

# Kansas Radon Program Newsletter

Serving individuals certified in radon measurement, mitigation and laboratory services in Kansas.



**Kansas Radon Program**

**October 2014**

Sharing information of value with all participants. We plan periodic issues, and we welcome your suggestions, questions and requests in order to meet your needs and help us all provide quality radon risk-reduction services to the people of Kansas.

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- ✓ Enforcing Radon Law in Kansas
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# KANSAS RADON DATA OVERVIEW

## Radon Data – What Does KDHE Do with My Data?

What information can be obtained from the mandatory measurement and mitigation reports sent quarterly to the Kansas Department of Health and Environment (KDHE)? Both KDHE's Kansas Radon Program and the Kansas Environmental Public Health Tracking (EPHT) Program use the radon data to **look at long-term trends** across the state specifically to help the State of Kansas **meet goals concerning the reduction of lung cancer through preventable exposures**. A data table showing county by county data including total number radon tests, number of mitigations, and county level average radon result will be available in the near future at [www.kansasradonprogram.org](http://www.kansasradonprogram.org). Below are highlights from the 73,000+ radon test database covering all or part of 25 years.

### Measurement Data

| KS Measurement Statistics through June 2014  |       |
|--|-------|
| Gross Average Radon Value (pCi/L) 10/13-6/14 | 5.1   |
| Total Sample Count 10/13-6/14                | 11803 |
| Total Samples $\geq 4.0$ pCi/L 10/13-6/14    | 5029  |
| Total Samples $\geq 20.0$ pCi/L 10/13-6/14   | 307   |
| Max Radon Value 10/13-6/14                   | 317.8 |

Table 1: Oct 1, 2013 through June 30, 2014 radon measurement data KS Measurement Statistics through June 2014

### Kansas Totals

A **total of 11,803 radon measurements** were reported to KDHE from 10/1/2013 through 6/30/2014. **5,029 met or exceeded** the EPA Radon Action Level of **4.0 picocuries of radon per liter of indoor air pCi/L**; 43% of the total number of measurements. The **average** of the reported measurements was **5.1 pCi/L**. The **maximum** reported radon value during this time period was **317.8 pCi/L** in Riley County. Table 1 details this information. The measurement statistics for all Kansas counties is being updated and will be available at [www.kansasradonprogram.org](http://www.kansasradonprogram.org) in the near future.

### Focus on Counties with Larger Number of Results

**Eleven Kansas counties have 1000 or more radon measurements in the historical data base collected since 1989 which makes them more statistically reliable.** Figure 1 is an overview of the measurement activity in these counties in the years surrounding the mandatory certification and data reporting (began July 2011). **Year-to-year radon testing volume has been roughly consistent in the three years since mandatory data reporting began** and the data reported increased significantly once the requirement was in place.

## RADON DATA:

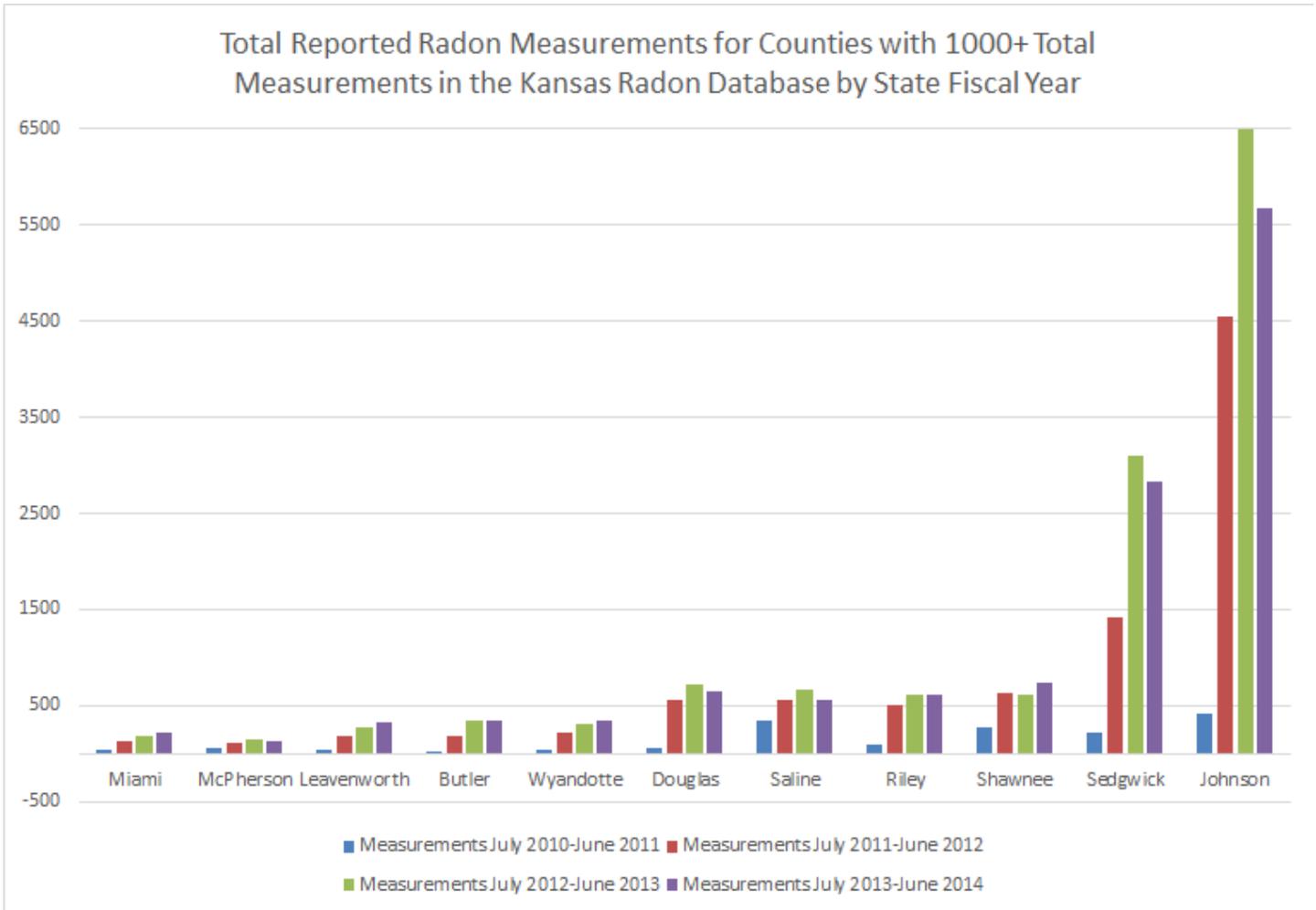


Figure 1: Total reported radon measurements for the 1-year period prior to mandatory certification and the 3-year period since mandatory certification for counties with 1000 or more measurements

## Mitigation Data

### *Kansas Totals*

A reported **total of 2,313 radon mitigation systems were installed** during 10/1/2013 through 6/30/2014. The **average reported initial radon value** for homes mitigated was **9.5 pCi/L**. The **average reported post-mitigation radon average** was **1.3 pCi/L**. Table 2 shows the total number of mitigations installed since mandatory certification and data reporting went into effect July 1, 2011, along with the 10/2013 – 06/2014 data. The total reported mitigation installations for all Kansas counties will be available in the near future at [www.kansasradonprogram.org](http://www.kansasradonprogram.org).

### *Focus on Counties with Larger Number of Results*

**Mitigation installation data was reviewed for the eleven Kansas counties with 1000 or more radon measurements.** Figure 2 is an overview of the mitigation activity in these counties in the years surrounding the mandatory certification and data reporting (began July 2011). **Year-to-year mitigation installation volume has been roughly consistent in the three years since mandatory data reporting began.**

## RADON DATA:

| KS Mitigation Data Since July 2011             |             |
|--|-------------|
| <b>Total Mitigations</b>                       | <b>9139</b> |
| <b>Average Starting Radon Value (pCi/L)</b>    | 9.5         |
| <b>Average Ending Radon Value (pCi/L)</b>      | 1.3         |
| <b>Total Mitigations During 10/13-6/14</b>     | <b>2312</b> |
| <b>Average Starting Radon Value 10/13-9/14</b> | 9.5         |
| <b>Average Ending Radon Value 10/13-9/14</b>   | 1.3         |

Table 2: Total reported radon mitigation system installations since July 2011 and total radon mitigation system installations for 10/13-6/14

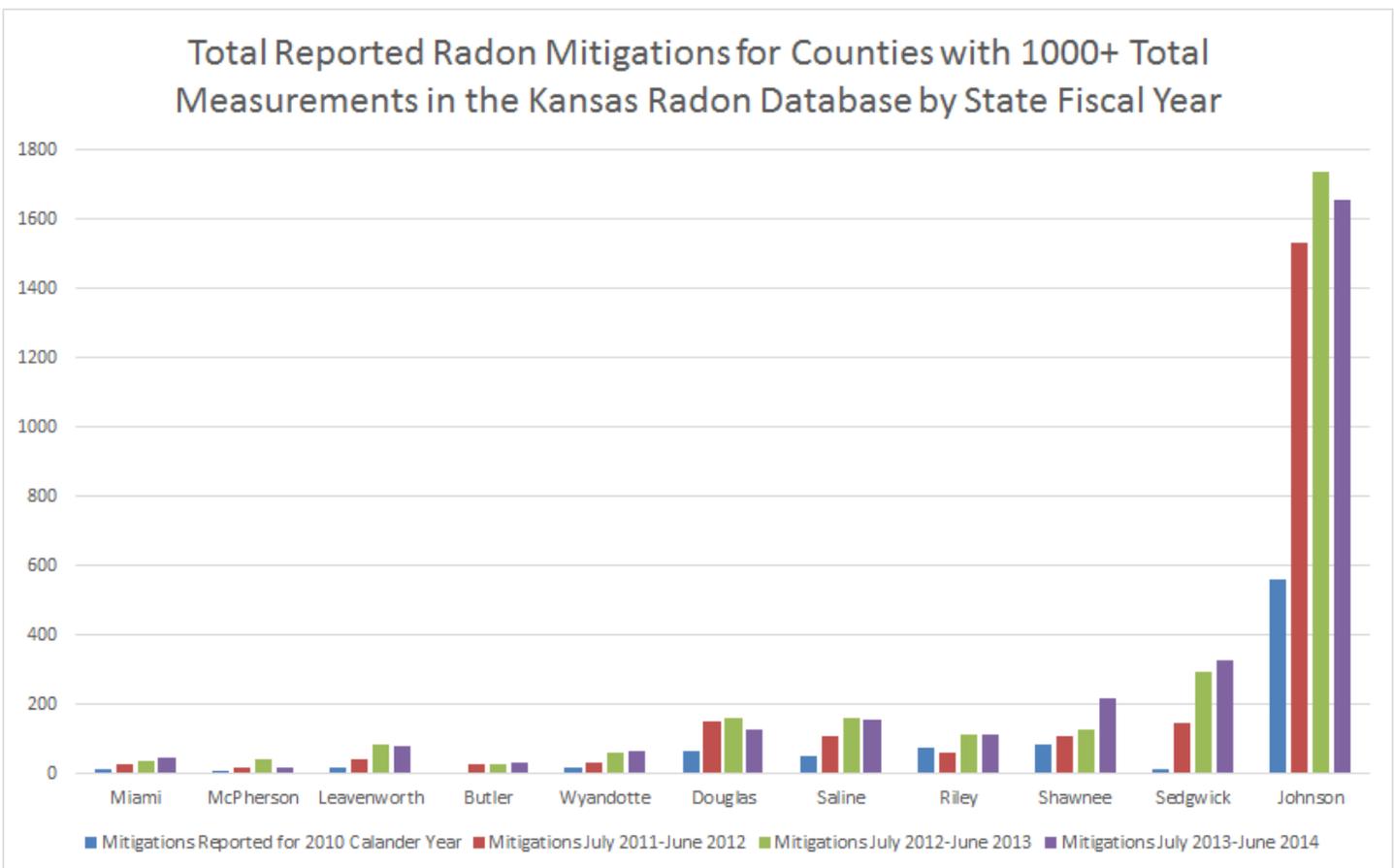


Figure 2: Total reported radon mitigations for the 1-year period prior to mandatory certification and the 3-year period since mandatory certification for counties with 1000 or more measurements

The county-by-county **data** which will be available soon will help **radon professionals see their efforts at work** in increasing testing and mitigations statewide as well as **highlighting areas where follow through from elevated results to mitigation is less common**. The Kansas Radon Program and EPHT Program will continue to use this data to educate our citizens on the need to test and mitigate and to **look at long-term trends across the state**.

# How To: Post Mitigation Testing

Many **radon mitigation technicians are not submitting all required radon data** on their mitigation data spreadsheet

**Both pre-mitigation and post-mitigation radon measurement results are required** reporting information for each mitigation system installed. If you are on the job to install a mitigation system, chances are there is a pre-installation radon measurement that brought you there; obtain that information as well as follow up testing.

## *EPA Radon Mitigation Standards 17.4:*

Upon completion of radon mitigation work, a test of mitigation system effectiveness shall be conducted using an RMP listed test device and in accordance with EPA testing protocols or state requirements. This test should be conducted no sooner than 24 hours nor later than 30 days following completion and activation of the mitigation system(s). This test may be conducted by the contractor, by the client, or by a third party testing firm. If this test is conducted by the mitigation contractor, and the test results are accepted by the client as satisfactory evidence of system effectiveness, further post-mitigation testing is not required. However, to avoid the appearance of conflict of interest, the contractor shall recommend to the client that a mitigation system effectiveness test be conducted by an independent RMP listed or state certified testing firm or by the client. The contractor should request a copy of the report of any post-mitigation testing conducted by the client or by an independent testing firm.

**A post-mitigation radon test SHALL be conducted.** It is the only way to know if the radon mitigation system which was installed is working correctly to lower the radon levels.

Listed below are **options for getting this done:**

- If you are measurement certified you can conduct the test, as long as you recommend an independent test, and the client is willing to accept your test.
- You can have another certified measurement professional conduct the test
- You may provide a short-term test kit from a Kansas-certified laboratory to the client and monitor the test kit results online using the kit serial number. Follow up with the client to ensure the kit is used. This option is **NOT AVAILABLE AS A FOLLOW UP OPTION IN A REAL ESTATE TRANSACTION.**

**Include the post-mitigation radon measurements** obtained in one of the ways above **on your data submission spreadsheet** for the job.

## *Pre- and Post-Mitigation Testing in Real Estate:*

**Any radon test** whether pre-mitigation or post-mitigation which is associated with a real estate transaction **MUST BE CONDUCTED BY A KANSAS-CERTIFIED RADON MEASUREMENT TECHNICIAN** in compliance with the statute *K.S.A. 48-16a05*. If the mitigation system is being installed as part of a real estate transaction, the post-mitigation radon measurement must be conducted by a certified radon measurement technician.

The post-mitigation radon test data is required to be submitted by the mitigation technician with the data submitted each quarter.

# Enforcing Radon Law in Kansas

KDHE works to achieve compliance

**T**he purpose of radon related laws in Kansas is to ensure quality and fairness in professional radon measurement and mitigation work in order to ultimately reduce the overall risk of lung cancer for Kansans. To this end the KDHE's Kansas Radon Program has recently worked with a Kansas-certified radon mitigation company to settle a large-scale enforcement action under Kansas radon law. Settlement requirements and process is continuing. The procedure and triggering events are summarized below. Specific company/individual names are omitted.

**KDHE received complaints** from a real estate professional, a homeowner, and a certified radon mitigation technician all against the same Kansas-certified radon mitigation company. Complaints included system design, elevated post-mitigation results, and other non-compliant system components **such as:**

- Sub-slab pressurization system with the fan blowing into the house instead of out. The homebuyer was not satisfied with this system and was demanding the seller put additional money in escrow until KDHE could inspect the system and declare it satisfactory. The system was eventually redesigned by a Kansas-certified mitigation contractor.
- Post-mitigation test at 7.8 pCi/L. Homeowner contacted the company which installed the system, and was told it would cost more money to fix it with a larger radon fan.
- Multiple observations and examples of non-compliant mitigation system by a different Kansas-certified mitigation contractor who was being called in to fix them.

KDHE radon staff initially made arrangements with the homeowner who called with a complaint to **perform an inspection on site**. KDHE then **pulled the radon mitigation data** which had been submitted from the radon mitigation company in question, and sent letters requesting permission to inspect recently installed systems in approximately ten other homes. **Four on site system inspections were performed in total.**

Following the in-house inspections, KDHE contacted the radon mitigation company and **requested all files and records** for each radon mitigation system installed in Kansas since they began offering radon mitigation in the state as certified professionals. The purpose of this is two-fold: first to determine if the radon data submitted to KDHE contained the required mitigation and measurement information and includes all the mitigations which had been performed; second to verify worker protection plans, building

investigation summaries, floor plans, copies of contracts/warranties, pre- and post-mitigation radon measurements, and other required data and information.

As a result of the four onsite inspections and inspections of the files and records of this radon mitigation company, **numerous violations of the Kansas radon laws and the Radon Mitigation Standards were identified**. A **proposed Order to Assess Civil Penalty** was sent to the radon mitigation company. The company was sent an **Order to Cease and Desist** radon mitigation in Kansas until such time as the Order was settled and the company came into complete compliance with the Kansas Radon Certification Law and regulations. The proposed order listed each violation of the law and/or the standards which was documented, and assessed a fine for each violation. **The fines totaled over \$100,000.**



**Violations identified** by KDHE at the four houses inspected and in the records and listed in the Propose Order to Assess Civil Penalty **include:**

- ⇒ Multiple instances of plugged cords penetrating the wall. *Radon Mitigation Standards 14.6.4*
- ⇒ Multiple instances of the radon mitigation fan which was installed on the exterior of the home not being hard-wired into an electrical circuit. Wiring for the exterior fan came into the house and through a junction box then into an indoor outlet. *Radon Mitigation Standards 14.6.5 and 14.6.7*
- ⇒ Multiple instances of electrical disconnect switches or circuit breakers not installed in the radon mitigation fan circuit to permit deactivation of the fan for maintenance or repair by the building owner or servicing contractor. *Radon Mitigation Standards 14.6.7*
- ⇒ The client information packages did not include copies of building investigation summary and floor plan sketch, pre and post radon test data, copy of warranty for radon fan, a list of appropriate actions for clients to take if the manometer indicated system degradation or failure, the name and phone number of the radon mitigation technician who installed the system, and the phone number of the state radon office. *Radon Mitigation Standards 18.5*
- ⇒ Multiple instances of the sump pit not sealed air tight. There was a hole drilled into the sump lid to allow for drainage from the channel drain in the concrete floor. There was not a water or mechanically trapped drain fitted into the sump cover. Duct tape was used to seal the pipe penetrations. Two pieces of plexi-glass were sealed together using silicone caulking. *Radon Mitigation Standards 14.5.1 and 15.8 and 13.3*
- ⇒ Multiple installations of radon mitigation systems by non-certified individuals.
- ⇒ Multiple instances of non-reporting of radon mitigation data.

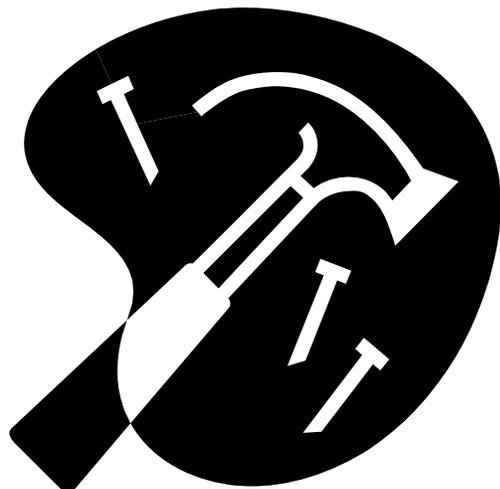


In accordance with the Kansas Administrative Procedure Act, the radon mitigation company was granted the right to request, within 15 days of receipt, a hearing on the proposed order or an informal settlement conference to discuss the facts and possible settlements. **A settlement conference was requested by the company** and occurred within a few days. At the conference, the radon mitigation company's radon professionals presented their justifications for and arguments against the activities as violations.

Negotiations led to a final **settlement agreement with a reduced fine (approximately 25% of the original paid in installments) and the cease and desist order was lifted.** The settlement also included a requirement that **all mitigation systems installed** by the radon mitigation company be **brought into compliance** with Kansas laws and the EPA Radon Mitigation

Standards if the homeowner is willing to let them back to fix the system. The **company agreed to contact** the homeowners of each radon mitigation system (**over 150 homes in Kansas**) and offer to **inspect and repair the systems at no additional costs**.

The **process of contacting and repairing all the radon mitigation systems is ongoing**. KDHE is working closely with the radon mitigation company to ensure that these repaired systems will be in compliance. We believe the radon **mitigation company is making a good effort to correct the violations** and that their **ongoing radon mitigation work will be in compliance with the laws and standards**.



**It is the goal of KDHE that our citizens receive quality radon measurement and mitigation services in accordance with the required standards and protocols.** When required, KDHE, using its regulatory authority, will enforce its radon laws through enforcement actions to ensure that radon measurements and mitigation systems meet state requirements. This ensures **all radon professionals are operating under equal rules with equal requirements**. **If you are a certified** radon measurement or mitigation technician **and you observe practices which do not conform with the required standards, we request that they be reported** to the KDHE radon program.

## Upcoming Training:

(more info on all of these at [www.kansasradonprogram.org](http://www.kansasradonprogram.org))

### **November 3— November 8, 2014: Combined Radon Measurement and Mitigation Course**

Location: Leavenworth, KS Cost: \$825

Register: Online at <https://outreach.ksu.edu/etrakWebApp/Registration.aspx?MeetingCode=605097AH>

### **December 11, 2014: Radon Continuing Education Courses**

Location: Wichita, KS Cost: \$25-\$75 each or \$150 for all

- 8-10 a.m. Radon Programs Update, \$25
- 10-noon QA/QC Measurements, \$25
- 1-3 p.m Mitigation Diagnostics and Performance, \$25
- 3-5 p.m New Radon Standards: RRNC, Multi-Family Measurement and Mitigation, \$75 (includes all three AARST-ANSI Standards)

Register: Online at <https://outreach.ksu.edu/etrakWebApp/Registration.aspx?MeetingCode=605097AI>

### **March 2 & 3, 2015: EPA Region 7 Radon Stakeholders Meeting**

Location: Kansas City, MO Courses: 8 hours — Content and Cost: TBD  
4 hours CE March 3 — FREE

Register: March 2 — Heartland Chapter AARST—registration info TBA  
March 3 — Bob Dye, EPA Region 7, [Dye.Robert@epa.gov](mailto:Dye.Robert@epa.gov)