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DEPARTMENT OF ENVIRONMENTAL PROTECTION



Bureau of Radiation Protection

U.S. EPA Region III Stakeholder Meeting

Testing and Mitigation of a Complex Multifamily Building

Jeremy Ling, Precision Inspections and Radon Solutions

And

Bob Lewis, PA DEP, Radon Division

Josh Shapiro, Governor

Rich Negrin, Secretary



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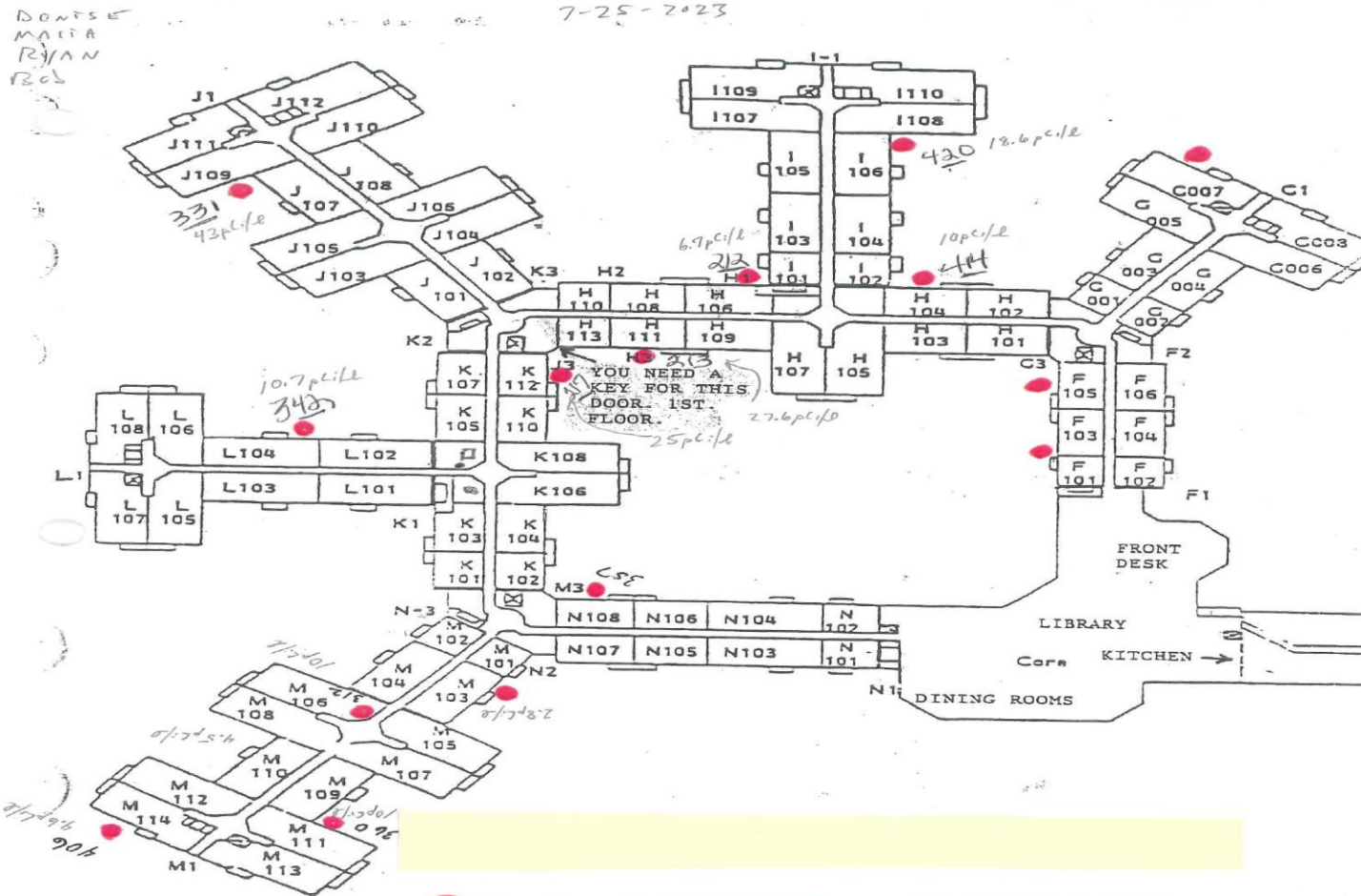
Lancaster Co. Retirement Community

Two Campuses

Josh Shapiro, Governor

Rich Negrin, Secretary

Retirement Center Floor Plan



**RADON SYSTEMS INSTALLED
TO DATE AS 2/16/23**



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- Testing Strategy follows MAMF-2017
- 100% testing of occupied ground contact units.
- 10% of upper floors.
- Large open areas, one kit per 2,000 SF



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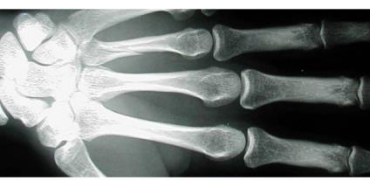
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- Three-year plan, 2022 thru 2024
- Projected to deploy 817 test kits over three years.
- To date 513 test kits deployed at two campuses.



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- Test results breakdown:
 - 351 (68%) \leq to 4 pCi/L
 - 64 (12%) $>4 <10$ pCi/L
 - 28 (5%) ≥ 10 pCi/L
 - 59 duplicates
 - 11 tampered with

Lancaster Co. Retirement Complex

Retirement Community

- Less than 4 pCi/L- 79%
- 4 to 10 pCi/L- 14%
- > 10 pCi/L- 6%

State-wide Rn. Data

- Less than 4 pCi/L- 62%
- 4 to 10 pCi/L- 23%
- >10 pCi/L- 15%



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Initial test result 4-8 pCi/L follow up with
~ 9-month long term

Initial test result >8 pCi/L, follow up with
second short-term

Multifamily Housing



Dual Four-Story Pipe Run



Potential footer may have impeded PFE. Added two suction Pts. On either side.

Outside suction pts. can prohibit adding additional suction pts. To affected units.

Fan Mount on Roof



Box for fan support
had to be installed by
roofer.

Fan Mounts and Electrical Run



Five-story lift



Safety large concern, both for user and residents.

Bottom unit cordoned off for safety.

Lift Set-up.



Safety perimeter.

~\$2,000/wk.

Pipe Mounting Brackets



Special stainless-steel brackets,
custom fabricated.

~\$85/ea. Seven bracket per
system.

Through the Footer.



Used wet core drilling using 5" bit thru footer. Footer approx. 22" thick.

Electrical Run



Licensed electrician required, supplied by Retirement Complex.

Electrical Work



Multifamily Mitigation



Pipe Run and Aluminum Bracket



Brackets at ~ 7 foot intervals.

All pvc Schedule 40 pipe used.

Pipe Run



Multifamily Mitigation

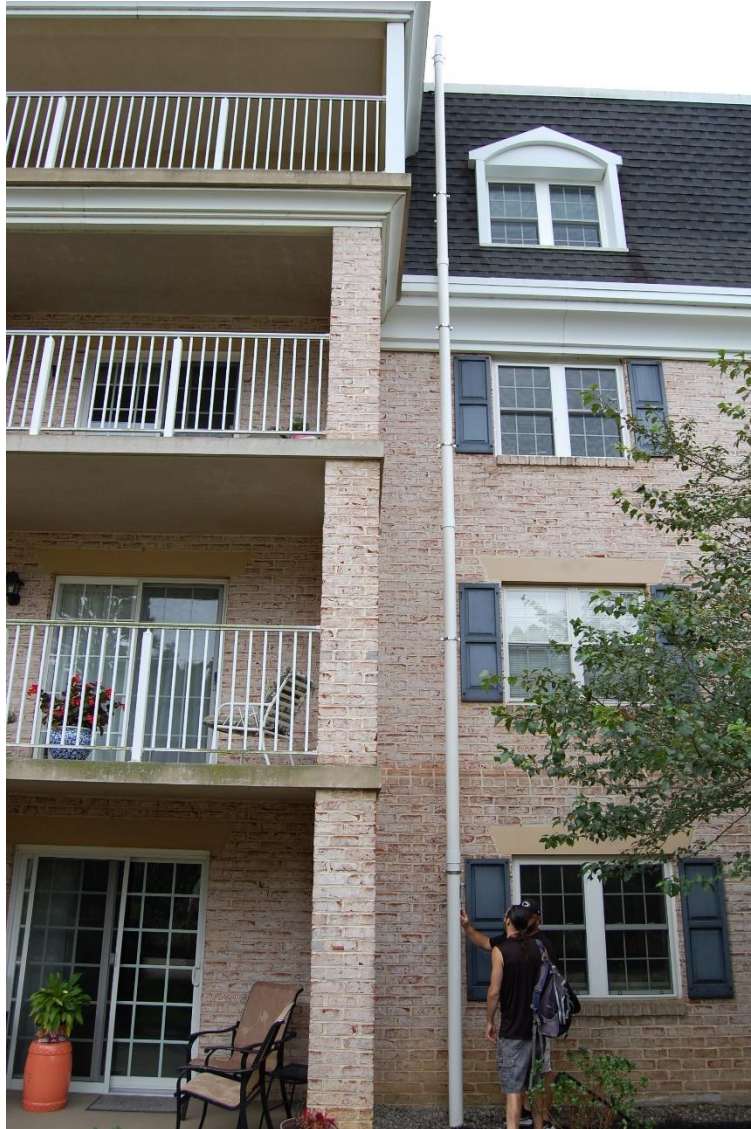


Waterproof U-tube



U-Tube Manometer in outside protective box.

Four Story pipe Run



Meeting with Facility Staff



Roof Access



Roof Access



Exhaust Gas Sampling

North
Complex
36 roof-
top
exhaust
fans



Exhaust Gas Sampling



Grab
sample
of roof
top
exhaust
.

ania
ENVIRONMENTAL

North Complex

All Roof-top Exhausts	
4.5	10.1
10.0	24.9
2.8	6.7
18.6	10
27.6	4.6
10.7	43.4

PA Radon Division

Location	Sample Results (pCi/L)
K101, Fan in window well	46
EMO22, all ground lvl. Exh.	6.1
EMO20	2.3
EMO24	1.2
EMO23	2.1
E-13	22.1



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