

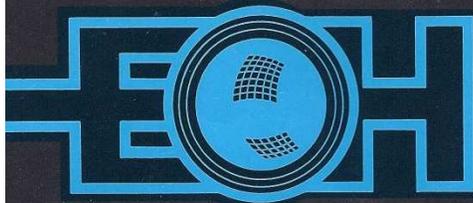


**Michigan Department of
Environmental Quality**

Radon Stakeholder Meeting

June 18, 2015



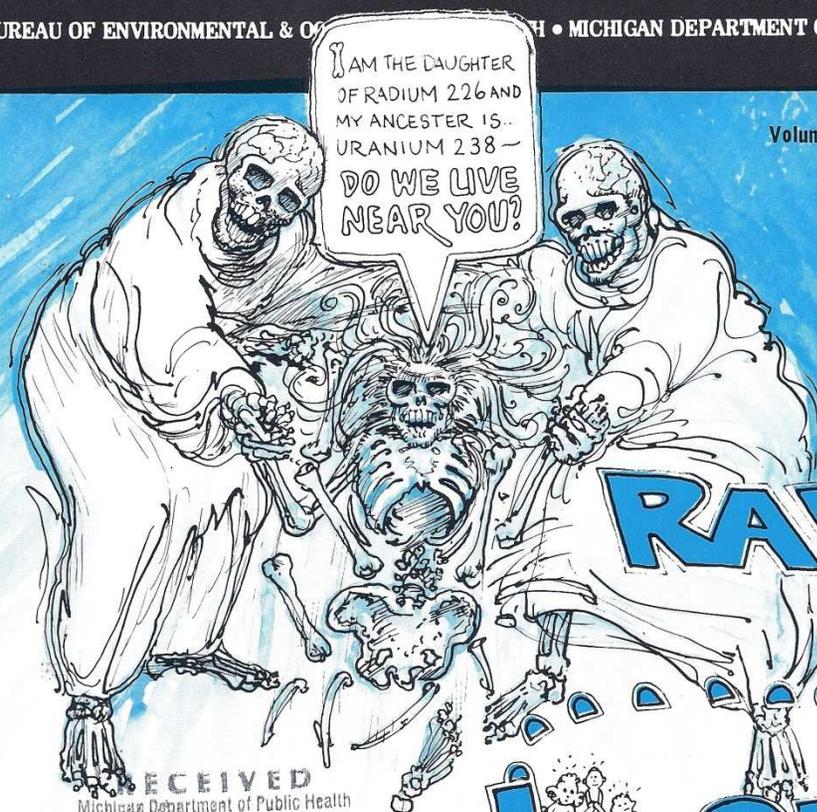


Focus

BUREAU OF ENVIRONMENTAL & OCCUPATIONAL HEALTH • MICHIGAN DEPARTMENT OF PUBLIC HEALTH



Volume 2 Number 3 Summer 1986



RADON: It is in our homes?

RECEIVED
Michigan Department of Public Health

JUL 28 1986

BUREAU OF ENVIRONMENTAL &
OCCUPATIONAL HEALTH - DRH
Division of Radiological Health



United States
Environmental Protection
Agency

Office of
Air and Radiation



U.S. Department
Of Health and
Human Services

Centers for
Disease Control

August 1986

OPA-86-004

A Citizen's Guide To Radon

What It Is And What To Do About It



Radon Risk Evaluation Chart

pCi/l	WL	Estimated number of lung cancer deaths due to radon exposure (out of 1000)	Comparable exposure levels	Comparable risk
200	1	440—770	1000 times average outdoor level	More than 60 times non-smoker risk
100	0.5	270—630	100 times average indoor level	4 pack-a-day smoker
40	0.2	120—380		20,000 chest x-rays per year
20	0.1	60—210	100 times average outdoor level	2 pack-a-day smoker
10	0.05	30—120	10 times average indoor level	1 pack-a-day smoker
4	0.02	13—50		5 times non-smoker risk
2	0.01	7—30	10 times average outdoor level	200 chest x-rays per year
1	0.005	3—13	Average indoor level	Non-smoker risk of dying from lung cancer
0.2	0.001	1—3	Average outdoor level	20 chest x-rays per year

RADON: A GUIDE FOR MICHIGAN HOMEOWNERS



Prepared as a public service by
Senator Christopher D. Dingell



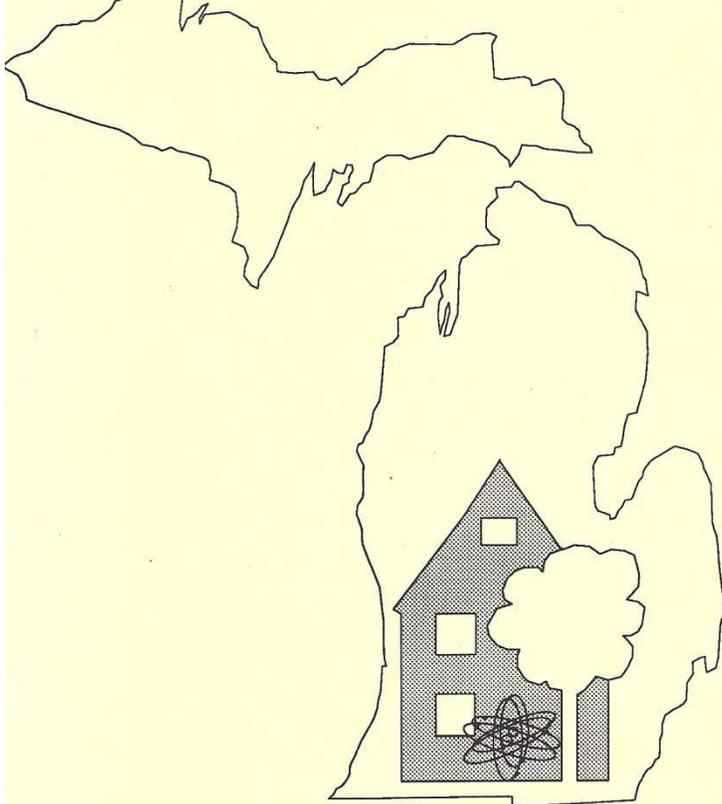
Radon: A Guide for Michigan Homeowners

September 1987

Table of Contents

- I. What is Radon?
- II. Can Radon Affect Human Health?
- III. How Realistic Are the Lung Cancer Risk Estimates?
- IV. How Does Radon Enter a Home?
- V. Does Every Home Have A Radon Problem?
- VI. How is Radon Detected?
- VII. Do Michigan Homeowners Have to Worry About Radon?
- VIII. How Can A Michigan Homeowner Have a Home Tested?
- IX. How Should Radon Tests Be Conducted?
- X. How Quickly Should a Homeowner Take Action?
- XI. Are There Additional Factors Affecting An Individual's Risk From Radon?
- XII. Are There Immediate Steps an Individual Can Take to Reduce Indoor Radon Exposure?
- XIII. Can Indoor Radon Levels Be Reduced?
- XIV. Can A Homeowner Rely on "Do-it-Yourself" Repairs to Reduce Radon Levels?
- XV. What Methods May Reduce Radon Levels?
- XVI. How Can a Homeowner Know If the Radon Reduction Is Working?

INDOOR RADON IN MICHIGAN: Residential Survey Summary



Michigan Department of Public Health
Bureau of Environmental and Occupational Health
Division of Radiological Health

May 1990

RH-947/A

2,082 random household
screening measurements

- Conducted in
March to April 1987 and
Nov 1987 to Feb 1988
- 88% ≤ 4 pCi/L
- 12% 4 to 20 pCi/L
- $<1\%$ Greater than 20 pCi/L

444 geographically selected
measurements

- Similar results

EPA's Eastern Environmental
Radiation Facility in Alabama
performed analytical work

I N T R O D U C I N G

RADON RANGER

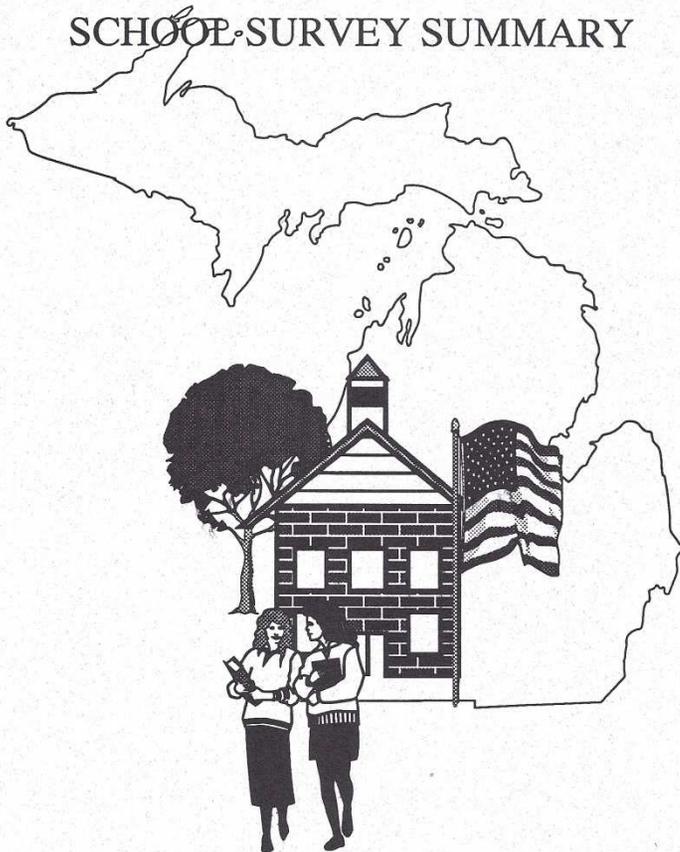
CHILDREN'S GUIDE TO RADON



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INDOOR RADON IN MICHIGAN: SCHOOL SURVEY SUMMARY



Michigan Department of Public Health
Bureau of Environmental and Occupational Health
Division of Radiological Health

February 1994

RH-936

Testing offered to state's 529 public school districts

- 65% agreed to participate
- Conducted January to June 1991
- E-perms read by state staff
- Generally tested over weekends
- 13,000 measurements in 388 buildings
- 11,593 valid results

Results

97.7% \leq 4 pCi/L

2.3% 4 to 20 pCi/L

0.04% greater than 20 pCi/L

**INDOOR RADON IN MICHIGAN:
REPORT TO THE GOVERNOR**

Used 1987 to 1988
Residential Survey data



Michigan Department of Environmental Quality
Waste and Hazardous Materials Division*

Radon Program Overview

- Non-regulatory Program
- Focus is on Education and Outreach
- Partners include:
 - » Local Health Departments
 - » Tribes
 - » Michigan Association of Broadcasters
 - » Real Estate Agents
 - » Home Inspectors
 - » NRPP Certified Radon Professionals
- Does not give grants to partners

Education and Outreach

- Material Distribution:

- » Radon Test Kits (both short and long term)
- » Radon Literature (EPA and DEQ publications)
- » Radon Test Results to Local Health Departments
- » Testing and Mitigation Information to Citizens.
- » Lists of Certified Radon Professionals

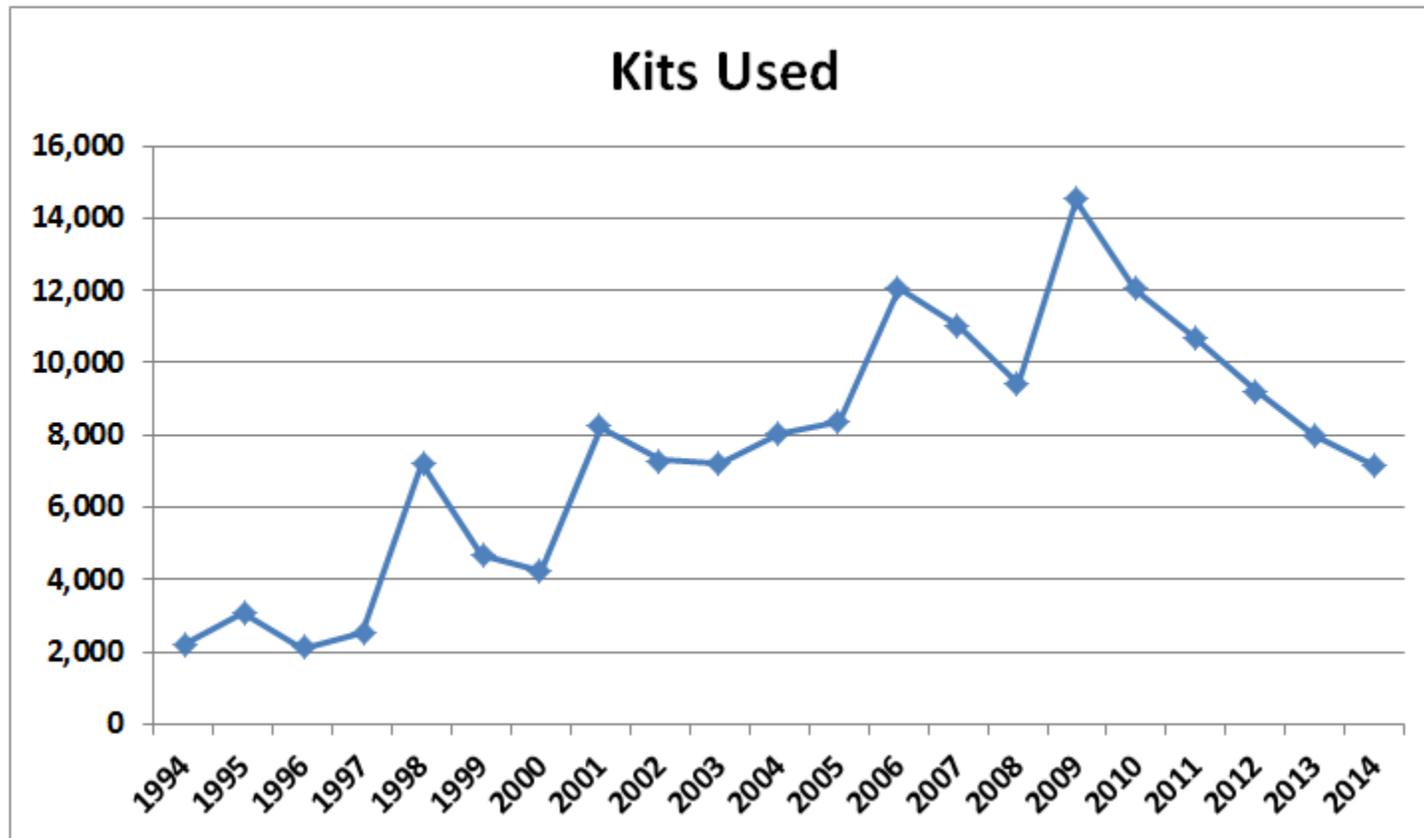
Education and Outreach

- Statewide Radon Hotline
 - » Average of 1,800 Phone/Email Contacts Per Year
 - » Information on Radon Testing
 - » Interpretation of Radon Test Results
 - » Radon Mitigation or Measurement Services
 - » Real Estate Transaction Assistance
 - » Landlord/Tenant Assistance
 - » Daycare License Renewal Assistance
 - » Media / Legislative Contacts
 - » Other Indoor Air Quality Concerns

Radon Action Month January

- Proclamation from Governor Snyder
- Press Releases
- Radon Tweets from DEQ
- Several Statewide radon partners issued press releases and distributed radon test kits.
- Several media requests

Short Term Test Kits Used by Year



Over 150,000 results. Database starts November 1993

Short Term Test Kit Results (pCi/L)



	<u>Percent</u>
■ MDC	12
■ 0.4 – 1.9	36
■ 2.0 – 3.9	24
■ 4.0 – 9.9	20
■ 10.0 – 19.9	4.8
■ 20.0 – 49.9	1.3
■ 50.0 – 99.9	0.14
■ 100+	0.05

Short Term Test Kits

74% < 4.0 pCi/L

26% ≥ 4.0 pCi/L

Long Term Test Kits: placed for 3 to 12 months

If the short-term radon test result is between 4.0 and 8.0 pCi/L, people sometimes place a long term radon test kit for a year to determine the average annual radon concentration. Database has over 4,000 valid results:

73% < 4.0 pCi/L

27% ≥ 4.0 pCi/L

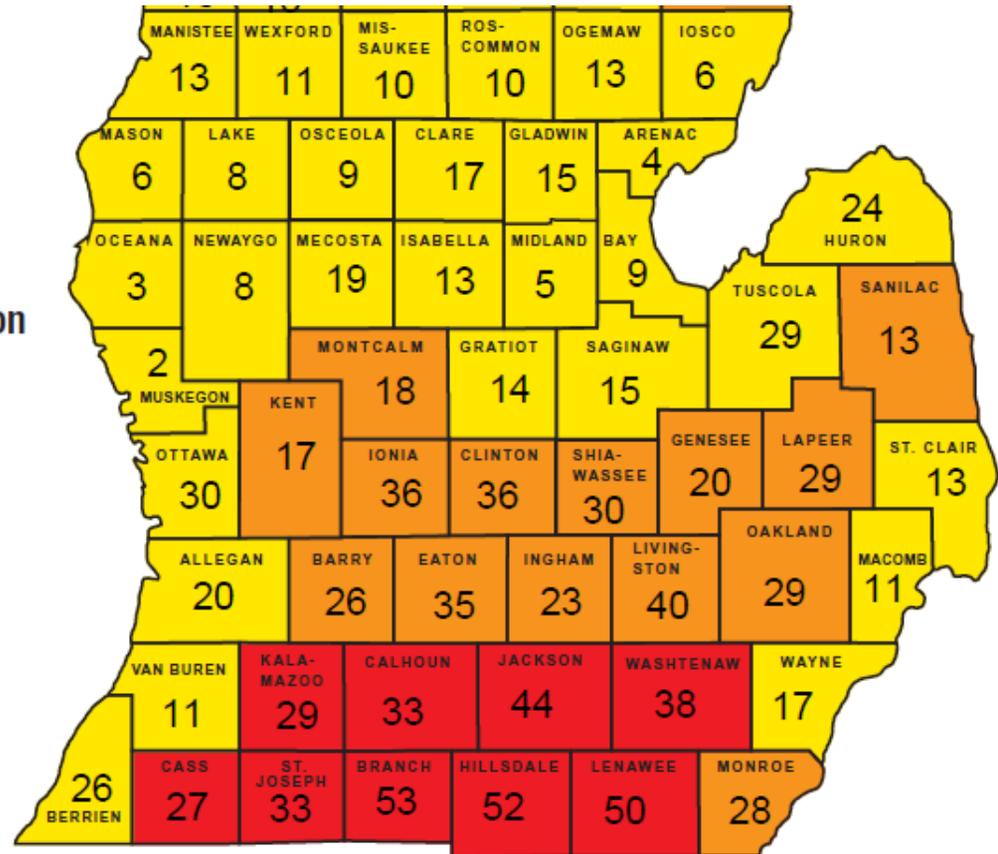
Highest Short-Term Radon Test Results

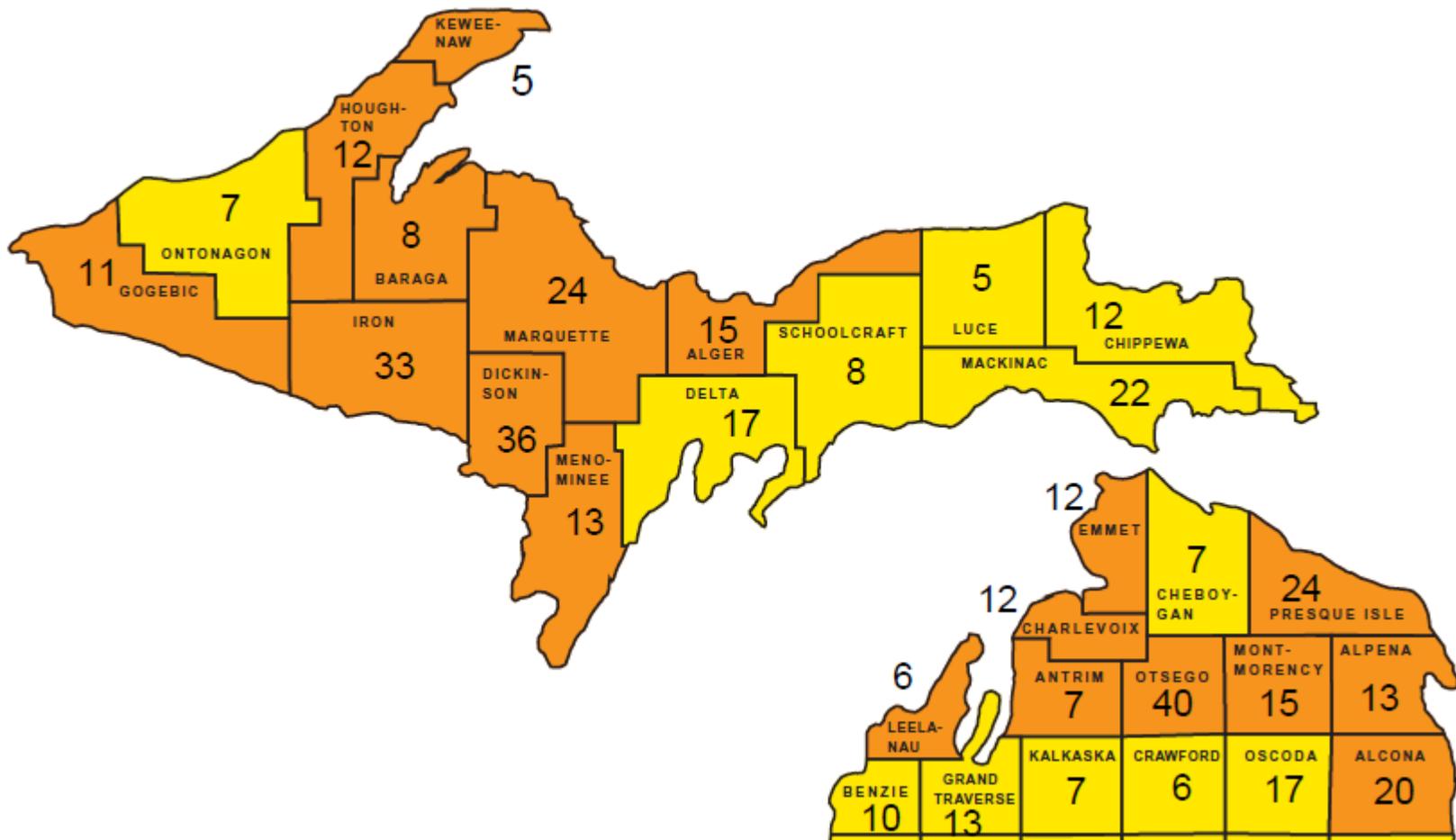
pCi/L	CITY	COUNTY	pCi/L	CITY	COUNTY
458	REPUBLIC	Marquette	171	HILLSDALE	Hillsdale
429	REPUBLIC	Marquette	169	REPUBLIC	Marquette
410	REPUBLIC	Marquette	168	MUNISING	Alger
329	ANN ARBOR	Washtenaw	168	L'ANSE	Baraga
300	REPUBLIC	Marquette	167	ANN ARBOR	Washtenaw
276	JONESVILLE	Hillsdale	166	ADA	Kent
251	JONESVILLE	Hillsdale	163	GRAND RAPIDS	Kent
226	HILLSDALE	Hillsdale	163	MANCHESTER	Washtenaw
220	JONESVILLE	Hillsdale	152	NILES	Berrien
194	PRESQUE ISLE	Presque Isle	151	IDA	Monroe
182	JONESVILLE	Hillsdale	143	JONESVILLE	Hillsdale
180	REPUBLIC	Marquette	141	HOWELL	Livingston
177	ANN ARBOR	Washtenaw	140	HILLSDALE	Hillsdale
176	ANN ARBOR	Washtenaw	138	JONESVILLE	Hillsdale
175	ANN ARBOR	Washtenaw	137	CHAMPION	Marquette

EPA Radon Zones

- Zone 1 – Higher potential for radon levels above the 4 pCi/l guideline.**
- Zone 2 – moderate potential for radon levels above the 4 pCi/l guideline.**
- Zone 3 – Lower potential for radon levels above the 4 pCi/l guideline.**

Percent of short-term test kits greater than or equal to 4.0 pCi/l





Short-term Radon Tests
Ottawa County Summary – data 1992 to June 2014

City	Total	4.0 pCi/l or greater	Percent	Highest (pCi/l)
ALLENDALE	121	7	6	9.4
CONKLIN	24	1	4	5.3
COOPERSVILLE	113	24	21	10.8
GRAND HAVEN	328	13	4	8.9
HOLLAND	793	35	4	14.7
HUDSONVILLE	1,206	172	14	20.9
JAMESTOWN	2	0	0	1.0
JENISON	3,387	1,763	52	69.4
LAMONT	4	1	25	7.4
MARNE	67	14	21	14.9
NUNICA	10	0	0	1.9
SPRING LAKE	159	9	6	32.1
WEST OLIVE	107	5	5	8.9
ZEELAND	301	31	10	24.8
TOTAL	6,622	2,075	31	



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