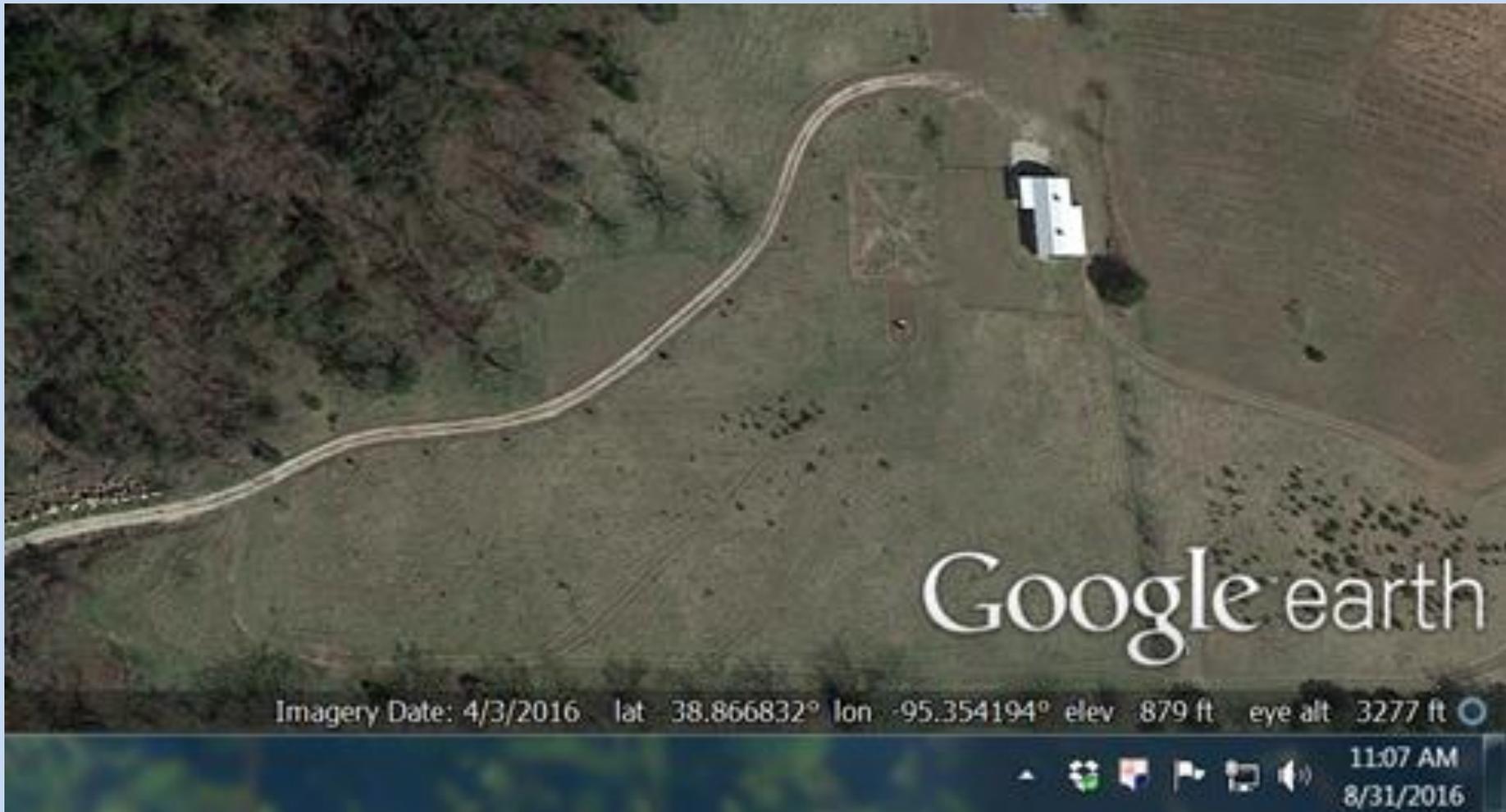
Google Earth



Uses WGS 84

<https://www.google.com/earth/>

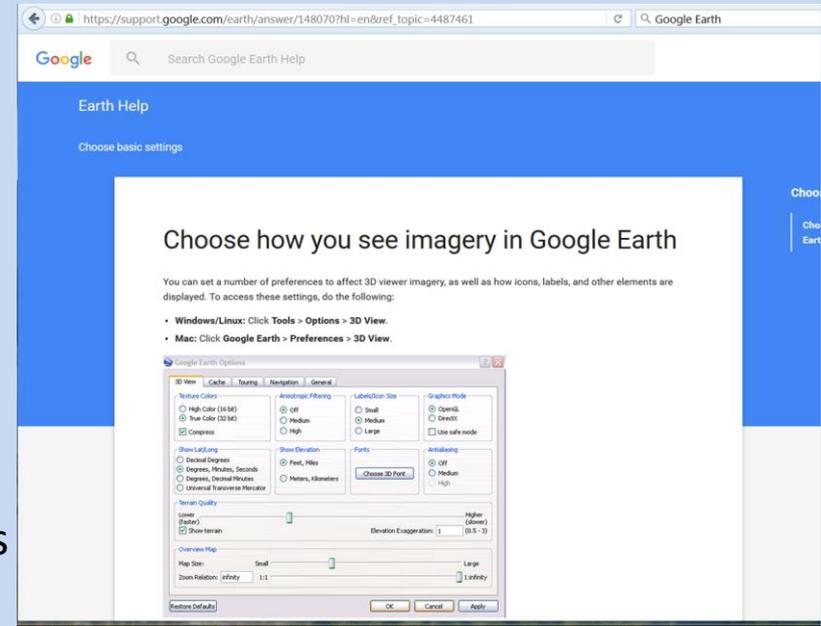
Lat/Long shown in lower right of screen



Note that the settings display lat/long in decimal degrees

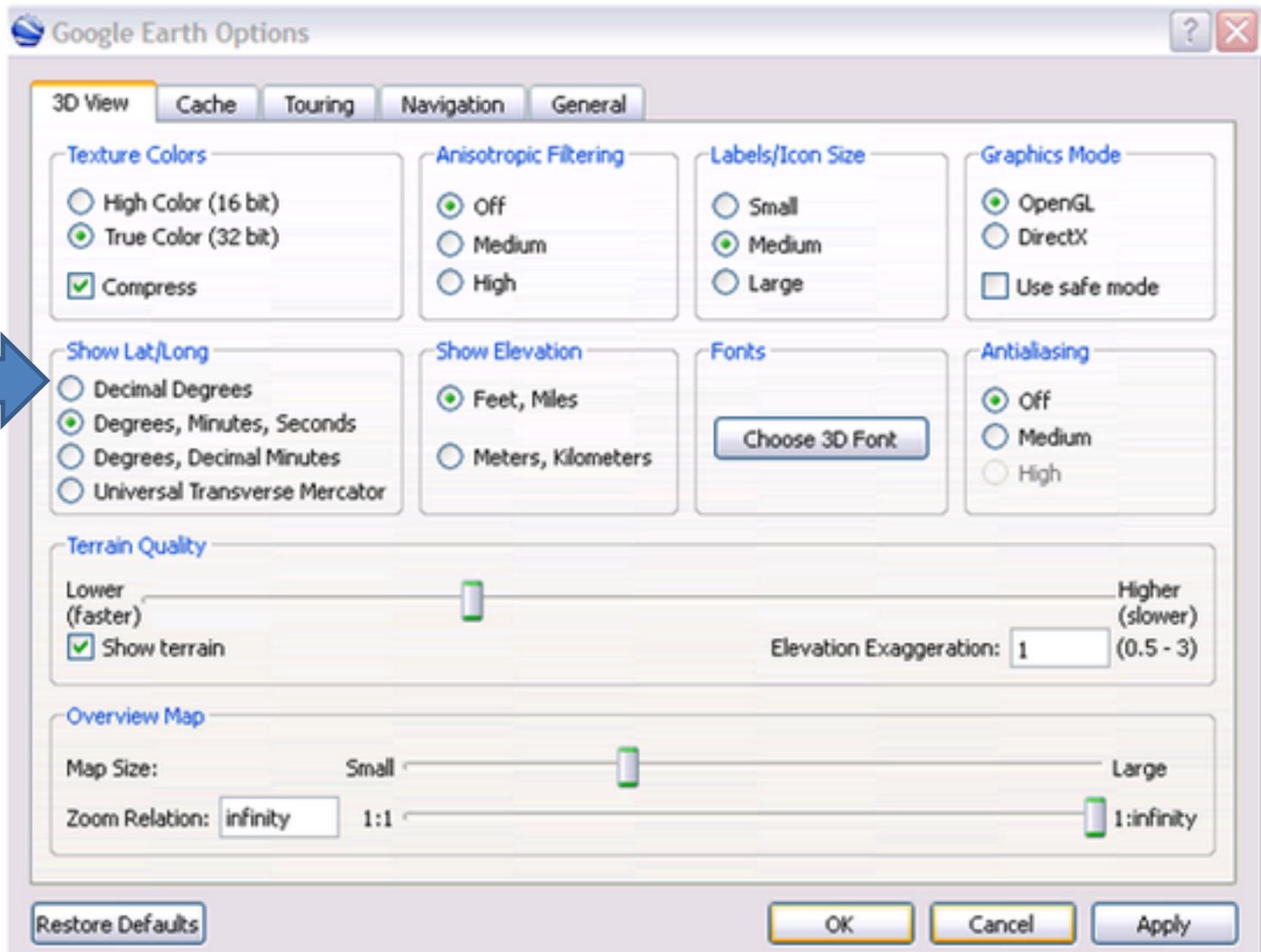
Tips for Using Google Earth on your Computer

- <https://www.google.com/earth/>
- Google Earth uses datum WGS 84
- Change Display to Decimal Degrees:
 - Click Tools Tab > Options > 3D View
 - Show Lat/Long: select >Decimal Degrees
- Stop Tilt when Zooming:
 - Click Tools Tab > Options > Navigation
 - Navigation: select >Do Not Automatically
 - Tilt While Zooming
- Zoom to a Location: enter Latitude, space, –Longitude (as a negative value) in the Location Search Bar to verify a location.
- If coordinates (latitude & longitude) are collected from Google Earth and submitted on KOLAR or a WWC-5, report WGS 84 as the Horizontal Datum.



Google Earth Preferences

- **Windows/Linux:** Click **Tools > Options > 3D View**.
- **Mac:** Click **Google Earth > Preferences > 3D View**.



Data Resources Library, Kansas Geological Survey



Questions? Need help?

Data Resources Library at the Kansas Geological Survey:

- Open 8-12 and 1-5 Monday to Friday
- Phone: 785-864-2161
- Email: datares@kgs.ku.edu
- Seminar presenters:
Dan Suchy and Deb Stewart

Kansas Geological Survey Website:

- <http://www.kgs.ku.edu>

Water Well Completion Form (WWC-5)
Database with Interactive Mapper:

- <http://www.kgs.ku.edu/Magellan/WaterWell/index.html>

Selected References

- Coordinate Systems Overview - University of Colorado
<http://www.colorado.edu/geography/gcraft/notes/coordsys/coordsys.html>
- Geodetic Datum Overview - University of Colorado
Boulder<http://www.colorado.edu/geography/gcraft/notes/datum/datum.html>
- GPS.gov (Official U.S. Government information about the Global Positioning System (GPS) and related topics)
<http://www.gps.gov/systems/gps/>