



Kentucky Water Well Drillers Newsletter

An Occasional Publication of the Groundwater Section
of the Watershed Management Branch
Kentucky Division of Water
Department of Environmental Protection
Energy and Environment Cabinet



Special points of interest:

2013 KYGWA Well Drillers Tradeshow and Workshop

New Variance Forms

Memorandum of Agreement between DOW and DOP

Wells vs Piezometers

New Variance Requirements

New GPS Forms Decimal Degree on water.ky.gov

Water Well Drilling News and Trends

Water and water resources are undergoing a transformation in this country, and any water well drilling service should pay attention to current news and trends that affect their industry. Geothermal and environmental drilling are other fast-growing trend that offers new opportunities for water well drilling companies. Recent droughts have made water wells more appealing to homeowners, farmers and public utilities. There are several national organizations that can pinpoint other trends, as well.

You can find news about everything from water well drilling rigs to well drilling tools and supplies like pumps and bits from well drilling news sites, to what's happening in portable water well drilling, groundwater assessments, and more.

Look for: Magazines and other publications geared to water well drilling facilities. Organizations and groups that support well owners and water well drilling service, too. Environmentally friendly water well drilling equipment for a new decade of water well drilling trends.

Keep up to date with your training and certifications. Our Website is being updated to include more information for well drillers and the general public. In the near future we will begin posting minutes from the water well drillers certification board meetings, new forms have already been posted to the site. More revised forms are to come in the future. We have added available training information to the website. You will be able to renew your certification on line again this year. A new drillers map is being added to the website along with a new certified drillers directory.

News about the proposed certification of geothermal drillers will be posted to the website as it becomes available. The Kentucky website for water well drilling can be found at:

<http://water.ky.gov/groundwater/Pages/WellDrillersProgram.aspx>

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Water Well Driller Certification Program Coordinator's Note



Don't Forget
the 2013 Kentucky
Ground Water Asso-
ciation Tradeshow
and Drillers Work-
shop, February 28th
and March 1st 2013 !!



The last few months have been very busy for me here at the Division of Water. You would never know there is a bad economy working around here. There always seems to be something going on to keep me busy. In the last several months I have been in the field as much as I am in the office. I have video logged wells, responded to well owner complaints about their wells and the water quality they get from them. I have dealt with drought issues and contamination issues. I assisted with the emergency response to local disasters, been to two water well drillers board meetings and fielded daily calls and emails from drillers with problems and requesting variances.

So, please forgive me if I do not return your calls as timely as you expect. I will get back to you as soon as humanly possible.

The Water Well Drillers Certification Board has been quite busy and had to deal with several issues as of late. This newsletter will address many of their decisions in regard to these matters. The board has been moving forward with an attempt to require certification of geothermal drillers and is receiving wide support in amending the water well drillers statute and regulation. A bill has been submitted to the Legislature in the 2013 session of the Kentucky General Assembly.

Variance request forms have been updated and added to the website for your use. If you do monitoring well drilling for the UST Branch of the Division of waste Management you will find several of the articles of use.

If you drill a well using method that leaves no annular space around the well casing such as sonic or reverse rotary drilling methods check out the new variance requests articles and forms. A new decimal degree GPS form has been placed on the drillers webpage.

The next KYGWA Tradeshow and Drillers Workshop is slated for February 28th and March 1st 2013, in Louisville, Ky. The WWDCB will meet Thursday morning.

Volunteers Needed for Well Site Field Audits

Scotty Robertson began conducting field audits of water and monitoring well drillers this quarter. One audit has been completed thus far. These field audits are not intended to be regulatory inspections. The primary purpose is to

observe the well drilling operations and to address any problems the driller may have related to the certification program.

Mr. Robertson is seeking volunteers to be audited. If you would like to volunteer to be audited please contact him if you would like to schedule a time to meet at your well site.

You may contact Scotty Robertson at 502-564-3410, ext. 4943, or e-mail

scotty.robertson@ky.gov

Variance Requests

The ***Blanket Variance*** was developed for monitoring wells installed by direct push methodologies and for wells installed around underground storage tank sites, where there are sometimes special installation requirements. Direct push and temporary wells meet the conditions specified in the blanket variance.

Monitoring wells installed in unconsolidated material <30(less than thirty-) feet thick also fall under this criteria, regardless of construction method. For these well conditions, no other justification is required.

The blanket variance letter will serve as justification if the well meets the criteria outlined in it. However, shale and weathered rock do not constitute unconsolidated materials. Unconsolidated materials consist of soil, regolith, sand, silt, and clay and combinations of these materials.

If you are working for, or under contract with, the Division of Waste Management's (DWM) including the Underground Storage Tank Branch (USTB), if the site has received a No Further Action (NFA) letter, then the NFA letter itself is regarded as written approval to abandon the monitoring well only.

This does not mean it will get automatic approval upon submitting the variance request. The NFA letter simply relinquishes the USTB of its responsibility for the well. Abandonment of the monitoring well then falls under the purview of the Kentucky Division of Water (DOW) and its regulations. The USTB is then out of the game at this point and you must justify the variance to the DOW. Submitting a variance request to not over drilling a well just to save costs, is not a suitable reason for a variance request. Requests for a variance **Not** to over drill a well must have legitimate reasons. For example: obstructions overhead (like an overhead power-line) or near the well (like a sewer-line or new structure) are suitable reasons for a variance request.

If a UST site is active the USTB must be notified that wells are being abandoned. Only a written directive is viewed as appropriate USTB approval to abandon a well or perform another specific action. The USTB does not want wells taken out at an active site without their knowledge. For all other potential scenarios for which the USTB has failed to consider, written permission should be sought.

All monitoring well variance requests must include written **justification** for the variance request, a copy of the NFA letter and/or any directives in your possession. For active UST, solid waste, uncontrolled waste, or hazardous waste sites, preauthorization will be required by the USTB or by other appropriate branches of the Division of Waste Management to modify monitoring well abandonment from the regulations. This will be in the form of a written directive from USTB or other appropriate DWM branch stating that a over drilling the well or other procedures is not required. For all other types of sites not covered herein, the driller will need to prepare written justification for the variance request proving it is more protective of the groundwater than implementing the regulations for all instances other than those covered by the blanket variance.

Please continue to include all other documentation you are currently providing.

New variance request forms have been developed and placed on the driller's website: <http://water.ky.gov/groundwater/Pages/FormsApplications.aspx> for your use.



DATA REQUIREMENTS FOR A VARIANCE REQUEST Per 401 KAR 6:310 and 6:350

What is required to receive approval of a Variance Request? The variance request for water or monitoring wells, must be signed by the certified well driller and the property owner. These signatures must be obtained prior to submittal to the cabinet for approval. The certified driller must request the variance. A consultant can not submit a variance request unless he or she is a certified well driller. **NO** variance request will be approved if well installation, modification or abandonment procedure has already been started or performed.

Each variance request should include the following information:

1. A thorough description of the land use at the site and at adjacent and surrounding properties;
2. Distance between the proposed water or monitoring-well location and other existing water-supply wells or monitoring wells on adjacent properties;
3. Distance between the proposed water or monitoring-well location and potential pollution sources, both on site and on adjacent properties, including septic systems, sewers, petroleum and chemical storage tanks, or other potential pollution sources;
4. A description of the geologic conditions expected at the site, including soil thickness, type of bedrock, if present, perched water, confining zones, and depth to groundwater;
5. A summary of the provisions, including the section numbers of this administrative regulation, for which the variance is requested;
6. A justification for the variance; and
7. Proposed construction, modification, or abandonment procedures to be used in lieu of compliance with this administrative regulation and an explanation as to how the alternate well construction procedures ensure the protection of the quality of the groundwater and the protection of public health and safety."
8. Well AKGWA Numbers for each well if available
9. Ky Uniform Well Construction Records or Construction logs if available

The variance requests can be sent in via mail, fax or email to:

**Scotty Robertson
Groundwater Section
Watershed management Branch
Kentucky Division of Water
200 Fair Oaks Lane
Frankfort, KY 40601
Fax # 502-564-9636
Phone # 502-564-3410**

Scotty.robertson@ky.gov

New variance request forms have been developed and placed on the driller's website: <http://water.ky.gov/groundwater/Pages/FormsApplications.aspx> for your use.



VARIANCE REQUEST FOR A MONITORING WELL DRILLER TO ABANDON A WATER WELL

The Underground Storage Tank Branch's new risk based site closure procedures allow for the abandonment of a domestic use well as a remedial measure in cleaning up a site.

In response to this, the Division of Water (DOW) will approve a one-time variance request to abandon a water well to a certified monitoring well driller under these circumstances. Upon granting this one time use of a variance, the monitoring well driller will not be approved to abandon other water wells under these circumstances without becoming certified as a water well driller for a period of three (3) years from the date of the original variance. Exception to this rule will be evaluated on a case by case basis.

New variance request forms have been developed and placed on the driller's website: <http://water.ky.gov/groundwater/Pages/FormsApplications.aspx> for your use.

Friendly and Helpful Links for Drillers

The link to the Water Well Owners Guide is <http://dep.ky.gov/formslibrary/Documents/GWWaterWellOwnersGuide.pdf>

Please remember to give your water well customers a copy of the guide when you give them your bill.

New or updated **Well Reporting forms** are now available at <http://water.ky.gov/groundwater/Pages/FormsApplications.aspx>

The link to the Kentucky Geological Survey <http://www.uky.edu/KGS/> Groundwater Protection Plans and Generic Wellhead plans are available on the Groundwater Section's Web site at:

<http://water.ky.gov/groundwater/Pages/GroundwaterProtection.aspx>



Where Drilling Ends and Plumbing Begins

Recently the Board has had to address issues of where drilling ends and plumbing begins. Problems in addressing this grey area required the Division of Plumbing (DOP) and the Division of Water (DOW) to come to an agreement on how these matters should be handled.

The area involved is the installation of the water supply line from the wellhead to the expansion tank. Whose responsibility is it? Is it the driller who is often responsible for installing the expansion tank, pump-line, and pressure switch as part of the well construction, or is it the plumber, who by law is responsible for installing the water supply line from the wellhead to the residence?

The consensus that has been arrived upon is that the driller can install the water supply line from the wellhead to the **inlet side** of the expansion tank. It does not matter if the expansion tank is located at the wellhead, in the residence, or somewhere in between.

If the expansion tank is located at the wellhead, then the driller is allowed to come off the outlet side of the expansion tank, but only to install water line to a **frost-free post hydrant**, that must be installed with a **double check valve**, in order to collect a groundwater sample.

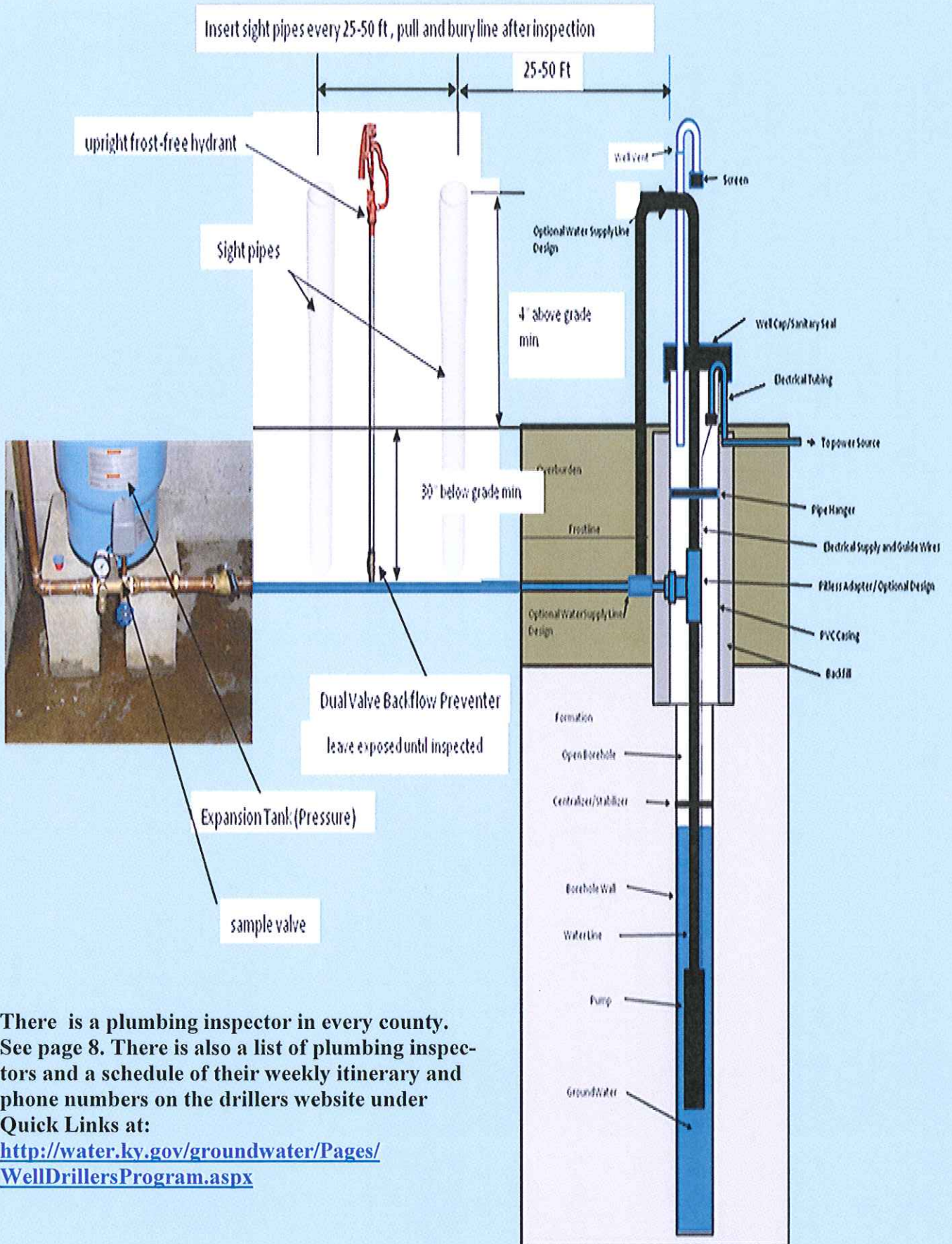
If the expansion tank is located in the residence, the driller must do the following:

- 1) the double check valve, frost free post hydrant, or a spigot must be installed on the water supply line **between** the wellhead and the inlet side of the expansion tank.
 - 2) The water supply line must be installed a minimum of **30 inches** below the ground surface in order to meet DOP requirements.
 - 3) The driller **must contact the local plumbing inspector** to inspect the waterline before he closes it up.
 - 4) If the driller **buries** the water line before it is inspected, he/she **must install sight-pipes at intervals that do not exceed 50 feet** in order for the line to be properly inspected. DOP requests that the writings on the water line face up, and that 4 inch diameter, ridged wall PVC be used as the sight-pipes.
- Note: electrical lines from pump to residence can be run in same trench as water line.

DOP will inspect the water line at their earliest convenience, usually same day service, at no charge to the driller or the homeowner. There is a plumbing inspector in every county (see page 12), and there is also a list of plumbing inspectors and a schedule of their weekly itinerary and phone numbers on the drillers website under **Quick Links** at:

<http://water.ky.gov/groundwater/Pages/WellDrillersProgram.aspx>





There is a plumbing inspector in every county. See page 8. There is also a list of plumbing inspectors and a schedule of their weekly itinerary and phone numbers on the drillers website under Quick Links at: <http://water.ky.gov/groundwater/Pages/WellDrillersProgram.aspx>

Adair	001	Benningfield	Knott	060	Rodney Adams
Allen	002	Cochran	Knox	061	Cornelius
Anderson	003	Green	Larue	062	Haycraft
Ballard	004	Bundy	Laurel	063	Phelps
Barren	005	Cochran	Lawrence	064	Godsey
Bath	006	Havrilesko	Lee	065	Nolan
Bell	007	Cornelius	Leslie	066	Nolan
Boone	008	Stein	Letcher	067	Rodney Adams
Bourbon	009	Havrilesko	Lewis	068	Perkins
Boyd	010	Wheeler	Lincoln	069	Lawrence
Boyle	011	Lawrence	Livingston	070	Bundy
Bracken	012	Perkins	Logan	071	Hayden
Breathitt	013	Nolan	Lyon	072	Jordan
Breckinridge	014	Maeser	McCracken	073	Bundy
Bullitt	015	Shulthise	McCreary	074	Wiese
Butler	016	Maeser	McLean	075	Beaven
Caldwell	017	Dorris	Madison	076	Noble
Calloway	018	Stevenson	Magoffin	077	Godsey
Campbell	019	T. Boone	Marion	078	Lawrence
Carlisle	020	Bundy	Marshall	079	Hardin
Carroll	021	Kapfhammer	Martin	080	Ricky Adams
Carter	022	Centers	Mason	081	Perkins
Casey	023	Lawrence	Meade	082	Haycraft
Christian	024	Jordan	Menifee	083	Godsey
Clark	025	Havrilesko	Mercer	084	Wimsatt
Clay	026	Cornelius	Metcalfe	085	Benningfield
Clinton	027	Stearns	Monroe	086	Benningfield
Crittenden	028	Shocklee	Montgomery	087	Centers
Cumberland	029	Stearns	Morgan	088	Godsey
Daviess	030	Thomas	Muhlenberg	089	Shocklee
Edmonson	031	Cochran	Nelson	090	Wetzel
Elliott	032	Godsey	Nicholas	091	Havrilesko
Estill	033	Noble	Ohio	092	Shocklee
Fayette	034	Washington / Corn Czarnecki	Oldham	093	Kapfhammer
Fleming	035	Perkins	Owen	094	Nevels
Floyd	036	Ricky Adams	Owsley	095	Nolan
Franklin	037	Green	Pendleton	096	Perkins
Fulton	038	Stevenson	Perry	097	Nolan/Rodney Adams
Gallatin	039	Nevels	Pike	098	Ricky Adams
Garrard	040	King	Powell	099	Havrilesko
Grant	041	Nevels	Pulaski	100	Wiese
Graves	042	Stevenson	Robertson	101	Perkins
Grayson	043	Maeser	Rockcastle	102	Phelps
Green	044	Benningfield	Rowan	103	Centers
Greenup	045	Centers	Russell	104	Stearns
Hancock	046	Maeser	Scott	105	Lewis
Hardin	047	Atkins/Haycraft	Shelby	106	Wimsatt
Harlan	048	Cornelius	Simpson	107	McPherson
Harrison	049	Lewis	Spencer	108	Wimsatt
Hart	050	Cochran	Taylor	109	Benningfield
Henderson	051	Beaven	Todd	110	Shocklee
Henry	052	Kapfhammer	Trigg	111	Jordan
Hickman	053	Stevenson	Trimble	112	Kapfhammer
Hopkins	054	Dorris	Union	113	Beaven
Jackson	055	Phelps	Warren	114	McPherson - Wyatt
Jefferson	056	Haeberlin/Dick/Hilpp/Beeler Randle/Bishop	Washington	115	Wetzel
Jessamine	057	Czarnecki	Wayne	116	Stearns
Johnson	058	Godsey	Webster	117	Dorris
Kenton	059	Sustarich	Whitley	118	Cornelius
			Wolfe	119	Nolan
			Woodford	120	Green

Plumbing Inspectors by County

Governor urges citizens to protect groundwater

Groundwater protection begins at home

FRANKFORT, Ky. (Sept. 11, 2012) – Governor Steven Beshear has proclaimed Sept. 11 as “Protect Your Groundwater Day” in the Commonwealth of Kentucky to draw attention to the importance of preventing contamination and waste of this valuable resource.

Individuals can take action to protect groundwater by recognizing the causes of preventable groundwater contamination, advised Sandy Gruzsky, director of the Kentucky Division of Water, which is charged with protecting the Commonwealth’s groundwater resources.

“More than 900,000 people in Kentucky draw all or part of their domestic-use water from groundwater supplies and use more than 200 million gallons a day,” said Gruzsky. “It is important that we learn how to protect our groundwater.”

Most household water use occurs in a few areas around the home where potentially hazardous substances such as fertilizers and pesticides are often used. Homeowners with a water well should ensure wellheads are a safe distance from possible contamination. They should also contact a professional water well specialist to schedule annual well system inspections and to properly decommission any abandoned wells. An improperly sealed well can be a direct pathway for contamination into an aquifer. Nothing should ever be disposed of down an abandoned water well.

Septic system malfunctions also can pollute groundwater. Septic systems should be checked every one to two years, and pumped every three to five years by a professional contractor. Also, roof drains, sump pump drains and other rain or surface water drainage systems should be kept away from the septic absorption field. Flooding can keep the soil from naturally cleansing the waste water.

Everyone should properly use, store and dispose of hazardous household substances, including gasoline, oil, paint, paint thinner, fertilizer, weed killer, pesticides and cleaning products. Proper use of such substances means following the manufacturer’s instructions. Fertilizers, pesticides and weed killers should not be over-applied, nor should any such substances be mixed or applied near wellheads. Proper storage means keeping hazardous household substances in sealed containers in a secure place. Proper disposal of such substances means they should not be dumped on the ground, poured down drains or flushed down toilets. Homeowners should contact local waste authorities about proper disposal.



Kentucky Ground Water Association

P O Box 945

Mayfield, KY 42066

Phone: 270-247-6658

kygwa75@yahoo.com

Contact Melody Burgess to register for 2013 tradeshow and workshop

*****Contractors Membership Application*****

Name _____

Company _____

Address _____

City _____

State _____ Zip _____

Fax _____

Telephone _____

Email address _____

This membership is for 1 year. I would like to apply for: _____ Business Company \$100.00 (only 3 members per Co.) _____ Additional Company members \$25.00 each. _____ Individual \$75.00

Please enclose \$55.00 if you are a member of the KYGWA and \$90 if you are not a member. If you are not register 2 weeks (by February 14th, 2012) prior to the show, the cost for members will be \$65.00 and non-members is \$100.00.

Please send a name for each person you are registering from your company.

Name	Driller	Rig Operator

Don't forget you must have a name tag to be able to go through the Buffet lines. We have to have a head count, so everyone can eat. The cost of your spouse attending is \$30.00. Only SPOUSES!!!!

Note the fee charged for attending the workshop is not your driller certification fee!!!!

Continuing education training hours required for Kentucky well driller certification renewal can be attained at:

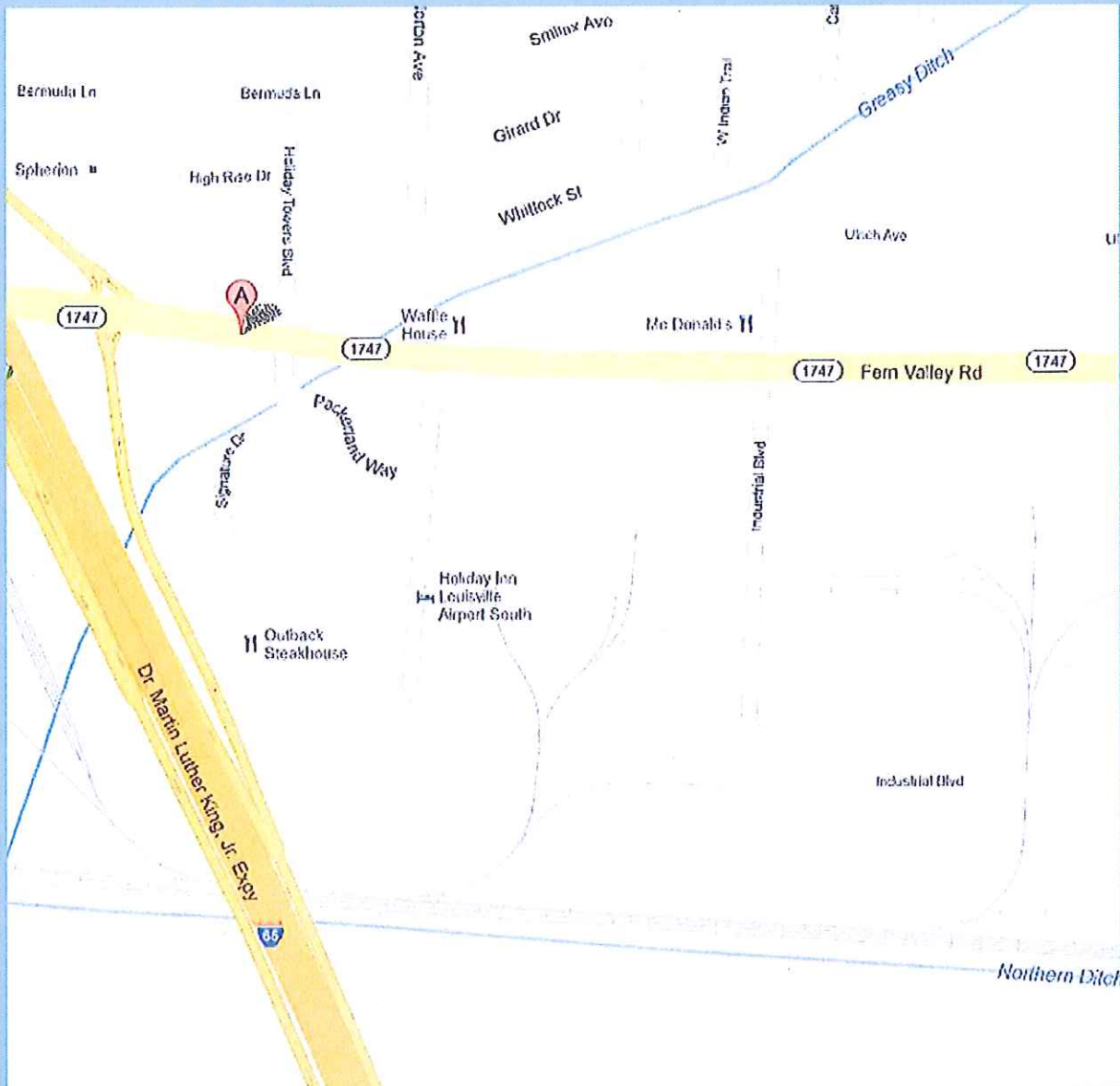
**The Kentucky Ground Water Association's (KYGWA)
2013 Annual Well Driller's Tradeshow and Workshop**

February 28, 2013 and March 1, 2013

Board meeting February 28th at 9:00 AM EST

Training Classes Begin 3:00 PM in the Conference Center on February 28th

Training Classes Begin 9:00 AM in the Conference Center on March 1st



Located directly off Interstate 65, Exit 128, Fern Valley Rd.

Minutes from downtown Louisville, Kentucky Fair and Exposition Center, and Churchill Downs.

Fern Valley Hotel & Conference Center

2715 Fern Valley Road

Louisville, KY 40213

Front Desk: 1 (502) 964-3311

Fax Number: 1 (502) 966-4874

GPS LOCATION FORM (DD)

WELL ID NUMBER (AKGWA) _____ - _____

WELL OWNER'S NAME _____

USGS TOPOGRAPHIC MAP NAME _____

Sit GPS unit near well, in a clear area away from buildings, your drill rig, power lines, dense tree cover, etc. to allow for more accurate readings. Turn on GPS unit and allow unit to sit for at least 5 minutes before collecting your first reading.

Using the GPS unit, record 1 reading per minute for 5 minutes and enter below:

LATITUDE (N°) Decimal Degrees	LONGITUDE (W°) Decimal Degrees
. °	- °
. °	- °
. °	- °
. °	- °
. °	- °

FOR OFFICE USE ONLY

Average for Latitude **N** _____ ° Average for Longitude **W** - _____ °

Well Driller's Name (Please Print) _____

Well Driller's State Certification Number _____ - _____ - _____

Well Driller's Signature _____

PIEZOMETER Vs. WELL

A **piezometer** is either a device used to measure static liquid pressure in a system by measuring the height to which a column of the liquid rises against gravity, or a device which measures the pressure (more precisely, the piezometric head) of groundwater at a specific point.

The first piezometers in geotechnical engineering were open wells or standpipes (sometimes called **Casagrande piezometers**) installed into an aquifer. A Casagrande piezometer will typically have a solid casing down to the depth of interest, and a slotted or screened casing within the zone where water pressure is being measured. The casing is sealed into the drill hole with clay, bentonite or concrete to prevent groundwater leaking to the surface. In an unconfined aquifer, the water level in the piezometer would be coincident with the water table. In a confined aquifer under artesian conditions, the water level in the piezometer indicates the pressure in the aquifer, which is not necessarily the water table. Piezometer wells can be much smaller in diameter than production wells, and a 5cm diameter standpipe is common.

In recent decades, piezometers have been developed which are pressure gauges of various types in durable casings which can be buried or pushed into the ground and which will measure the groundwater pressure at the point of installation. The pressure gauges can be vibrating-wire, pneumatic, or strain-gauge in operation. These piezometers are cabled to the surface where they can be read by data loggers or portable readout units, allowing faster and/or more frequent reading than is possible with open standpipe piezometers.

In the Kentucky Regulatory Statutes, (KRS), 223.400, a "Well" or "Water Well", is defined as meaning any excavation or opening in the surface of the earth that is drilled, cored, bored, washed, driven, jetted, or otherwise constructed, when the actual or intended use in whole or part of the excavation is the removal of water for any purpose, including but not limited to culinary and household purposes, animal consumption, food manufacture, use of geothermal resources for domestic heating purposes and industrial, irrigation, and dewatering purposes, but not including wells to be used for watering stock or for general farmstead use if the wells do not provide water for human consumption. Wells are tagged with AKGWA #s. Piezometers do not have to be tagged unless water is withdrawn from it for any purpose.



**In Memory of
Mr. Homer Pearson,**



Mr. Homer Pearson, 77, of Mayfield passed away Thursday, 8/23/12 at Lourdes Hospital. Mr. Pearson was the retired owner/operator of Pearson Well Drilling & Repair; a faithful member of West Broadway Baptist Church in Mayfield; the former President of Kentucky Water Well Association; a member of the National Water Well Association; and an avid sportsman who enjoyed his beagles. He is survived by his wife, Patricia Pearson; four sons, Terry (Claudia) Pearson of Sedalia; Gary (Sheila) Pearson of Wingo; Kevin (Alisa) Pearson of Mayfield; and Ed (Mary Ann) Richard of Mayfield; one daughter, Debbie (Danny) Young of Paducah; one sister, Iva Flood of Farmington; six grandchildren and 12 great-grandchildren. He was preceded by his four brothers, Aubert, Rufus, Emmett, and Milton Pearson; and his parents, Edward and Leone Brower Pearson. Services for Mr. Homer Pearson were held on Monday, August 27, 2012

Help Wanted

**Experienced
Top-head
Air Rotary
Drillers**

**Contact:
Kevin Moses**

kevin@mosesdrilling.com

Moses Drilling Company
153 Booger Hollow Road
Gray KY 40743
606.523.1215



<http://www.KentuckyUnbridledSpirit.com>

The Energy and Environment Cabinet does not discriminate on the basis of race, color, national origin, sex, age, religion or disability and provides, on request, reasonable accommodations including auxiliary aids and services necessary to afford an individual with a disability an equal opportunity to participate in all services, programs and

Got an Interesting or Funny Drilling Story or Picture you would like to Share? Then send it to scotty.robertson@ky.gov and you may see it