

Privacy Protection for Address-Level Radon Data Using CDC Tools for Address De-Identification, Geocoding, and Mapping



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Introduction to CDC Tracking Program





PROVIDES BETTER INFORMATION FOR BETTER HEALTH



Tracking empowers people to make information-driven decisions to protect and improve health.



ENVIRONMENTAL PUBLIC HEALTH

TRACKING

CONNECTS ENVIRONMENT & HEALTH INFORMATION

Environmental



Radon
Drought
Sunlight & UV
Wildfire Smoke

- Air Quality
- Extreme Heat
- Drinking Water
- Flood Vulnerability
- Community Design

Pesticide Exposures •
Toxic Substance Releases •
Other Environmental Chemicals •

Exposures



Health Effects



- Asthma
- Cancer
- Heart Disease
- Heat Stress Illness
- Childhood Lead Poisoning
- Developmental Disabilities
- Carbon Monoxide Poisoning
- Reproductive and Birth Outcomes

Population Characteristics




Lifestyle Risk Factors •
Socioeconomics •
Demographics •
Vulnerabilities •



Tracking Grant Recipients



National Environmental Public Health Tracking Network



POWERED BY TRACKING

Learn more about the Tracking Program

Better Information for Better Health


The National Environmental Public Health Tracking Network (Tracking Network) brings together health data and environmental data from national, state, and city sources and provides supporting information to make the data easier to understand. The Tracking Network has data and information on environments and hazards, health effects, and population health.

Explore Data




Explore Data
Search and download a variety of data in maps, charts, and tables

Data Explorer Tool



View Dashboards
View our 'Powered by Tracking' dashboards and learn more about important issues

Dashboards



State and Local Tracking Programs
View CDC-funded health departments that build and implement local tracking programs and data networks

Tracking Programs

Tools for Privacy Protection



CDC Tracking Program Rapid Address De-Identifier (RAD) Tool

- The RAD Tool will assign a universally unique identifier (UUID) to the addresses in your radon data file
- The RAD Tool can now be accessed on GitHub from the link below:

[EPHTracking-RAD/RAD.jar at master · CDCgov/EPHTracking-RAD · GitHub](#)



The RAD Tool

- The UUID becomes your “AddressIdentifier”
- The RAD Tool looks for a column “AddressIdentifier” to assign IDs
- Multiple test results from the same address will receive the same UUID (if they are submitted at the same time)



Addresses Address Identifiers

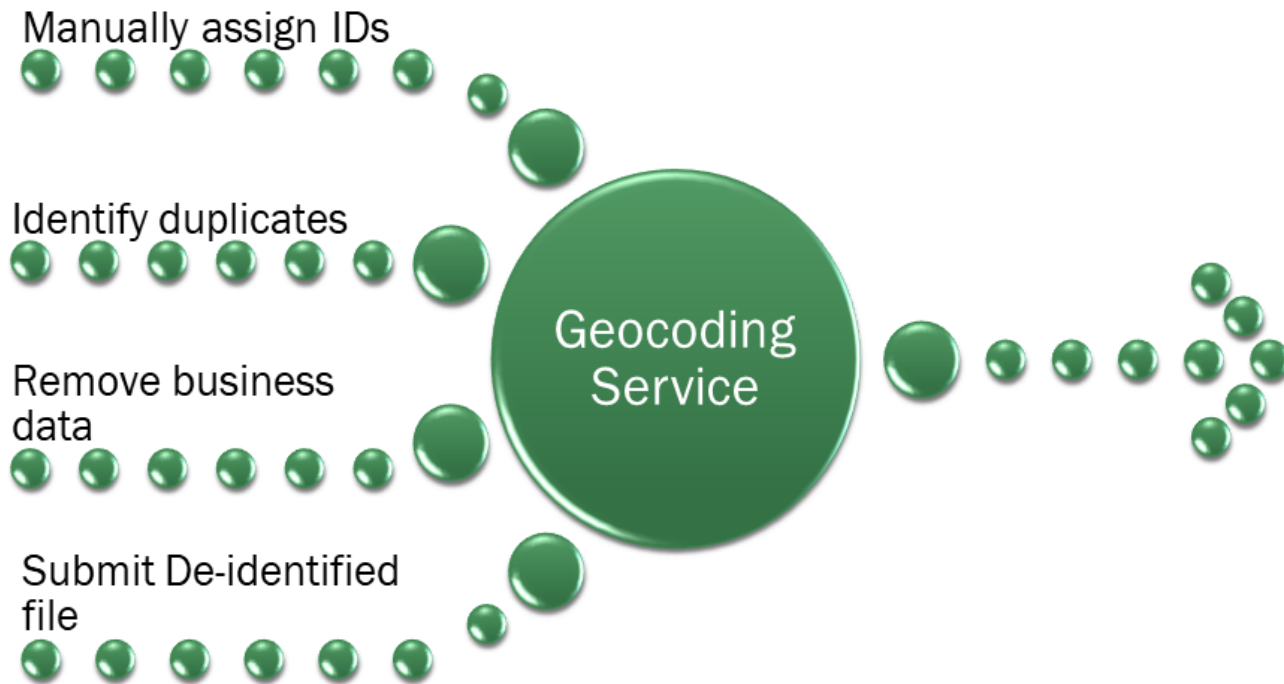
- What's an Address Identifier?
 - A required variable for a radon data submission
 - A code, a number or an alpha numeric meant to stand in for the address to protect privacy

RAD Tool Input/Output

UUID	AddressIdentifier
8fcf9a27-3b10-45e4-8ed85aadfd19d5e8	45 RASON ROAD INWOOD NY 11096
17fefe14a4ba-4d4d-8965-dd5e037d9bff	5617 HOOVER STREET, SUITE A HOUSTON TX 77092
da2aef82-e7b6-44af-8e5d-81380939a5de	2712 WILMINGTON RD NEW CASTLE PA 16105
84ed944eb119-4ee1-ad85-35f60e69fea7	3313 N. JONES STREET FORT WORTH TX 76106
092f6a0a-bf38-45d7-9a6b-a39d554dfc14	53 KINDER DR. SAN ANTONIO TX 78212
a95657cc-340a-4b77-bc62-9f2f64c6985e	700 TULIP DRIVE GASTONIA NC 28052
32daec44-c88a-4ca8-9f37-8f634587e4cd	625 NEW COMMERCE BOULEVARD WILKES -BARRE PA 18706
7079d6584822-4988-8916-e638d425b169	625 SOUTH MAIN STREET WILKES BARRE PA 18701
27ac0960-f086-4f46-8af6-8d836cad1eb9	3514 NW 36TH STREET MIAMI FL 33142
ebc188f7-7946-41ea-acb0-b661def0c726	3745 CHERRYWOOD EAST LOOP LARAMIE WY 82070



RAD Tool Geocoder → TAMU



TAMU Geocoder

- CDC Tracking has contracted with Texas A&M to provide unlimited geocoding services
- Access to TAMU is available to anyone who submits data to CDC
- Use of the RAD Tool prior to submission to TAMU will expedite processing
- Addresses should be split out prior to geocoding (column for street, city, state, zip)

UUID	AddressIdentifier
8fcf9a27-3b10-45e4-8ed85aadfd19d5e8	45 RASON ROAD INWOOD NY 11096
17fefe14a4ba-4d4d-8965-dd5e037d9bff	5617 HOOVER STREET, SUITE A HOUSTON TX 77092
da2aef82-e7b6-44af-8e5d-81380939a5de	2712 WILMINGTON RD NEW CASTLE PA 16105



Update on Radon Data Submissions



Radon and CDC Tracking Program

- Radon Task Force 2011 - 2012
 - Radon White Paper
- EPA State Radon Data Exchange
- Radon Pilot Phase 1 – 2013 - 2014
- Radon Pilot Phase 2 – 2015 - 2016
- Radon Work Group – 2016 – present
- CDC/Private lab collaboration – 2018 - present



Radon Data from States

AK 2000 - 2021	NY 2000 - 2021
CO 2010 - 2021	OR 1999 - 2021
CT 2000 - 2019	PA 2010 - 2020
FL 1993 - 2021	RI 1988 - 2018
KS 2016 - 2020	UT 2006 - 2021
MN 2010 - 2020	VT 2011 - 2021
MO 2003 - 2021	WA 2000 - 2020
NJ 2005 - 2020	WI 1999 - 2021

Radon Data from Labs

7 labs currently participating:

- Accustar
- AirChek
- Alpha Energy Labs
- EMSL
- RAL
- Radalink
- SunRadon*

* Not currently displayed on Tracking Network



Radon Indicators and Measures

- Separate indicator and measures from labs and state-submitted data
- Two Indicators:
 - Radon Tests from Labs
 - Radon Tests from States

Radon measures – States


1. Number of buildings tested, *by year*
2. Maximum radon level in tested buildings
3. Mean radon level in tested buildings
4. Median radon level in tested buildings
- 5-6. Number/Percent of pre-mitigation tests by radon levels
- 7-8. Number/Percent of post-mitigation tests by radon levels

Radon measures - Labs

1. Number of buildings tested, *by year*
2. Number of buildings tested (*over a 10 yr period*)
3. Maximum radon level in tested buildings
4. Mean radon level in tested buildings
5. Median radon level in tested buildings
- 6-7. Number/Percent of pre-mitigation tests by radon levels
- 8-9. Number/Percent of post-mitigation tests by radon levels
10. Rate of housing units tested per 10,000 units



National Environmental Public Health Tracking Network



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View CDC-funded health departments that build and implement local tracking programs and data networks

Tracking Programs

Radon Tests from States – Measures


 Query Panel ✕

STEP 1: CONTENT 


Radon

Radon Tests from States


Annual Mean Pre-Mitigation Radon Measuremen

STEP 2: GEOGRAPHY TYPE 

National By County

STEP 3: GEOGRAPHY 

All Counties

STEP 4: TIME 

All Years

2021

2020

2019

2018

2017

2016

2015


2014

2013

2012

2011

2010

STEP 5: ADVANCED OPTIONS 

No Advanced Options

Disclaimer

Maximum pre-mitigation radon level in tested buildings

Disclaimer

CDC National Environmental Public Health Tracking Network

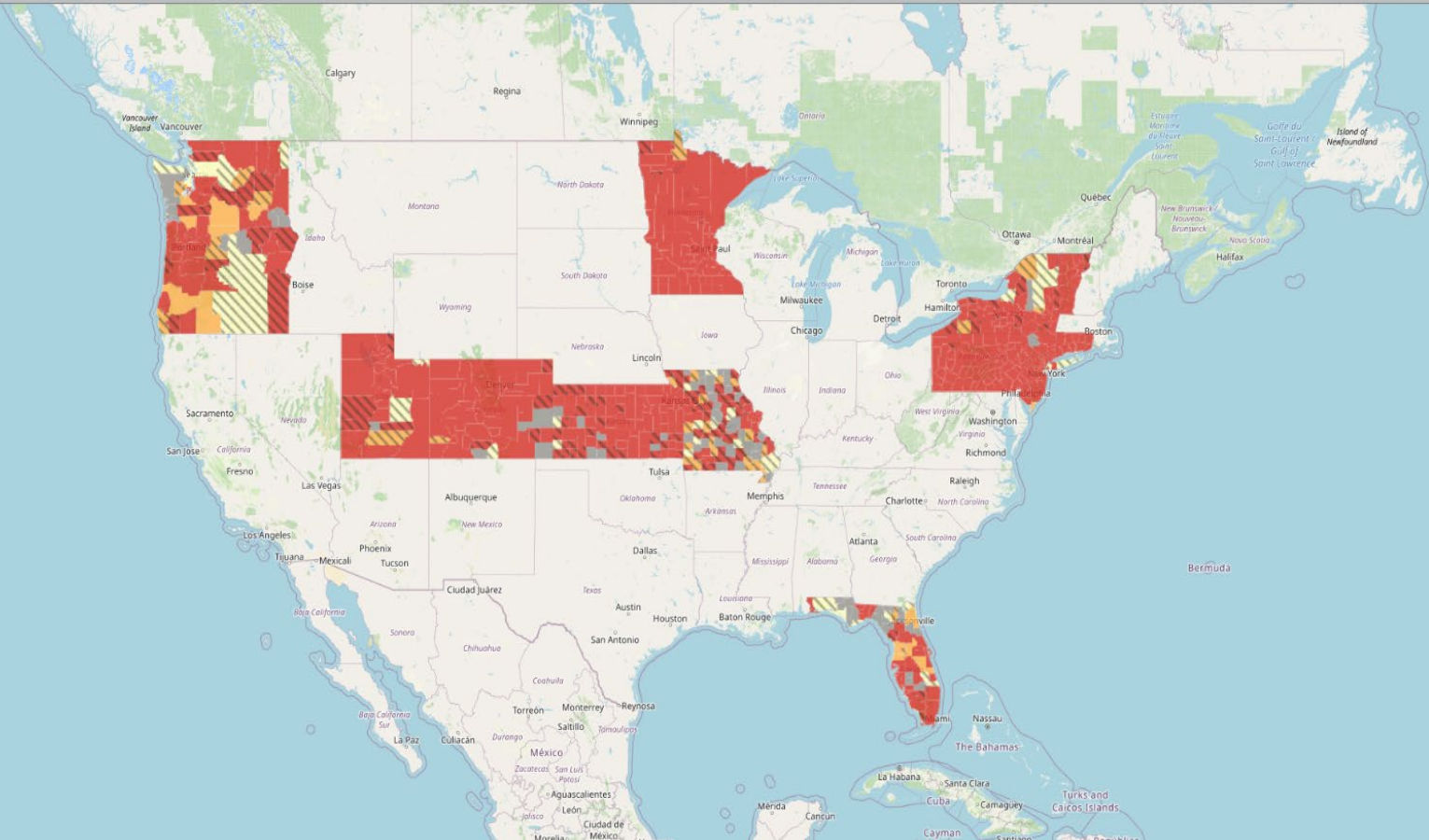
SELECT DATA X ?



RADON | RADON TESTS FROM STATES | ANNUAL MAXIMUM PRE-MITIGATION RADON LEVEL IN TESTED BUILDINGS | ALL COUNTIES

2018

ABOUT DATA





LEGEND X






- 0 - <2
- 2 - <4
- >= 4
- No Events
- < 10 Tests








Data displayed as charts and tables

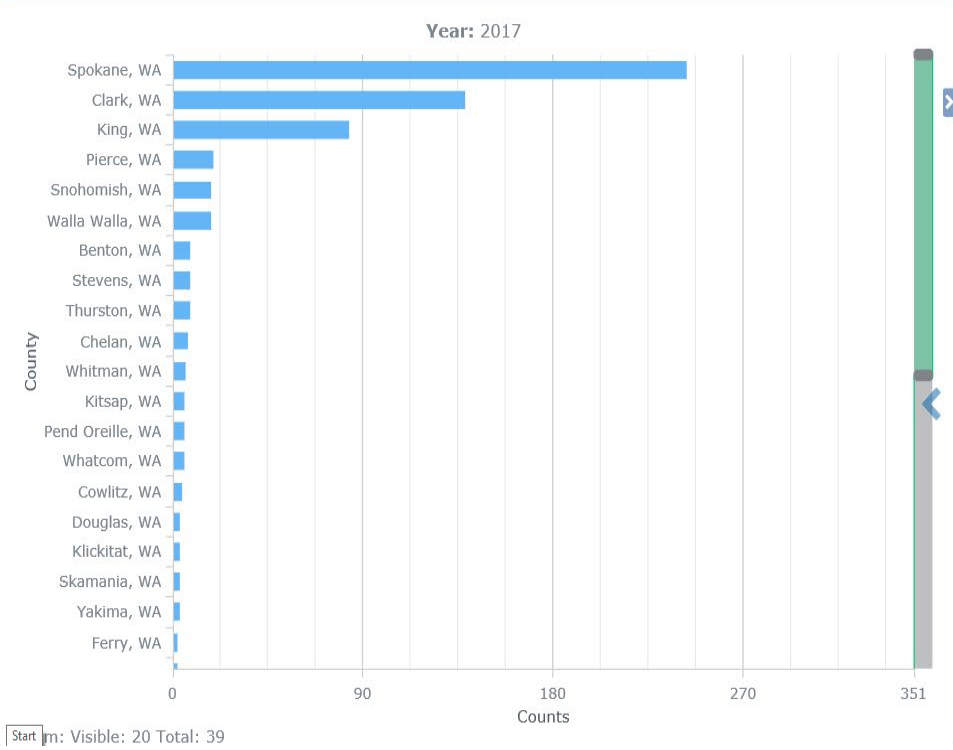


 National Environmental Public Health Tracking Network
 [Disclaimer](#)

SELECT DATA X ?












▶ 2017 ▼
ABOUT DATA






⚙️



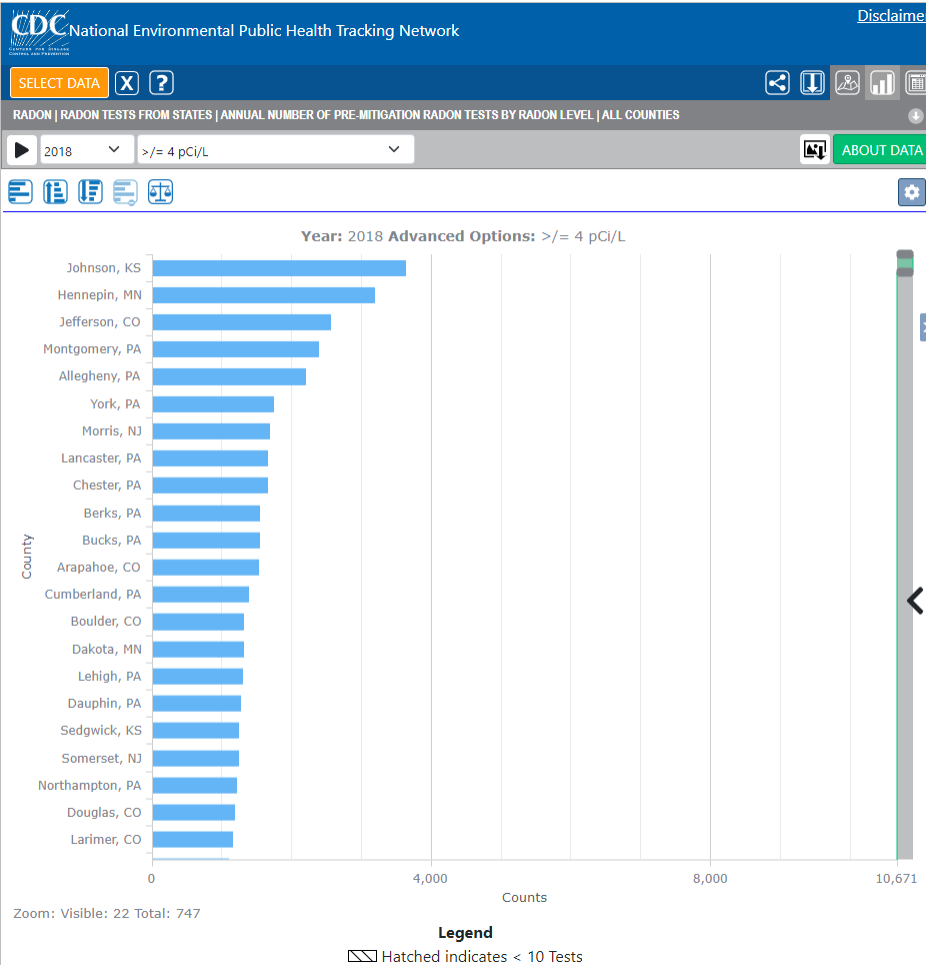
SELECT DATA X ?

▶ 2017 ▼
ABOUT DATA

County	Counts
<input type="text" value="Filter County"/>	
Spokane	243
Clark	138
King	83
Pierce	19
Snohomish	18
Walla Walla	18
Benton	8
Stevens	8
Thurston	8
Chelan	7
Whitman	6
Kitsap	5
Pend Oreille	5
Whatcom	5
Cowlitz	4
Douglas	3
Klickitat	3
Skamania	3
Yakima	2

Data displayed as charts and tables



SELECT DATA X ?

RADON | RADON TESTS FROM STATES | ANNUAL NUMBER OF PRE-MITIGATION RADON TESTS BY RADON LEVEL | ALL COUNTIES


2018

ABOUT DATA

Group	State	County	Stratification	Counts	Data Comment
	Alaska	WRANGELL CITY ANI	< 2 pCi/L	No Events	
	Alaska	WRANGELL CITY ANI	>/= 2 pCi/L and < 4	No Events	
	Alaska	WRANGELL CITY ANI	>/= 4 pCi/L	No Events	
	Alaska	Yakutat	< 2 pCi/L	No Events	
	Alaska	Yakutat	>/= 2 pCi/L and < 4	No Events	
	Alaska	Yakutat	>/= 4 pCi/L	No Events	
	Alaska	Yukon-Koyukuk	< 2 pCi/L	No Events	
	Alaska	Yukon-Koyukuk	>/= 2 pCi/L and < 4	No Events	
	Alaska	Yukon-Koyukuk	>/= 4 pCi/L	No Events	
>	Colorado	(192)			
>	Connecticut	(24)			
>	Florida	(201)			
>	Kansas	(315)			
>	Minnesota	(261)			
>	Missouri	(345)			
>	New Jersey	(63)			
>	New York	(186)			
>	Oregon	(108)			
>	Pennsylvania	(20)			
>	Rhode Island	(15)			
>	Utah	(87)			
>	Vermont	(42)			

Columns Filters

Radon Tests from Labs – Measures

 National Environmental Public Health Tracking Network X

STEP 1: CONTENT ?

Radon

Radon Tests from Labs

Maximum pre-mitigation radon level in tested buildings

Select Measure

- Maximum pre-mitigation radon level in tested buildings
- Median pre-mitigation radon level in tested buildings
- Number of buildings tested by year
- Number of buildings tested per 10 years
- Number of post-mitigation radon tests by radon level
- Number of pre-mitigation radon tests by radon level
- Percent of post-mitigation radon tests by radon level
- Percent of pre-mitigation radon tests by radon level
- Rate of housing units tested, per 10,000 units

STEP 3: GEOGRAPHY ?

All Counties

STEP 4: TIME ?

All Years

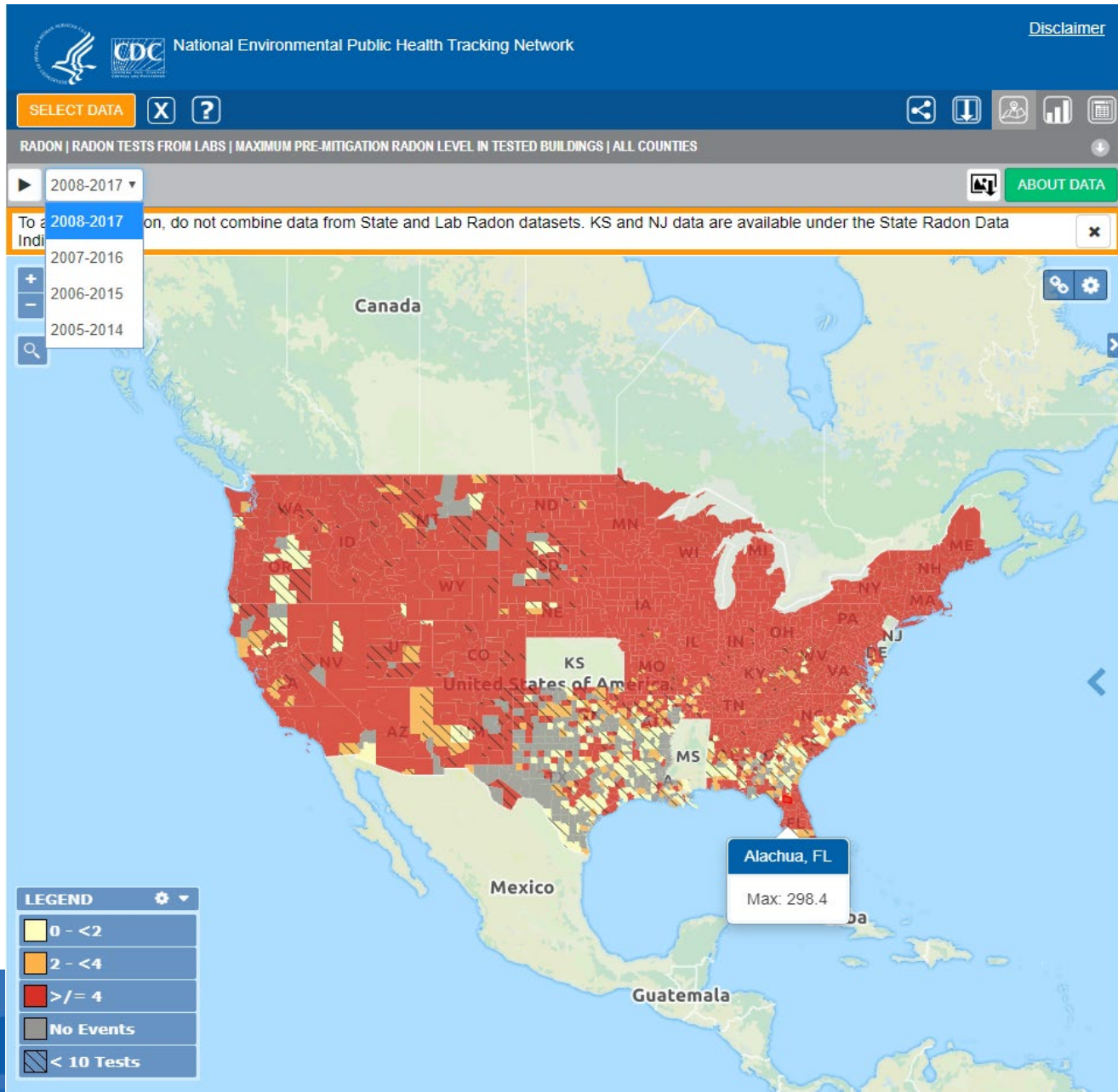
- 2008-2017
- 2007-2016
- 2006-2015
- 2005-2014

STEP 5: ADVANCED OPTIONS ?

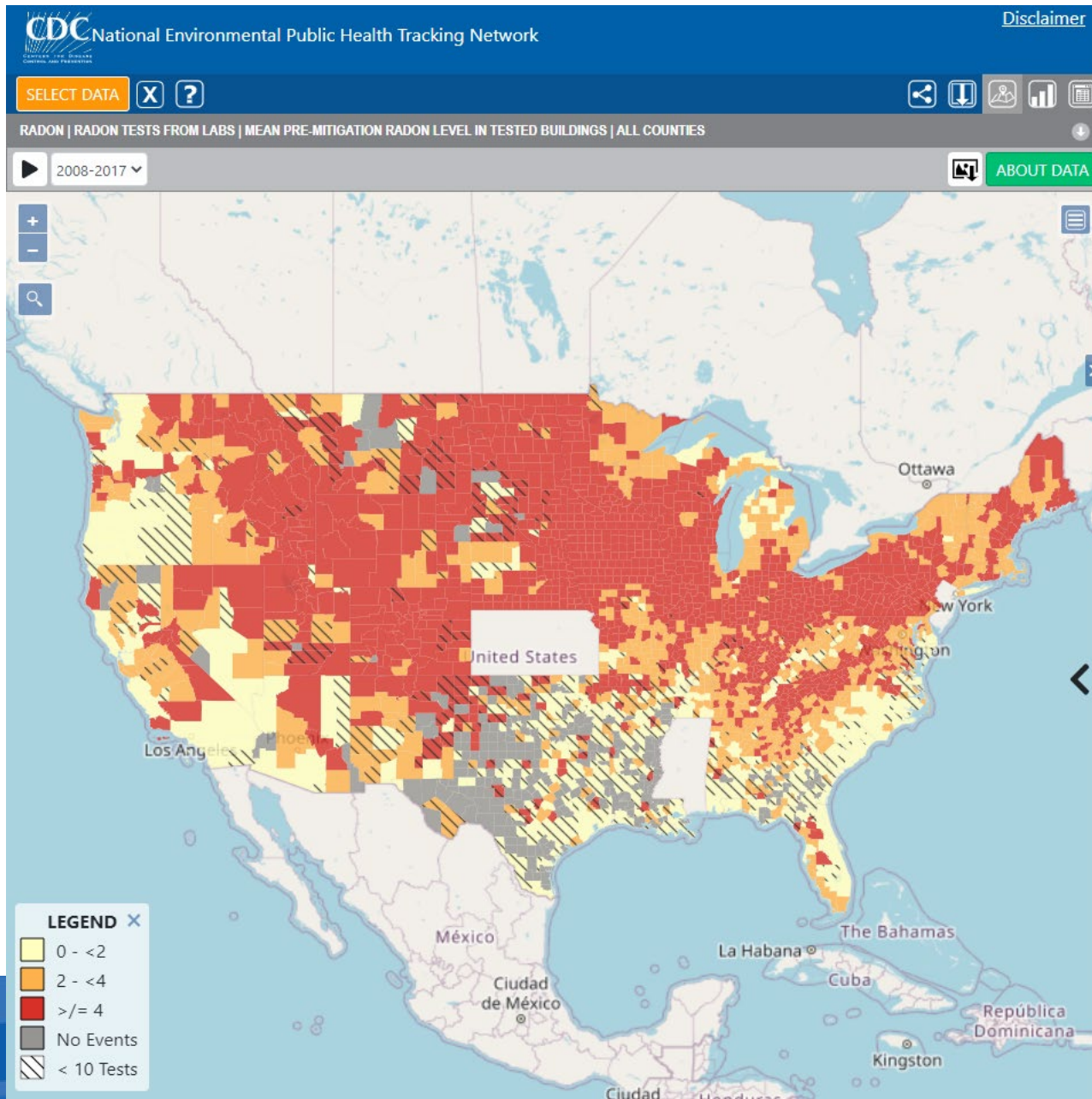
No Advanced Options

3. Maximize either display window by clicking either the large "<" or ">" arrow in the middle of the screen

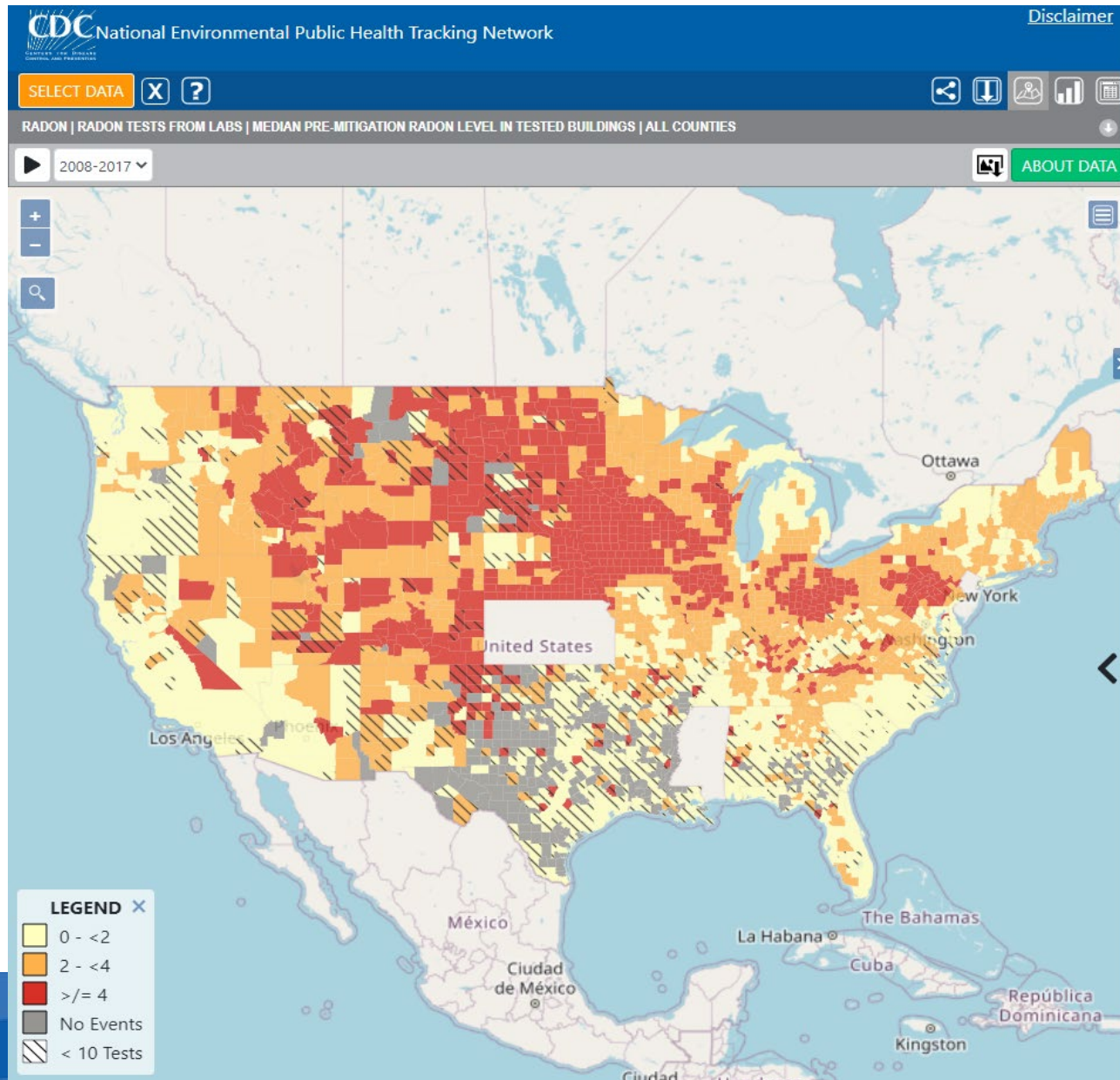
Maximum pre-mitigation radon level in tested buildings



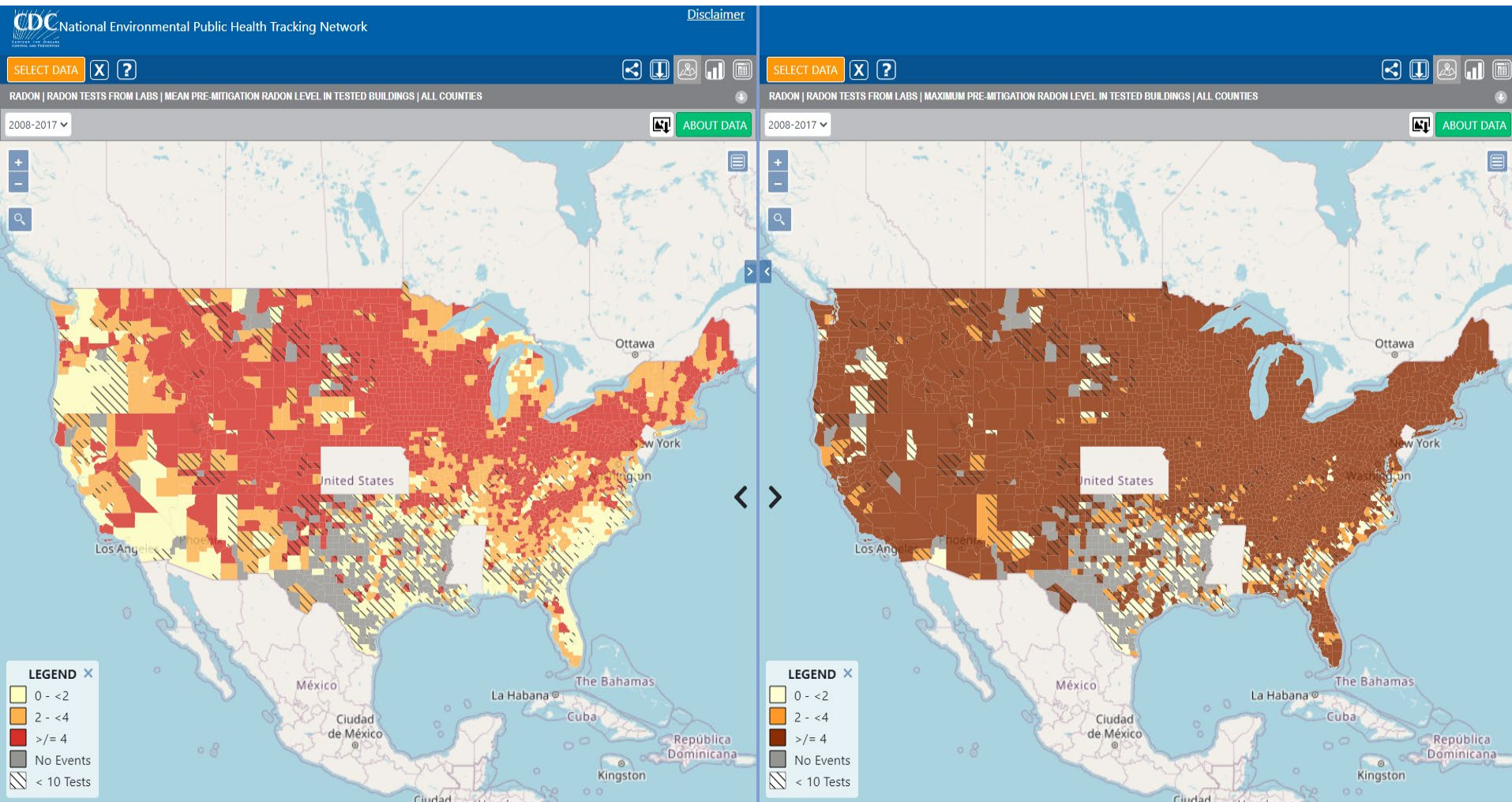
Mean pre-mitigation radon level in tested buildings



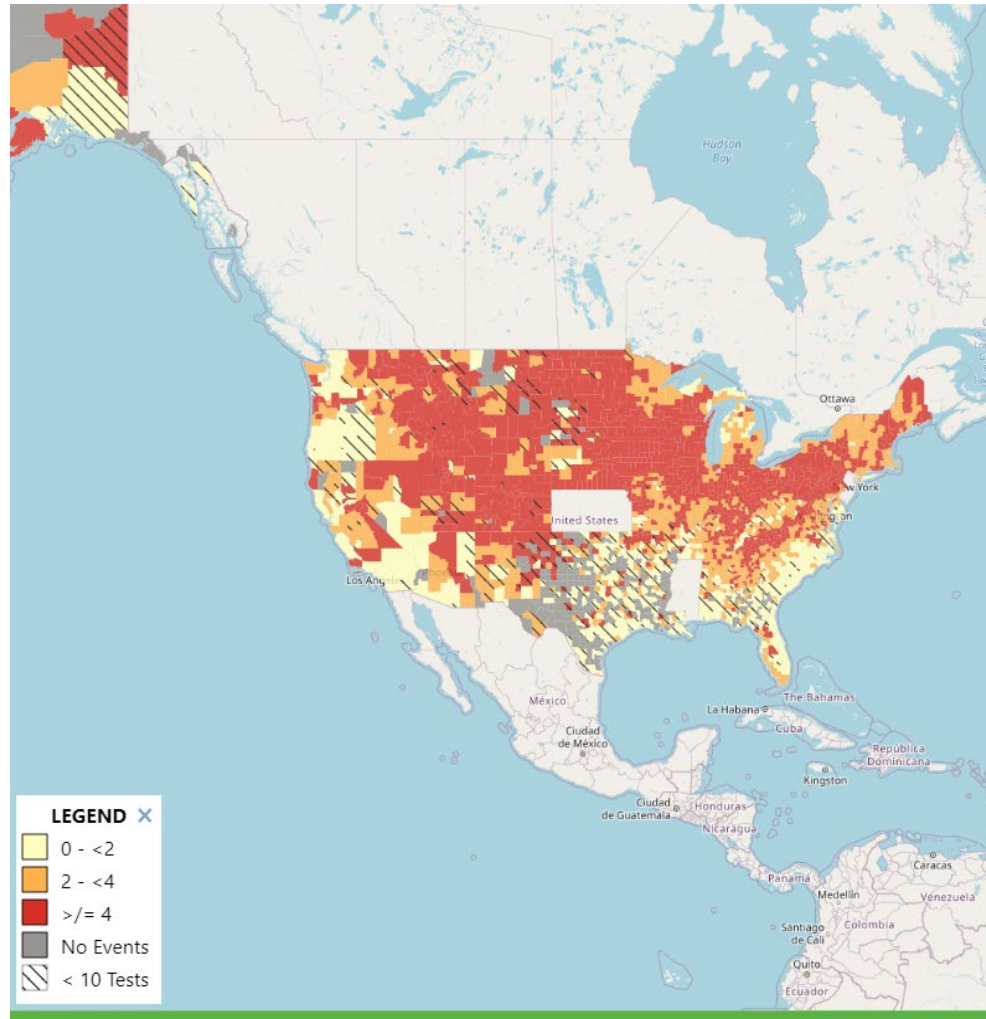
Median pre-mitigation radon level in tested buildings



Side-by-side Mean and Maximum Radon Levels



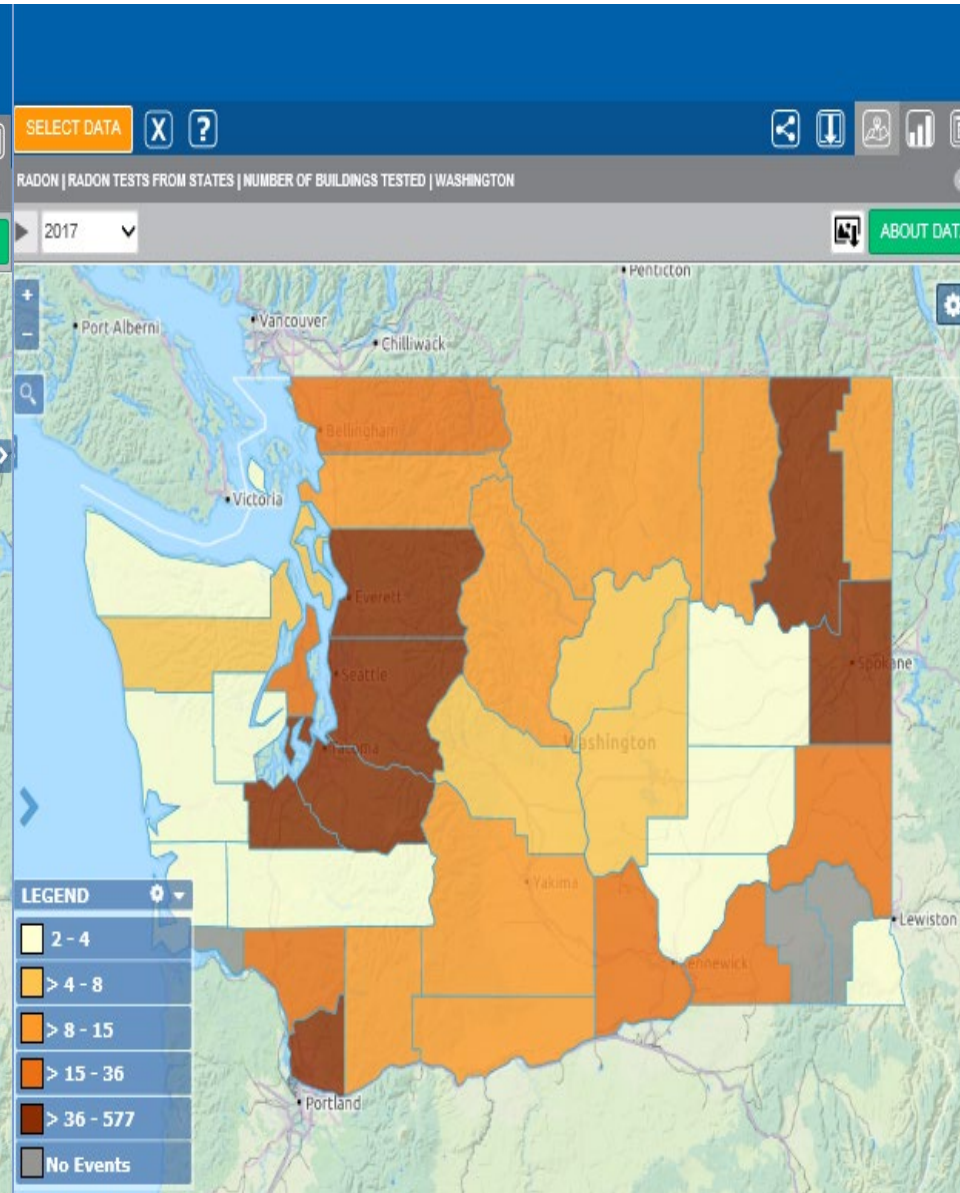
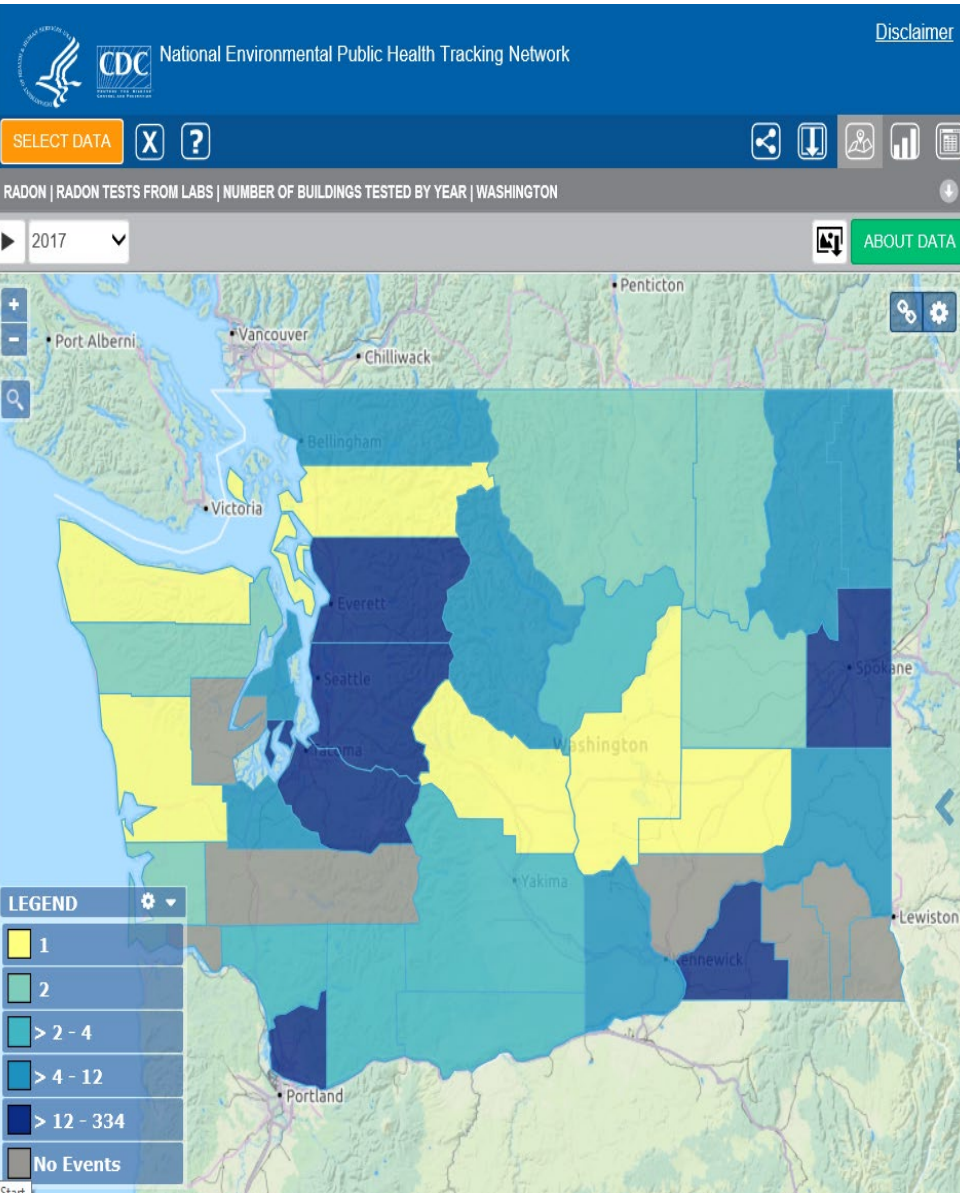
Map Created by the Tracking Network's Data Explorer



RADON | RADON TESTS FROM LABS | MEAN PRE-MITIGATION RADON LEVEL IN TESTED BUILDINGS | ALL COUNTIES | 2008-2017



Side-by-side Lab and State Radon Data



File

Home

Insert

Page Layout

Formulas

Data

Review

View

Tell me what you want to do...

More

Clipboard: Paste, Copy, Cut, Undo, Redo

Font: Calibri, 11, Bold (B), Italic (I), Underline (U), Text Color (A), Background Color, Font Color (A)

Alignment: Wrap Text, Merge & Center, Left, Center, Right, Indent, Decrease Indent, Increase Indent

Number: General, Currency (\$), Percentage (%), Thousand Separator (.), Comma Separator (,), Negative (←), Positive (→)

Styles: Conditional Formatting, Format as Table, Cell Styles

Cells: Insert, Delete

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	stateFIPS	State	countyFIP	County	Year	Value	Data Com	Concentration							
2	1	Alabama	1001	Autauga	2005-2014	6		Not detected							
3	1	Alabama	1001	Autauga	2005-2014	23		< 2 pCi/L							
4	1	Alabama	1001	Autauga	2005-2014	2		>= 2 pCi/L and < 4 pCi/L							
5	1	Alabama	1001	Autauga	2005-2014	6		>= 4 pCi/L							
6	1	Alabama	1001	Autauga	2006-2015	8		Not detected							
7	1	Alabama	1001	Autauga	2006-2015	24		< 2 pCi/L							
8	1	Alabama	1001	Autauga	2006-2015	2		>= 2 pCi/L and < 4 pCi/L							
9	1	Alabama	1001	Autauga	2006-2015	5		>= 4 pCi/L							
10	1	Alabama	1001	Autauga	2007-2016	8		Not detected							
11	1	Alabama	1001	Autauga	2007-2016	22		< 2 pCi/L							
12	1	Alabama	1001	Autauga	2007-2016	2		>= 2 pCi/L and < 4 pCi/L							
13	1	Alabama	1001	Autauga	2007-2016	6		>= 4 pCi/L							
14	1	Alabama	1001	Autauga	2008-2017	8		Not detected							
15	1	Alabama	1001	Autauga	2008-2017	20		< 2 pCi/L							
16	1	Alabama	1001	Autauga	2008-2017	1		>= 2 pCi/L and < 4 pCi/L							
17	1	Alabama	1001	Autauga	2008-2017	6		>= 4 pCi/L							
18	1	Alabama	1003	Baldwin	2005-2014	5		Not detected							
19	1	Alabama	1003	Baldwin	2005-2014	22		< 2 pCi/L							
20	1	Alabama	1003	Baldwin	2005-2014	5		>= 2 pCi/L and < 4 pCi/L							
21	1	Alabama	1003	Baldwin	2005-2014	0		>= 4 pCi/L							

New Developments: Future Partners

- Lab:
 - Protect Environmental
 - Ecosense
- Tribal: Cherokee Nation
- State: Idaho



Future Efforts

- Display of census tract level data; additional data required to be able to display at this level
- Increase participation to provide greater coverage of U.S. (e.g., TX, HI, & MS)
- Include public housing data: multi- and single- family housing
- All states, tribes, and radon labs are invited to participate in the radon data mapping effort with CDC



Thank you!



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<https://www.cdc.gov/nceh/tracking/>

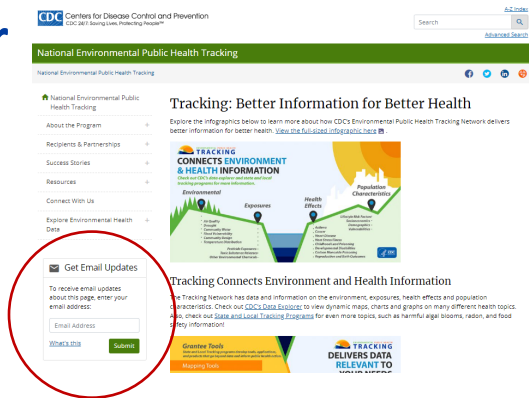
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1600 Clifton Road NE, Atlanta, GA 30333
Telephone, 1-800-CDC-INFO (232-4636)/TTY: 1-888-232-6348
E-mail: cdcinfo@cdc.gov Web: www.cdc.gov

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