

School Year: **24-25**

| | | | |
|-----------------------|--|--|--|
| Facility: | Westland Middle School | | |
| Address: | 5511 Massachusetts Avenue | | |
| | Bethesda, MD 20816 | | |
| Reason for Testing: | Scheduled Re-Testing - <input checked="" type="checkbox"/> 2-year or <input type="checkbox"/> 5-year schedule <input type="checkbox"/> Clearance Testing (Post-Mitigation) <input type="checkbox"/> Building Envelope or HVAC Upgrades <input type="checkbox"/> New Construction – Addition or Facility | | |
| Current Radon Status: | <input checked="" type="checkbox"/> Active Mitigation (2-year regular schedule) <input type="checkbox"/> No Active Mitigation (5-year regular schedule) <input type="checkbox"/> Not Previously Tested (New Facility) | | |
| Round of Testing: | <input type="checkbox"/> Initial Testing -or- <input checked="" type="checkbox"/> Follow-up Testing | | |
| Testing Status: | <input checked="" type="checkbox"/> No Further Testing Needed -or- <input type="checkbox"/> Follow-Up Testing Required | | |

Conclusion (When Testing Status is - No Further Testing Needed)

| Mitigation - | Facility Radon Status: | | |
|---|--|-----------------------|-------|
| <input type="checkbox"/> Not Required <input checked="" type="checkbox"/> Required (≥ 4.0 -pCi/L) Rooms: 100E; 100F | <input checked="" type="checkbox"/> No Change in Status <input type="checkbox"/> Active Mitigation (2-year regular schedule) <input type="checkbox"/> No Active Mitigation (5-year regular schedule) | | |
| Number of Rooms Tested | 59 | Lowest Value (pCi/L) | < 0.3 |
| Number of Rooms (≥ 4.0 -pCi/L) | 2 | Highest Value (pCi/L) | 11.9 |

Instructions: Submit one testing report form per-facility. Include the following as attachments:

Attachment 1- Summary Data Tables – containing the following: (see attached samples tables)

- Testing Results – lab/detector Identification, by room number/name (alpha-numeric order) as depicted on facility map/floor plan provided by the facility/school at the time of test device deployment;
- Summary Results – list of rooms by test result ≥ 2.0 -pCi/L; ≥ 2.7 -pCi/L; ≥ 4.0 -pCi/L; and ≥ 8.0 -pCi/L;
- QA/QC Results - (field blanks and duplicates) indicating location collected; trip and office blanks; and spike sample results;
- Invalid Measurement Locations – missed locations, missing and or damaged/compromised testing devices.

Attachment 2 – Laboratory Report(s)

Attachment 3 – Sampling Location Map(s) – indicating approximate location of samples, duplicates and blanks.

Detector and Deployment

| | | |
|--|---|---|
| Detector/Device Type: | <input checked="" type="checkbox"/> Passive | <input checked="" type="checkbox"/> Charcoal Absorption (CAD) <input type="checkbox"/> Alpha Track (ATD) <input type="checkbox"/> Other |
| | <input type="checkbox"/> Continuous | <input type="checkbox"/> Electret ion Chamber (EIC) <input type="checkbox"/> Electronic Integration (EID) |
| <i>Other—Specify here:</i> | | |
| Detector/Device Name: | Air Chek – Radon Test Kits | |
| Manufacturer: | Radon Lab | |
| Person(s) Deploying or Retrieving Test Devices and certification number | | Organization/Company |
| Shannon King | | KCI Technologies, Inc. |
| | | |
| | | |
| <i>If noncertified individuals, the qualified measurement professional providing oversight -</i> | | |
| Tyler McCleaf, CSP – Cert. #111004 – RMP | | KCI Technologies, Inc. |

Testing

| | | | | | |
|---|------------------------|---|--|---|--|
| <input checked="" type="checkbox"/> Short-Term | Length of Test (days): | 3 | Date of Deployment and Retrieval (mm/dd/yy): | 02/04/25 | 03/24/25 |
| <input type="checkbox"/> Long-Term | | | | 02/07/25 | 03/27/25 |
| Does the test period include weekends, school breaks or holidays? | | | | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| <i>If "Yes" please explain/detail in the space below:</i> | | | | | |
| Was HVAC operating under occupied conditions? | | | | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| <i>If "No" please explain/detail in the space below:</i> | | | | | |

Testing (continued)

| Round of Testing | Detectors Deployed | | | | Total |
|-----------------------------|--------------------|-----------|----------------|-----------|-------|
| | Ground-Contact | | Upper-Level(s) | | |
| | Initial | Follow-Up | Initial | Follow-Up | |
| Test Locations ¹ | 54 | 4 | 3 | 0 | 61 |
| Duplicates ² | 6 | 1 | 1 | 0 | 8 |
| Field Blanks ³ | 3 | 1 | 0 | 0 | 4 |
| Grand Total | | | | | 73 |

1 – include all detectors deployed (duplicates, field blanks); 1 detector per occupied (or intended to be occupied) ground-contact space ≤ 2,000-square feet; large spaces ≥ 2,000-square feet - 1 detector per 2,000-square feet or part thereof); and upper floors - 10% of all occupied or intended to be occupied rooms per floor (these are in addition to ground contact locations)

2 - 10% of all locations tested, per floor

3 – 5% of all locations tested, per floor

Quality Assurance / Quality Control (QA/QC)

A Quality Assurance plan that is consistent with ANSI/AARST MS-QA (Radon Measurement Systems Quality Assurance) was submitted under separate cover, and is available to review at the MCPS Radon Testing and Mitigation Program website. The following number of QA/QC samples are associated this facility.

| Round of Testing | QA/QC Samples | | Total |
|-------------------------------|----------------|-----------|-------|
| | Initial | Follow-Up | |
| Spikes ¹ | Not applicable | | 10 |
| Trip Blanks ² | 1 | 1 | 2 |
| Office Blanks ^{3, 4} | 1 | 1 | 2 |
| | | | 14 |

1 - 3% of EIC detectors; and 3% from each LOT of CAD and ATD detectors; a maximum of 6-spiked measurements per month for both EIC detectors and each LOT of CAD and ATD detectors.

2 – One per shipping container from start of detector deployment

3 – One per facility tested as devices are removed/allocated from the storage location for deployment;

4 - One additional blank, analyzed prior to deployment, for storage locations that have not been evaluated or monitored, for detectors that have been stored for more than 30-day durations.

Quality Assurance / Quality Control (continued)

| | |
|---|---|
| Spike Sample Lab Results. Measured values are satisfactory, i.e., within $\pm 25\%$ of the chamber's reference value? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Quality Control measurements comply with QA/QC requirements in the submitted testing organization's/company's QA plan? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| | Round of Testing |
| | Initial |
| | Follow-Up |
| All Field, Trip and Office Blanks are \leq (less than or equal to) to the Method Detection Limit? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| For all Duplicate Samples ¹ , the higher value is $\leq 2x$ the lower value? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| For all Duplicate Samples ¹ , Relative Percent Difference(s) (RPD) ² are less than the Warning Level ³ ? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| For all Duplicate Samples ¹ , Relative Percent Difference(s) (RPD) ² are less than the Control Level ³ ? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |

1 – Duplicate Control – a “NO” response constitute a control failure and the space/location represented by the duplicate sample becomes an invalid measurement location and should be listed in the “Invalid Measurement Locations” Table attached to this report.

2 - The objective of duplicate tests is to assess the precision error of the measurement method or, how well two side-by-side measurements agree or disagree. Precision involving duplicates is calculated by using Relative Percent Difference (RPD). RPD is equal to the difference between the higher test result minus the lower value test result divided by the average of the two duplicate test results, multiplied by 100. The RPD result is then compared to the warning and control limits.

3 - The Warning Level is set at the deviation from ideal performance that would be expected to occur by chance only 5% of the time, and Control Limits are set at that deviation from ideal performance that would be expected to occur by chance only 1% of the time. The Warning Level indicates a potential problem, which should be investigated. The Control Level indicates that the measurement system should be subject to corrective action.

The control and warning levels for duplicates, based on the averaged duplicate test result, are -

| Average concentration of the two duplicate test results | Warning Level | Control Level |
|---|---------------|----------------|
| < 2.0-pCi/L | 1-pCi/L | Not applicable |
| Between 2.0 and 3.9-pCi/L | 50% RPD | 67% RPD |
| ≥ 4.0 -pCi/L | 28% RPD | 36% RPD |

Summary of Test Results¹ and Determination of Valid Measurements²

| Round of Testing | Ground-Contact | | Upper-Level(s) | | Total |
|--|----------------|-----------|----------------|-----------|-------|
| | Initial | Follow-Up | Initial | Follow-Up | |
| Number of test locations: | 54 | 2 | 3 | 0 | 59 |
| Number of locations ≥ 8.0 -pCi/L: | 1 | 0 | 0 | 0 | 1 |
| Number of locations ≥ 4.0 and ≤ 8 -pCi/L: | 1 | 1 | 0 | 0 | 2 |
| Number of locations ≥ 2.7 and < 4 -pCi/L: | 2 | 1 | 0 | 0 | 3 |
| Number of locations ≥ 2.0 and < 2.7 -pCi/L: | 5 | 0 | 0 | 0 | 5 |
| Number of missing required test locations ³ : | 1 | 0 | 0 | 0 | 1 |
| Number of failed duplicate control locations: | 0 | 0 | 0 | 0 | 0 |
| Percentage of missing test locations for the facility ^{4,5} : | 1.85% | 0 | 0 | 0 | 1.69% |

1 – for locations with multiple test results, report consistent with Section 7.2(When Two Test Results Disagree) and 8.1.2 (Averaging) of ANSI/AARST MA-MFLB 2023 – Conducting Measurements of Radon in Multifamily, School, Commercial and Mix-Use Buildings;

2 - the allowance is to be calculated individually for Ground-Contact and Upper-Level(s) Test Locations;

3 – includes missed or inaccessible locations upon deployment or retrieval, damaged (not able to analyze) and missing detectors upon retrieval;

4 – if all valid measurements are < 4.0 -pCi/L and the total number of test locations are ≥ 18 , there is an allowance of $\leq 33\%$. If less than 18 test locations please review section 6.2 of the ANSI/AARST MA-MFLB 2023;

5 – if any valid measurements are ≥ 4.0 -pCi/L and the total number of test locations are ≥ 20 , there is an allowance of $\leq 25\%$ of the total locations tested. If less than 20 test locations please review section 6.2 of the ANSI/AARST MA-MFLB 2023.

Summary of Test Results¹ and Determination of Valid Measurements² (continued)

| | Round of Testing | Initial | Follow-Up |
|---|------------------|---|---|
| Were test devices deployed in all occupied and intended to be occupied rooms in contact with the ground, and, if applicable, 10% of upper floor rooms? | | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Were valid measurements obtained in all occupied and intended to be occupied rooms in contact with the ground, and, if applicable, 10% of upper floor rooms? | | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| <i>If Yes to both above – then Testing Status – ‘No Further Testing Needed’ mark ‘NA’ below and complete Conclusions section</i> | | | |
| If No to either above, were all results obtained under 4.0-pCi/L and were sufficient valid measurements obtained?^{1,2} <i>If Yes, then - ‘No Further Testing Needed’ complete Conclusion section on first page. If No, then - ‘Follow-up Testing Required’ continue below.</i> | | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA |

1 – if all valid measurements are <4.0-pCi/L and the total number of test locations are ≥18, there is an allowance of ≤33%. If less than 18 test locations please review section 6.2 of the ANSI/AARST MA-MFLB 2023 – Conducting Measurements of Radon in Multifamily, School, Commercial and Mix-Use Buildings to determine the allowance;
 2 – if any valid measurements are ≥4.0-pCi/L and the total number of test locations are ≥20, there is an allowance of ≤25% of the total locations tested. If less than 20 test locations please review section 6.2 of the ANSI/AARST MA-MFLB 2023 – Conducting Measurements of Radon in Multifamily, School, Commercial and Mix-Use Buildings to determine the number the allowance.

Follow-Up Testing

Required –

- If an insufficient number (greater than the allowance provided above) of valid measurements were obtained during the initial round of testing (the “missing required test locations” in the table above);
- Any location test results ≥ 4.0-pCi/L;
- Any location where duplicates fail QC checks; and or
- At the discretion of MCPS IAQ Staff

| Reason for Follow-Up Testing | Testing Procedure | Follow-up Result | Conclusion |
|-------------------------------------|--|------------------|-----------------------------------|
| Insufficient Number of Measurements | Follow same procedures as Initial Testing | Not Applicable | Follow Initial Testing procedures |
| Results ≥ 4.0-pCi/L | Deploy two Short-term follow-up tests and required blanks and duplicates; Average the results of the two tests | ≥4.0 | Mitigation Required |
| Failed QC checks | | ≥2.0 and <4.0 | Consider Mitigation |
| | | <2.0 | Mitigation Not Required |

➤ ***If follow-up testing identifies additional spaces requiring additional testing it will be performed as part of the ongoing follow-testing round.***

Attachment 1:
Summary Data Tables

| Table 1- Radon Testing Results | | |
|---|--------------------|---------------|
| Westland Middle School | | |
| Test Period: 2/4/2025 - 2/7/2025 | | |
| Kit Number | Room / Area | Result |
| 11931429 | 101 | 2.6 |
| 11931402 | 102 | 1.9 |
| 11931481 | 108 | < 0.3 |
| 11931477 | 108 | 0.7 |
| 11931462 | 109 | 0.7 |
| 11931476 | 109 | 0.8 |
| 11931473 | 110 | 0.6 |
| 11931474 | 111 | 1.0 |
| 11931471 | 112 | < 0.3 |
| 11931468 | 112 | < 0.3 |
| 11931461 | 113 | 1.1 |
| 11931467 | 114 | < 0.3 |
| 11931472 | 115 | < 0.3 |
| 11931463 | 116 | < 0.3 |
| 11931466 | 117 | < 0.3 |
| 11931460 | 118 | < 0.3 |
| 11931464 | 119 | < 0.3 |
| 11931465 | 121 | 0.6 |
| 11931458 | 125 | 1.3 |
| 11931459 | 125 | < 0.3 |
| 11931456 | 127 | 0.7 |
| 11931454 | 127 | 1.2 |
| 11931479 | 128 | < 0.3 |
| 11931451 | 129 | 1.0 |
| 11931452 | 130 | 1.2 |
| 11931448 | 131 | < 0.3 |
| 11931447 | 133 | 1.5 |
| 11931438 | 135 | < 0.3 |
| 11931443 | 137 | < 0.3 |
| 11931445 | 138 | < 0.3 |
| 11931446 | 138 | < 0.3 |
| 11931442 | 139 | 1.0 |
| 11931450 | 140 | < 0.3 |
| 11931444 | 142 | < 0.3 |
| 11931439 | 148 | 0.5 |
| 11931440 | 148 | < 0.3 |
| 11931430 | 149 | 1.3 |

| Table 1- Radon Testing Results | | |
|---|--------------------|---------------|
| Westland Middle School | | |
| Test Period: 2/4/2025 - 2/7/2025 | | |
| Kit Number | Room / Area | Result |
| 11931436 | 149 | 1.7 |
| 11931478 | 152 | 1.3 |
| 11931482 | 205 | 1.0 |
| 11931480 | 214 | 1.0 |
| 11931483 | 225 | 0.6 |
| 11931484 | 225 | < 0.3 |
| 11931421 | 100A | 1.4 |
| 11931417 | 100B | 1.4 |
| 11931422 | 100C | 1.0 |
| 11931418 | 100D | 3.9 |
| 11931423 | 100E | 3.0 |
| 11931424 | 100F | 1.1 |
| 11931426 | 100H | 1.6 |
| 11931427 | 101B | 2.1 |
| 11931428 | 101B | 2.1 |
| 11931431 | 101C | 1.6 |
| 11931432 | 101D | 3.9 |
| 11931433 | 101E | 11.9 |
| 11931435 | 101F | 4.8 |
| 11931453 | 130A | 0.7 |
| 11931457 | 130B | 0.9 |
| 11931449 | 130C | 2.3 |
| 11931455 | 130C | 1.0 |
| 11931441 | BOYS LOCKER ROOM | 1.0 |
| 11931469 | CAFETERIA | 0.9 |
| 11931470 | CAFETERIA | < 0.3 |
| 11931434 | CALM ROOM | 2.4 |
| 11931437 | GIRLS LOCKER ROOM | 2.1 |
| 11931416 | MAIN OFFICE | 1.0 |
| 11931475 | STAGE | < 0.3 |

| Table 3 - QC Radon Testing Results | | | |
|---|----------------|--------------------|---------------|
| Westland Middle School | | | |
| Test Period: 2/4/2025 - 2/7/2025 | | | |
| Kit Number | QC Type | Room / Area | Result |
| 11931477 | FB | 108 | 0.7 |
| 11931476 | D | 109 | 0.8 |
| 11931468 | D | 112 | < 0.3 |
| 11931459 | FB | 125 | < 0.3 |
| 11931454 | D | 127 | 1.2 |
| 11931446 | D | 138 | < 0.3 |
| 11931440 | FB | 148 | < 0.3 |
| 11931436 | D | 149 | 1.7 |
| 11931484 | D | 225 | < 0.3 |
| 11931428 | D | 101B | 2.1 |
| 11931544 | OB | OFFICE BLANK | < 0.3 |
| 11931543 | TB | TRAVEL BLANK | < 0.3 |

Table 3a - Duplicate Worksheet / Data Validation

Westland Middle School

Test Period: 2/4/2025 - 2/7/2025

| Sample ID | | | Duplicate Concentrations (pCi/L) and OC Checks | | | | | | | |
|-------------|----------|-------------|--|-------|-------------------------|-----------------|-------------------------|---------|--------------------------------------|----------|
| Kit Numbers | | Room / Area | Higher | Lower | Check #1 (Pass/Fail) | 2x the Lower | Check #2 (Pass/Fail) | Average | Relative Percent Difference (RPD) | Check #3 |
| 11931427 | 11931428 | 101B | 2.1 | 2.1 | ✓ | 4.2 | PASS | 2.1 | 0.0% | ✓ |
| 11931430 | 11931436 | 149 | 1.7 | 1.3 | ✓ | 2.6 | PASS | 1.5 | <1-pCi/L | ✓ |
| 11931445 | 11931446 | 138 | 0.3 | 0.3 | ✓ | 0.6 | PASS | 0.3 | <1-pCi/L | ✓ |
| 11931456 | 11931454 | 127 | 1.2 | 0.7 | ✓ | 1.4 | PASS | 1.0 | <1-pCi/L | ✓ |
| 11931471 | 11931468 | 112 | 0.3 | 0.3 | ✓ | 0.6 | PASS | 0.3 | <1-pCi/L | ✓ |
| 11931462 | 11931476 | 109 | 0.8 | 0.7 | ✓ | 1.4 | PASS | 0.8 | <1-pCi/L | ✓ |
| 11931483 | 11931484 | 225 | 0.6 | 0.3 | ✓ | 0.6 | PASS | 0.5 | <1-pCi/L | ✓ |

NOTES:

QC Check #1 - Data Entry

QC Check #2 - Higher duplicate concentration is < or = to 2x the Lower

QC Check #3 - Meets RPD Limits, by average duplicate concentration

- enter 2 if RPD is BELOW warning and control levels, AND passes QC Check 1 and 2
- enter 1 if RPD is ABOVE warning and BELOW control levels, AND passes QC Check 1 and 2
- enter 0 if RPD is ABOVE control level, or 'FAILS' QC Check 1 or 2

| Average (pCi/L) | Warning Level | Control Level |
|---------------------|---------------|---------------|
| < 2.0 | 1-pCi/L | NA |
| Between 2.0 and 3.9 | 50% RPD | 67% RPD |
| ≥ 4.0 | 28% RPD | 36% RPD |

| Table 1- Radon Testing Results | | |
|---|--------------------|---------------|
| Westland Middle School RT | | |
| Test Period: 3/24/2025 - 3/27/2025 | | |
| | | |
| Kit Number | Room / Area | Result |
| 11887237 | 101F | < 0.3 |
| 11887238 | 101E | 3.9 |
| 11887244 | 101E | 3.9 |
| 11887249 | 101F | 7.6 |
| 11887250 | 101F | 7.4 |
| 11887251 | 101F | 7.3 |

| Table 3 - QC Radon Testing Results | | | |
|---|----------------|--------------------|---------------|
| Westland Middle School RT | | | |
| Test Period: 3/24/2025 - 3/27/2025 | | | |
| | | | |
| Kit Number | QC Type | Room / Area | Result |
| 11887251 | D | 101F | 7.3 |
| 11887237 | FB | 101F | < 0.3 |
| 11886664 | OB | OFFICE BLANK | < 0.3 |
| 11886691 | TB | TRAVEL BLANK | < 0.3 |

Table 3a - Duplicate Worksheet / Data Validation

Wheaton High School RT

Test Period: 3/25/2025 - 3/28/2025

| Sample ID | | Duplicate Concentrations (pCi/L) and OC Checks | | | | | | | | |
|-------------|----------------------|--|--------|-------|-------------------------|-----------------|-------------------------|----------------------|--------------------------------------|----------|
| Kit Numbers | | Room / Area | Higher | Lower | Check #1 (Pass/Fail) | 2x the Lower | Check #2 (Pass/Fail) | Average | Relative Percent Difference (RPD) | Check #3 |
| 11886561 | 11886669 11886670 | 1709 | 0.3 | 0.3 | ✓ | 0.6 | PASS | 0.3 | <1-pCi/L | ✓ |
| | | | | | | | Average (pCi/L) | Warning Level | Control Level | |
| | | | | | | | < 2.0 | 1-pCi/L | NA | |
| | | | | | | | Between 2.0 and 3.9 | 50% RPD | 67% RPD | |
| | | | | | | | ≥ 4.0 | 28% RPD | 36% RPD | |

NOTES:

QC Check #1 - Data Entry

QC Check #2 - Higher duplicate concentration is < or = to 2x the Lower

QC Check #3 - Meets RPD Limits, by average duplicate concentration

- enter 2 if RPD is BELOW warning and control levels, AND passes QC Check 1 and 2
- enter 1 if RPD is ABOVE warning and BELOW control levels, AND passes QC Check 1 and 2
- enter 0 if RPD is ABOVE control level, or 'FAILS' QC Check 1 or 2

Attachment 2:
Laboratory Reports

Radon test result report for:

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|----------|---------|-----------------------|-----------------------|------------|------------|
| 11931421 | 100A | 2025-02-04 @ 9:00 am | 2025-02-07 @ 8:00 am | 1.4 ± 0.4 | 2025-02-11 |
| 11931417 | 100B | 2025-02-04 @ 9:00 am | 2025-02-07 @ 9:00 am | 1.4 ± 0.4 | 2025-02-11 |
| 11931422 | 100C | 2025-02-04 @ 9:00 am | 2025-02-07 @ 9:00 am | 1.0 ± 0.3 | 2025-02-11 |
| 11931418 | 100D | 2025-02-04 @ 9:00 am | 2025-02-07 @ 9:00 am | 3.9 ± 0.4 | 2025-02-11 |
| 11931423 | 100E | 2025-02-04 @ 9:00 am | 2025-02-07 @ 10:00 am | 3.0 ± 0.4 | 2025-02-11 |
| 11931424 | 100F | 2025-02-04 @ 9:00 am | 2025-02-07 @ 9:00 am | 1.1 ± 0.3 | 2025-02-11 |
| 11931426 | 100H | 2025-02-04 @ 9:00 am | 2025-02-07 @ 9:00 am | 1.6 ± 0.4 | 2025-02-11 |
| 11931429 | 101 | 2025-02-04 @ 9:00 am | 2025-02-07 @ 9:00 am | 2.6 ± 0.4 | 2025-02-11 |
| 11931427 | 101B | 2025-02-04 @ 9:00 am | 2025-02-07 @ 9:00 am | 2.1 ± 0.4 | 2025-02-11 |
| 11931428 | 101B | 2025-02-04 @ 9:00 am | 2025-02-07 @ 9:00 am | 2.1 ± 0.4 | 2025-02-11 |
| 11931431 | 101C | 2025-02-04 @ 9:00 am | 2025-02-07 @ 9:00 am | 1.6 ± 0.4 | 2025-02-11 |
| 11931432 | 101D | 2025-02-04 @ 9:00 am | 2025-02-07 @ 9:00 am | 3.9 ± 0.4 | 2025-02-11 |
| 11931433 | 101E | 2025-02-04 @ 9:00 am | 2025-02-07 @ 9:00 am | 11.9 ± 1.0 | 2025-02-11 |
| 11931435 | 101F | 2025-02-04 @ 9:00 am | 2025-02-07 @ 9:00 am | 4.8 ± 0.4 | 2025-02-11 |
| 11931402 | 102 | 2025-02-04 @ 9:00 am | 2025-02-07 @ 9:00 am | 1.9 ± 0.4 | 2025-02-11 |
| 11931481 | 108 | 2025-02-04 @ 10:00 am | 2025-02-07 @ 9:00 am | 0.7 ± 0.3 | 2025-02-11 |
| 11931477 | 108 | 2025-02-04 @ 10:00 am | 2025-02-07 @ 9:00 am | < 0.3 | 2025-02-11 |
| 11931476 | 109 | 2025-02-04 @ 10:00 am | 2025-02-07 @ 9:00 am | 0.8 ± 0.4 | 2025-02-11 |
| 11931462 | 109 | 2025-02-04 @ 10:00 am | 2025-02-07 @ 9:00 am | 0.7 ± 0.3 | 2025-02-11 |
| 11931473 | 110 | 2025-02-04 @ 10:00 am | 2025-02-07 @ 9:00 am | 0.6 ± 0.3 | 2025-02-11 |
| 11931474 | 111 | 2025-02-04 @ 10:00 am | 2025-02-07 @ 9:00 am | 1.0 ± 0.3 | 2025-02-11 |
| 11931468 | 112 | 2025-02-04 @ 10:00 am | 2025-02-07 @ 9:00 am | < 0.3 | 2025-02-11 |
| 11931471 | 112 | 2025-02-04 @ 10:00 am | 2025-02-07 @ 9:00 am | < 0.3 | 2025-02-11 |
| 11931461 | 113 | 2025-02-04 @ 10:00 am | 2025-02-07 @ 9:00 am | 1.1 ± 0.4 | 2025-02-11 |
| 11931467 | 114 | 2025-02-04 @ 10:00 am | 2025-02-07 @ 9:00 am | < 0.3 | 2025-02-11 |
| 11931472 | 115 | 2025-02-04 @ 10:00 am | 2025-02-07 @ 9:00 am | < 0.3 | 2025-02-11 |
| 11931463 | 116 | 2025-02-04 @ 10:00 am | 2025-02-07 @ 9:00 am | < 0.3 | 2025-02-11 |
| 11931466 | 117 | 2025-02-04 @ 10:00 am | 2025-02-07 @ 9:00 am | < 0.3 | 2025-02-11 |
| 11931460 | 118 | 2025-02-04 @ 10:00 am | 2025-02-07 @ 9:00 am | < 0.3 | 2025-02-11 |
| 11931464 | 119 | 2025-02-04 @ 10:00 am | 2025-02-07 @ 9:00 am | < 0.3 | 2025-02-11 |
| 11931465 | 121 | 2025-02-04 @ 10:00 am | 2025-02-07 @ 9:00 am | 0.6 ± 0.3 | 2025-02-11 |
| 11931459 | 125 | 2025-02-04 @ 10:00 am | 2025-02-07 @ 9:00 am | < 0.3 | 2025-02-11 |
| 11931458 | 125 | 2025-02-04 @ 10:00 am | 2025-02-07 @ 9:00 am | 1.3 ± 0.3 | 2025-02-11 |
| 11931454 | 127 | 2025-02-04 @ 10:00 am | 2025-02-07 @ 9:00 am | 0.7 ± 0.3 | 2025-02-11 |
| 11931456 | 127 | 2025-02-04 @ 10:00 am | 2025-02-07 @ 9:00 am | 1.2 ± 0.4 | 2025-02-11 |
| 11931479 | 128 | 2025-02-04 @ 10:00 am | 2025-02-07 @ 9:00 am | < 0.3 | 2025-02-11 |
| 11931451 | 129 | 2025-02-04 @ 10:00 am | 2025-02-07 @ 9:00 am | 1.0 ± 0.3 | 2025-02-11 |

Radon test result report for:

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|----------|-------------|-----------------------|-----------------------|-----------|------------|
| 11931452 | 130 | 2025-02-04 @ 10:00 am | 2025-02-07 @ 9:00 am | 1.2 ± 0.4 | 2025-02-11 |
| 11931453 | 130A | 2025-02-04 @ 10:00 am | 2025-02-07 @ 9:00 am | 0.7 ± 0.3 | 2025-02-11 |
| 11931457 | 130B | 2025-02-04 @ 10:00 am | 2025-02-07 @ 9:00 am | 0.9 ± 0.4 | 2025-02-11 |
| 11931449 | 130C | 2025-02-04 @ 10:00 am | 2025-02-07 @ 9:00 am | 2.3 ± 0.4 | 2025-02-11 |
| 11931455 | 130C | 2025-02-04 @ 10:00 am | 2025-02-07 @ 9:00 am | 1.0 ± 0.3 | 2025-02-11 |
| 11931448 | 131 | 2025-02-04 @ 10:00 am | 2025-02-07 @ 9:00 am | < 0.3 | 2025-02-11 |
| 11931447 | 133 | 2025-02-04 @ 10:00 am | 2025-02-07 @ 9:00 am | 1.5 ± 0.3 | 2025-02-11 |
| 11931438 | 135 | 2025-02-04 @ 10:00 am | 2025-02-07 @ 9:00 am | < 0.3 | 2025-02-11 |
| 11931443 | 137 | 2025-02-04 @ 10:00 am | 2025-02-07 @ 9:00 am | < 0.3 | 2025-02-11 |
| 11931446 | 138 | 2025-02-04 @ 10:00 am | 2025-02-07 @ 9:00 am | < 0.3 | 2025-02-11 |
| 11931445 | 138 | 2025-02-04 @ 10:00 am | 2025-02-07 @ 9:00 am | < 0.3 | 2025-02-11 |
| 11931442 | 139 | 2025-02-04 @ 10:00 am | 2025-02-07 @ 10:00 am | 1.0 ± 0.3 | 2025-02-11 |
| 11931450 | 140 | 2025-02-04 @ 10:00 am | 2025-02-07 @ 9:00 am | < 0.3 | 2025-02-11 |
| 11931444 | 142 | 2025-02-04 @ 10:00 am | 2025-02-07 @ 9:00 am | < 0.3 | 2025-02-11 |
| 11931440 | 148 | 2025-02-04 @ 9:00 am | 2025-02-07 @ 9:00 am | < 0.3 | 2025-02-11 |
| 11931439 | 148 | 2025-02-04 @ 9:00 am | 2025-02-07 @ 9:00 am | 0.5 ± 0.3 | 2025-02-11 |
| 11931430 | 149 | 2025-02-04 @ 9:00 am | 2025-02-07 @ 9:00 am | 1.3 ± 0.4 | 2025-02-11 |
| 11931436 | 149 | 2025-02-04 @ 9:00 am | 2025-02-07 @ 9:00 am | 1.7 ± 0.4 | 2025-02-11 |
| 11931478 | 152 | 2025-02-04 @ 10:00 am | 2025-02-07 @ 9:00 am | 1.3 ± 0.4 | 2025-02-11 |
| 11931482 | 205 | 2025-02-04 @ 11:00 am | 2025-02-07 @ 9:00 am | 1.0 ± 0.4 | 2025-02-11 |
| 11931480 | 214 | 2025-02-04 @ 11:00 am | 2025-02-07 @ 9:00 am | 1.0 ± 0.3 | 2025-02-11 |
| 11931483 | 225 | 2025-02-04 @ 11:00 am | 2025-02-07 @ 9:00 am | 0.6 ± 0.3 | 2025-02-11 |
| 11931484 | 225 | 2025-02-04 @ 11:00 am | 2025-02-07 @ 9:00 am | < 0.3 | 2025-02-11 |
| 11931441 | BLR | 2025-02-04 @ 9:00 am | 2025-02-07 @ 9:00 am | 1.0 ± 0.3 | 2025-02-11 |
| 11931470 | CAFETERIA | 2025-02-04 @ 10:00 am | 2025-02-07 @ 9:00 am | < 0.3 | 2025-02-11 |
| 11931469 | CAFETERIA | 2025-02-04 @ 10:00 am | 2025-02-07 @ 9:00 am | 0.9 ± 0.4 | 2025-02-11 |
| 11931434 | CALM ROOM | 2025-02-04 @ 9:00 am | 2025-02-07 @ 9:00 am | 2.4 ± 0.4 | 2025-02-11 |
| 11931437 | GLR | 2025-02-04 @ 9:00 am | 2025-02-07 @ 9:00 am | 2.1 ± 0.4 | 2025-02-11 |
| 11931416 | MAIN OFFICE | 2025-02-04 @ 9:00 am | 2025-02-07 @ 8:00 am | 1.0 ± 0.4 | 2025-02-11 |
| 11931475 | STAGE | 2025-02-04 @ 10:00 am | 2025-02-07 @ 9:00 am | < 0.3 | 2025-02-11 |

February 11, 2025

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

**OFFICE
MAIN**

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|----------------|-----------------------|-----------------------|--------------|-----------------|
| 11931544 | O | 2025-02-04 @ 11:00 am | 2025-02-07 @ 11:00 am | < 0.3 | 2025-02-11 |

Air Chek 1936 Butler Bridge Rd, Mills River, NC 28759-3892 Phone: (828) 684-0893 Fax: (828) 684-8498

February 11, 2025

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

**TRAVEL
MAIN**

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|----------------|-----------------------|-----------------------|--------------|-----------------|
| 11931543 | T | 2025-02-04 @ 11:00 am | 2025-02-07 @ 11:00 am | < 0.3 | 2025-02-11 |

Air Chek 1936 Butler Bridge Rd, Mills River, NC 28759-3892 Phone: (828) 684-0893 Fax: (828) 684-8498

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI TECHNOLOGIES, INC Job Number 20001560

NOMINAL Conditions: Radon Conc 50.6 pCi/L Rel. Hum 50.6% Temp. 70.8 F

Date Start: 12/14/24 Date Stop: 12/17/24 Date Start: _____ Date Stop: _____

Time Start: 0815 Time Stop: 0815 Time Start: _____ Time Stop: _____

Device No.'s: (3) CHAR BAGS Device No.'s: _____

11477880, 11477883, 11477896

B4 Right

Date Start: _____ Date Stop: _____ Date Start: _____ Date Stop: _____

Time Start: _____ Time Stop: _____ Time Start: _____ Time Stop: _____

Device No.'s: _____ Device No.'s: _____

Date Start: _____ Date Stop: _____ Date Start: _____ Date Stop: _____

Time Start: _____ Time Stop: _____ Time Start: _____ Time Stop: _____

Device No.'s: _____ Device No.'s: _____

**Note: All times are in 24-hour (military) notation, Eastern Standard Time (EST)
Background = 7 μ R/h Elevation = 820 ft**

December 23, 2024

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

**SK
MAIN**

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|----------------|----------------------|----------------------|--------------|-----------------|
| 11477880 | SK1 | 2024-12-14 @ 8:00 am | 2024-12-17 @ 8:00 am | 52.0 ± 4.2 | 2024-12-23 |
| 11477883 | SK2 | 2024-12-14 @ 8:00 am | 2024-12-17 @ 8:00 am | 54.6 ± 4.4 | 2024-12-23 |
| 11477896 | SK3 | 2024-12-14 @ 8:00 am | 2024-12-17 @ 8:00 am | 45.5 ± 3.6 | 2024-12-23 |

Air Chek 1936 Butler Bridge Rd, Mills River, NC 28759-3892 Phone: (828) 684-0893 Fax: (828) 684-8498



Radon Test Kit Chain of Custody

Project Name: MCPS Radon – Testing February 4th – February 7th, 2025

Name of Schools:

1. Candlewood ES
2. Viers Mill ES
3. Wayside ES
4. Julius West MS
5. Westland MS

| | Date | Initials |
|----------------------------------|-----------|----------|
| Radon Test Kits Deployed | 2/4/2025 | GM |
| Radon Test Kits Collected | 2/7/2025 | GM |
| Radon Test Kits Shipped to Lab* | 2/7/2025 | GM |
| Radon Test Kits Received by Lab* | 2/10/2025 | GM |

*All samples sent to Air Check, Inc., 2 Saber Way, Ward Hill, MA 01835

April 2, 2025

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|----------------|----------------------|-----------------------|--------------|-----------------|
| 11887238 | 101E | 2025-03-24 @ 8:00 am | 2025-03-27 @ 12:00 pm | 3.9 ± 0.7 | 2025-04-02 |
| 11887244 | 101E | 2025-03-24 @ 8:00 am | 2025-03-27 @ 12:00 pm | 3.9 ± 0.6 | 2025-04-02 |
| 11887237 | 101F | 2025-03-24 @ 8:00 am | 2025-03-27 @ 12:00 pm | < 0.3 | 2025-04-02 |
| 11887249 | 101F | 2025-03-24 @ 8:00 am | 2025-03-27 @ 12:00 pm | 7.6 ± 0.9 | 2025-04-02 |
| 11887250 | 101F | 2025-03-24 @ 8:00 am | 2025-03-27 @ 12:00 pm | 7.4 ± 0.8 | 2025-04-02 |
| 11887251 | 101F | 2025-03-24 @ 8:00 am | 2025-03-27 @ 12:00 pm | 7.3 ± 0.8 | 2025-04-02 |

Air Chek 1936 Butler Bridge Rd, Mills River, NC 28759-3892 Phone: (828) 684-0893 Fax: (828) 684-8498

April 3, 2025

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

**OFFICE
MAIN**

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|----------------|-----------------------|-----------------------|--------------|-----------------|
| 11886664 | OB | 2025-03-24 @ 11:00 am | 2025-03-27 @ 11:00 am | < 0.3 | 2025-04-02 |
| 11886692 | OB | 2025-03-25 @ 11:00 am | 2025-03-28 @ 11:00 am | < 0.3 | 2025-04-02 |
| 11951800 | OB | 2025-03-24 @ 11:00 am | 2025-03-28 @ 11:00 am | < 0.3 | 2025-04-02 |

Air Chek 1936 Butler Bridge Rd, Mills River, NC 28759-3892 Phone: (828) 684-0893 Fax: (828) 684-8498

April 3, 2025

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

**TRAVEL
MAIN**

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|----------------|-----------------------|-----------------------|--------------|-----------------|
| 11886691 | TB | 2025-03-24 @ 11:00 am | 2025-03-27 @ 11:00 am | < 0.3 | 2025-04-02 |
| 11886693 | TB | 2025-03-25 @ 11:00 am | 2025-03-28 @ 11:00 am | < 0.3 | 2025-04-02 |
| 11892493 | TB | 2025-03-24 @ 11:00 am | 2025-03-28 @ 11:00 am | < 0.3 | 2025-04-02 |

Air Chek 1936 Butler Bridge Rd, Mills River, NC 28759-3892 Phone: (828) 684-0893 Fax: (828) 684-8498

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI TECHNOLOGIES, INC Job Number 20002919

NOMINAL Conditions: Radon Conc 7.0 pCi/L Rel. Hum 51.4 % Temp. 70.7 F

Date Start: 3/7/25 Date Stop: 3/10/25 Date Start: _____ Date Stop: _____

Time Start: 0832 Time Stop: 0832 Time Start: _____ Time Stop: _____

Device No.'s: (7) CHAR BAGS Device No.'s: _____

11886401 thru 11886406,

11886410

G3 Right

Date Start: _____ Date Stop: _____ Date Start: _____ Date Stop: _____

Time Start: _____ Time Stop: _____ Time Start: _____ Time Stop: _____

Device No.'s: _____ Device No.'s: _____

Date Start: _____ Date Stop: _____ Date Start: _____ Date Stop: _____

Time Start: _____ Time Stop: _____ Time Start: _____ Time Stop: _____

Device No.'s: _____ Device No.'s: _____

**Note: All times are in 24-hour (military) notation, Eastern Standard Time (EST)
Background = 7 μ R/h Elevation = 820 ft**

March 19, 2025

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

**QC
MAIN**

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|----------------|----------------------|----------------------|--------------|-----------------|
| 11886401 | SK1 | 2025-03-07 @ 9:00 am | 2025-03-10 @ 9:00 am | 7.8 ± 1.1 | 2025-03-19 |
| 11886405 | SK2 | 2025-03-07 @ 9:00 am | 2025-03-10 @ 9:00 am | 7.1 ± 1.1 | 2025-03-19 |
| 11886406 | SK3 | 2025-03-07 @ 9:00 am | 2025-03-10 @ 9:00 am | 7.7 ± 1.1 | 2025-03-19 |
| 11886403 | SK4 | 2025-03-07 @ 9:00 am | 2025-03-10 @ 9:00 am | 7.9 ± 1.2 | 2025-03-19 |
| 11886404 | SK5 | 2025-03-07 @ 9:00 am | 2025-03-10 @ 9:00 am | 7.6 ± 1.2 | 2025-03-19 |
| 11886410 | SK6 | 2025-03-07 @ 9:00 am | 2025-03-10 @ 9:00 am | 7.0 ± 1.1 | 2025-03-19 |
| 11886402 | SK7 | 2025-03-07 @ 9:00 am | 2025-03-10 @ 9:00 am | 8.6 ± 1.2 | 2025-03-19 |

Air Chek 1936 Butler Bridge Rd, Mills River, NC 28759-3892 Phone: (828) 684-0893 Fax: (828) 684-8498



Radon Test Kit Chain of Custody

Project Name: MCPS Radon – Testing March 24th – March 27th, 2025

Name of Schools:

- | | |
|----------------------|----------------------------|
| 1. Beverly Farms ES | 7. Julius West MS |
| 2. Bradley Hills ES | 8. Parkland MS |
| 3. Cabin John MS | 9. Rockville HS |
| 4. Springbrook HS | 10. Westland MS |
| 5. Thomas Edison HS | 11. Charles W. Woodward HS |
| 6. Walter Johnson HS | 12. Walt Whitman HS |

| | Date | Initials |
|----------------------------------|-----------|----------|
| Radon Test Kits Deployed | 3/24/2025 | BMM |
| Radon Test Kits Collected | 3/27/2025 | BMM |
| Radon Test Kits Shipped to Lab* | 3/28/2025 | BMM |
| Radon Test Kits Received by Lab* | 4/01/2025 | BMM |

*All samples sent to Air Check, Inc., 2 Saber Way, Ward Hill, MA 01835



MCPS RADON TESTING – EXECUTIVE SUMMARY

| | |
|--------------------------|---|
| Site Name | Westland Middle School |
| Date of Test Report | 05/12/2022 |
| Round of Testing | Initial <u>Follow-up</u> Post Remediation 2 Year Testing 5 Year Testing HVAC Upgrade Window Replacement New Addition New Facility |
| # Rooms Tested | 1 |
| # Rooms \geq 4.0 pCi/L | 0 |
| Lowest Value | <0.3 pCi/L |
| Highest Value | 0.7 pCi/L |

Project Status

Current Project Status at this time: Testing completed; no further action needed



May 12, 2022

Mr. Brian Croyle, PG, CHMM
Environmental Specialist
Montgomery County Public Schools
Gaithersburg, MD 20879

Re: **Radon Testing Services**
KCI Job # 122108316

Location: Westland Middle School
5511 Massachusetts Ave.
Bethesda, MD 20816

Dear Mr. Croyle:

KCI Technologies, Inc. (KCI) is pleased to submit the following report to Montgomery County Public Schools (MCPS) pursuant to completing a “short-term” 3 day radon test for the Westland Middle School, located at 5511 Massachusetts Ave. Bethesda, MD 20816 (subject site).

Scope of Services:

KCI conducted radon testing at the subject site to evaluate indoor radon levels relative to the USEPA's recommended action level of 4.0 picocuries per Liter (pCi/L) - the level at which EPA recommends that schools take action to reduce the level. KCI conducted the radon testing in accordance with American Association of Radon Scientists and Technologists (AARST) *Protocol for Conducting Measurements of Radon and Radon Decay Products in Schools and Large Buildings*. A National Radon Proficiency Program (NRPP) Radon Measurement Specialist (certification #111004 RT) supervised the testing. Additional information on radon management and the health effects of radon exposure is available from <https://www.montgomeryschoolsmd.org> or www.epa.gov/radon.

KCI visited the site on March 21, 2022 and deployed three (3) activated charcoal (AC) radon test kits. KCI deployed radon test kits in all frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance.

KCI sampled the following locations during this follow-up test:

1. Rooms with missing test kits from the Radon 2022 testing period (i.e. test kit was deployed but not recovered),
2. Rooms with invalidated test kits from the Radon 2022 testing period (e.g. an open window in the room or disturbed test kit),
3. Rooms which were locked/inaccessible during the Radon 2022 testing period,
4. Rooms with elevated radon results (i.e. ≥ 3.5 pCi/L),
5. Rooms previously tested for radon but not tested in Radon 2022, and
6. Additional rooms that require testing (if applicable.)

A floor plan map of the building with the test locations is included as Attachment A of this report.

As a quality control measure, KCI also included duplicate samples, field blanks, lab transit blanks, and office blanks in accordance with AARST recommendations. In addition, KCI submitted test kits to Bowser-Morner, Inc. as spike samples. The spiked tests were exposed to a known radon concentration by Bowser-Morner prior to being returned to the laboratory for analysis.

KCI returned to the site on March 24, 2022 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Airchek, Inc. for analysis by gamma-ray spectroscopy. Airchek, Inc. is a NRSB certified analytical laboratory for radon analysis (certification # ARL1402) located at 1936 Butler Bridge Road, Mills River, North Carolina.

Evaluation of Testing Conditions:

These tests represent:

- Follow-up to initial testing.

These tests were conducted to:

- Evaluate radon concentrations at the facility.

According to AARST, *Protocol for Conducting Measurements of Radon and Radon Decay Products in Schools and Large Buildings*, ideal testing conditions would be when the building is fully occupied and the heating system is active. For this test, the facility's HVAC system was operating in heating mode; therefore, KCI concludes that this test was conducted during ideal testing conditions.

KCI recorded observations of the following conditions in each room during the time of deployment and collection of the radon test kits:

- Indoor temperature,
- HVAC Operation,
- Dehumidifier operation,
- Humidifier operation,
- Ceiling fan operation, and
- Open windows or doors.

KCI also compiled weather data for the testing period and conducted observations of relevant field conditions. During the test period, weather records indicate low temperatures were in the low 40°Fs and high temperatures ranged from the low 50°Fs to the low 70°Fs. Maximum sustained winds ranged from 0-29 miles per hour. Average humidity was around 56% with 0.51 inches of precipitation (rain) was recorded during testing period.

Results:

The sampling locations and analytical results are listed on Table 1 (Attachment B). The quality control sample locations and analytical results are listed on Table 2 (Attachment B). Sampling locations and associated test kit identification numbers and relevant field observations are listed on Table 3 (Attachment B). The laboratory analytical results are included in Attachment C. Laboratory results and exposure data for the spike samples are also included in Attachment C.

The results of the radon test analysis indicated the following:

| Radon Concentration | Room | Result |
|---------------------|------------------|--------|
| ≥4.0 pCi/L | None | N/A |
| <4.0 pCi/L | See Attachment B | |

| Quality Control Samples | |
|--------------------------------|--|
| Results of Blank Canisters: | The office blanks, and lab transit blanks had test results of less than the laboratory detection limit of 0.3 pCi/L. |
| Adequate Laboratory Precision? | Review of the duplicate sample analysis indicates that adequate laboratory measurement precision was achieved. |
| Spike Sample Analysis: | The Spike Sample analysis results indicate the laboratory is operating within statistical control limits. |

Our professional services have been performed in accordance with customary principles and practices in the field of industrial hygiene and engineering. If you have any questions or comments regarding this report, please feel free to contact me at (410) 891-1769.

Sincerely,



Tyler P. McCleaf
Radon Measurement Provider
#111004 RT
KCI Technologies, Inc.

Attachments: A- Floor Plan with Test Locations
 B- Table 1-3, Radon Test Summary Spreadsheets
 C- Laboratory Analytical Results

ATTACHMENT A

Floor Plan With Test Locations

ATTACHMENT B

Radon Test Summary Spreadsheet

Table Notes:

AC- Activated Charcoal

ACI- Air Check, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank

PM- Project Manager

OC- Quality Control

| Table 1- Radon Testing Results | | |
|--------------------------------------|-------------|--------|
| Westland MS RT | | |
| Test Period: 03/21/2022 - 03/24/2022 | | |
| | | |
| Kit Number | Room / Area | Result |
| 11139263 | 152 | < 0.3 |
| 11139264 | 152 | < 0.3 |
| 11139265 | 152 | 0.7 |

| Table 2- Radon Testing Results | | | |
|--------------------------------------|---------|--------------|--------|
| Westland MS RT | | | |
| Test Period: 03/21/2022 - 03/24/2022 | | | |
| | | | |
| Kit Number | QC Type | Room / Area | Result |
| 11139263 | D | 152 | |
| 11139264 | FB | 152 | |
| 11139902 | OB | OFFICE BLANK | < 0.3 |
| 11139928 | TB | TRAVEL BLANK | < 0.3 |

ATTACHMENT C

Laboratory Analytical Results

March 28, 2022

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
Westland MS RT

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|----------------|----------------------|----------------------|--------------|-----------------|
| 11139263 | 152 | 2022-03-21 @ 9:00 am | 2022-03-24 @ 8:00 am | < 0.3 | 2022-03-28 |
| 11139264 | 152 | 2022-03-21 @ 9:00 am | 2022-03-24 @ 8:00 am | < 0.3 | 2022-03-28 |
| 11139265 | 152 | 2022-03-21 @ 9:00 am | 2022-03-24 @ 8:00 am | 0.7 | 2022-03-28 |

Air Chek 1936 Butler Bridge Rd, Mills River, NC 28759-3892 Phone: (828) 684-0893 Fax: (828) 684-8498

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies, Inc. Job Number 204620

NOMINAL Conditions: Radon Conc 27.0 pCi/L Rel. Hum 50.1 % Temp. 70.0 F

Date Start: 3/18/22 Date Stop: 3/21/22 Date Start: _____ Date Stop: _____

Time Start: 0705 Time Stop: 0705 Time Start: _____ Time Stop: _____

Device No.'s: (5) Char Bags - Device No.'s: _____

11139367, 11139368, 11139371, _____

11139710, 11139717 _____

E3 light

Date Start: _____ Date Stop: _____ Date Start: _____ Date Stop: _____

Time Start: _____ Time Stop: _____ Time Start: _____ Time Stop: _____

Device No.'s: _____ Device No.'s: _____

Date Start: _____ Date Stop: _____ Date Start: _____ Date Stop: _____

Time Start: _____ Time Stop: _____ Time Start: _____ Time Stop: _____

Device No.'s: _____ Device No.'s: _____

Note: All times are in 24-hour (military) notation, Eastern Standard Time (EST)
Background = 7 μ R/h Elevation = 820 ft

March 30, 2022

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

MCPS - Spike Sample Lab Results. Measured values are satisfactory, i.e., within $\pm 25\%$ of the chamber's reference value (25.7 pCi/L).

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|----------------|----------------------|----------------------|----------------|-----------------|
| 11139367 | SK1 | 2022-03-18 @ 7:00 am | 2022-03-21 @ 7:00 am | 25.9 \pm 2.1 | 2022-03-30 |
| 11139368 | SK2 | 2022-03-18 @ 7:00 am | 2022-03-21 @ 7:00 am | 23.9 \pm 2.0 | 2022-03-30 |
| 11139371 | SK3 | 2022-03-18 @ 7:00 am | 2022-03-21 @ 7:00 am | 25.7 \pm 2.1 | 2022-03-30 |
| 11139710 | SK4 | 2022-03-18 @ 7:00 am | 2022-03-21 @ 7:00 am | 26.4 \pm 2.1 | 2022-03-30 |
| 11139717 | SK5 | 2022-03-18 @ 7:00 am | 2022-03-21 @ 7:00 am | 24.6 \pm 2.0 | 2022-03-30 |

Air Chek 1936 Butler Bridge Rd, Mills River, NC 28759-3892 Phone: (828) 684-0893 Fax: (828) 684-8498



Radon Test Kit Chain of Custody

Project Name: MCPS Radon – March 2022 Schools – Retesting

Name of Schools:

1. Rosa Parks MS
2. Poolesville ES
3. Wyngate ES
4. Seven Locks ES
5. Walt Whitman HS
6. Somerset ES
7. Rock Creek Forest ES
8. Walter Johnson HS
9. Westbrook ES
10. Westland MS
11. Farmland ES
12. College Gardens ES
13. Julius West MS
14. Robert Frost MS
15. Carl Sandburg Learning Center

| | Date | Initials |
|----------------------------------|------------|----------|
| Radon Test Kits Deployed | 03/21/2022 | BMM |
| Radon Test Kits Collected | 03/24/2022 | BMM |
| Radon Test Kits Shipped to Lab* | 03/25/2022 | BMM |
| Radon Test Kits Received by Lab* | 03/28/2022 | BMM |

*All samples sent to Air Check, Inc., 1936 Butler Bridge Rd, Mills River, NC 28759



MCPS RADON TESTING – EXECUTIVE SUMMARY

| | |
|--------------------------|--|
| Site Name | Westland Middle School |
| Date of Test Report | 2/21/2022 |
| Round of Testing | Initial Follow-up Post Remediation 2 Year Testing 5 Year Testing HVAC Upgrade Window Replacement New Addition New Facility |
| # Rooms Tested | 68 |
| # Rooms \geq 4.0 pCi/L | 0 |
| Lowest Value | <0.3 pCi/L |
| Highest Value | 0.7 pCi/L |

Project Status:

Initial testing completed; Missing or compromised samples need re-sampling



February 21, 2022

Brian T. Croyle, PG, CHMM
Environmental Specialist
Montgomery County Public Schools
Gaithersburg, MD 20879

Re: **Radon Testing Services**
KCI Job # 122108316

Location: Westland Middle School
5511 Massachusetts Ave.
Bethesda, MD 20816

Dear Mr. Croyle:

KCI Technologies, Inc. (KCI) is pleased to submit the following report to Montgomery County Public Schools (MCPS) pursuant to completing a “short-term” 3 day radon test for the Westland Middle School, located at 5511 Massachusetts Ave. Bethesda, MD 20816 (subject site).

Scope of Services:

KCI conducted radon testing at the subject site to evaluate indoor radon levels relative to the USEPA's recommended action level of 4.0 picocuries per Liter (pCi/L) - the level at which EPA recommends that schools take action to reduce the level. KCI conducted the radon testing in accordance with American Association of Radon Scientists and Technologists (AARST) *Protocol for Conducting Measurements of Radon and Radon Decay Products in Schools and Large Buildings*. A National Radon Proficiency Program (NRPP) Radon Measurement Specialist (certification #111004 RT) supervised the testing. Additional information on radon management and the health effects of radon exposure is available from <https://www.montgomeryschoolsmd.org> or www.epa.gov/radon.

KCI visited the site on January 18, 2022 and deployed seventy eight (78) activated charcoal (AC) radon test kits. KCI deployed radon test kits in all frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance.

A floor plan map of the building with the test locations is included as Attachment A of this report.

As a quality control measure, KCI also included duplicate samples, field blanks, lab transit blanks, and office blanks in accordance with AARST recommendations. In addition, KCI submitted test kits to Bowser-Morner, Inc. as spike samples. The spiked tests were exposed to a known radon concentration by Bowser-Morner prior to being returned to the laboratory for analysis.

KCI returned to the site on January 21, 2022 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Airchek, Inc. for analysis by gamma-ray spectroscopy. Airchek, Inc.

is a NRSB certified analytical laboratory for radon analysis (certification # ARL1402) located at 1936 Butler Bridge Road, Mills River, North Carolina.

Evaluation of Testing Conditions:

These tests represent:

- Follow-up to post-mitigation biennial testing.

These tests were conducted to:

- Confirm the success of the mitigation system(s).

According to AARST, *Protocol for Conducting Measurements of Radon and Radon Decay Products in Schools and Large Buildings*, ideal testing conditions would be when the building is fully occupied and the heating system is active. For this test, the facility’s HVAC system was operating in heating mode; therefore, KCI concludes that this test was conducted during ideal testing conditions.

KCI recorded observations of the following conditions in each room during the time of deployment and collection of the radon test kits:

- Indoor temperature,
- HVAC Operation,
- Dehumidifier operation,
- Humidifier operation,
- Ceiling fan operation, and
- Open windows or doors.

KCI also compiled weather data for the testing period and conducted observations of relevant field conditions. During the test period, weather records indicate low temperatures were in the 30s and high temperatures ranged from the mid 30s to the mid 40s Fahrenheit. Maximum sustained winds ranged from 7-20 miles per hour. Average humidity was around 50% with .05 inches of precipitation (rain) was recorded during testing period.

Results:

The sampling locations and analytical results are listed on Table 1 (Attachment B). The quality control sample locations and analytical results are listed on Table 2 (Attachment B). Sampling locations and associated test kit identification numbers and relevant field observations are listed on Table 3 (Attachment B). The laboratory analytical results are included in Attachment C. Laboratory results and exposure data for the spike samples are also included in Attachment C.

The results of the radon test analysis indicated the following:

| Radon Concentration | Room | Result |
|----------------------------|------------------|---------------|
| ≥4.0 pCi/L | None | N/A |
| <4.0 pCi/L | See Attachment B | |

| Quality Control Samples | |
|--------------------------------|--|
| Results of Blank Canisters: | The office blanks, and lab transit blanks had test results of less than the laboratory detection limit of 0.3 pCi/L. |
| Adequate Laboratory Precision? | Review of the duplicate sample analysis indicates that adequate laboratory measurement precision was achieved. |
| Spike Sample Analysis: | The Spike Sample analysis results indicate the laboratory is operating within statistical control limits. |

Our professional services have been performed in accordance with customary principles and practices in the field of industrial hygiene and engineering. If you have any questions or comments regarding this report, please feel free to contact me at (410) 891-1769.

Sincerely,



Tyler P. McCleaf
Radon Measurement Provider
#111004 RT
KCI Technologies, Inc.

Attachments: A- Floor Plan with Test Locations
 B- Table 1-3, Radon Test Summary Spreadsheets
 C- Laboratory Analytical Results

ATTACHMENT A

Floor Plan With Test Locations

ATTACHMENT B

Radon Test Summary Spreadsheet

Table Notes:

AC- Activated Charcoal

ACI- Air Check, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank

PM- Project Manager

OC- Quality Control

| Table 1- Radon Testing Results | | |
|------------------------------------|-------------|--------|
| Westland MS | | |
| Test Period: 01/18/2022-01/21/2022 | | |
| Kit Number | Room / Area | Result |
| 11106627 | 101 | < 0.3 |
| 11106628 | 101 | < 0.3 |
| 11106630 | 102 | < 0.3 |
| 11106635 | 102 | < 0.3 |
| 11106675 | 108 | < 0.3 |
| 11106663 | 110 | < 0.3 |
| 11106672 | 111 | < 0.3 |
| 11106653 | 112 | < 0.3 |
| 11106664 | 113 | < 0.3 |
| 11106665 | 114 | < 0.3 |
| 11106654 | 115 | < 0.3 |
| 11106658 | 116 | 0.7 |
| 11106666 | 117 | < 0.3 |
| 11106667 | 117 | < 0.3 |
| 11106660 | 118 | < 0.3 |
| 11106661 | 119 | < 0.3 |
| 11106662 | 119 | < 0.3 |
| 11106655 | 120 | 0.7 |
| 11106656 | 120 | < 0.3 |
| 11106657 | 121 | < 0.3 |
| 11106646 | 125 | < 0.3 |
| 11106616 | 127 | < 0.3 |
| 11106648 | 128 | < 0.3 |
| 11106649 | 128 | < 0.3 |
| 11106608 | 129 | < 0.3 |
| 11106650 | 130 | < 0.3 |
| 11106652 | 130 | < 0.3 |
| 11106640 | 131 | < 0.3 |
| 11106647 | 133 | < 0.3 |
| 11106626 | 135 | < 0.3 |
| 11106632 | 136 | < 0.3 |
| 11106615 | 137 | < 0.3 |
| 11106623 | 137 | < 0.3 |
| 11106625 | 137 | < 0.3 |
| 11106633 | 138 | < 0.3 |
| 11106622 | 139 | < 0.3 |
| 11106637 | 139 | < 0.3 |
| 11106638 | 139 | < 0.3 |
| 11106634 | 140 | < 0.3 |
| 11106617 | 142 | < 0.3 |
| 11106643 | 148 | < 0.3 |
| 11106609 | 151 | < 0.3 |

| Table 1- Radon Testing Results | | |
|------------------------------------|---------------------------------|--------|
| Westland MS | | |
| Test Period: 01/18/2022-01/21/2022 | | |
| Kit Number | Room / Area | Result |
| 11106677 | 203 | < 0.3 |
| 11106678 | 210 | < 0.3 |
| 11106670 | 214 | 0.7 |
| 11106669 | 221 | < 0.3 |
| 11106676 | 229 | < 0.3 |
| 11106612 | 100 MAIN OFFICE | < 0.3 |
| 11106619 | 100B | < 0.3 |
| 11106611 | 100C | < 0.3 |
| 11106604 | 100D | < 0.3 |
| 11106605 | 100E | < 0.3 |
| 11106620 | 100F | < 0.3 |
| 11106618 | 100G | < 0.3 |
| 11106613 | 100H | < 0.3 |
| 11106603 | 101B | < 0.3 |
| 11106606 | 101C | < 0.3 |
| 11106610 | 101D | < 0.3 |
| 11106636 | 101E | < 0.3 |
| 11106629 | 101F | < 0.3 |
| 11106659 | 118/116 | 0.6 |
| 11106601 | 128A | < 0.3 |
| 11106641 | 130 OFFICE | < 0.3 |
| 11106642 | 130A | < 0.3 |
| 11106602 | 130C | < 0.3 |
| 11106607 | 130C | < 0.3 |
| 11106631 | 130C | < 0.3 |
| 11106624 | 130D | < 0.3 |
| 11106639 | 131/133 | < 0.3 |
| 11106644 | 149 GYM | < 0.3 |
| 11106645 | 149/GYM | < 0.3 |
| 11106671 | CAFETERIA | < 0.3 |
| 11106673 | CAFETERIA | < 0.3 |
| 11106674 | CAFETERIA | < 0.3 |
| 11106668 | CAFETERIA STAGE | < 0.3 |
| 11106614 | CALM ROOM | < 0.3 |
| 11106621 | EATING AREA OUTSIDE MAIN OFFICE | < 0.3 |
| 11106682 | KITCHEN | < 0.3 |

| Table 2- Radon Testing Results | | | |
|--------------------------------|---------|--------------|--------|
| Westland MS | | | |
| Test Period: 01/18/22-01/21/22 | | | |
| Kit Number | QC Type | Room / Area | Result |
| 11106628 | D | 101 | < 0.3 |
| 11106622 | FB | 130 | < 0.3 |
| 11106638 | D | 139 | < 0.3 |
| 11106615 | D | 137 | < 0.3 |
| 11106631 | FB | 130c | < 0.3 |
| 11106602 | D | 130c | < 0.3 |
| 11106649 | D | 128 | < 0.3 |
| 11106661 | D | 119 | < 0.3 |
| 11106667 | FB | 117 | < 0.3 |
| 11106673 | D | Cafeteria | < 0.3 |
| 11106397 | OB | OFFICE BLANK | < 0.3 |
| 11106400 | FB | TRAVEL BLANK | < 0.3 |

ATTACHMENT C

Laboratory Analytical Results

Radon test result report for:
WESTLAND MS

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|----------|-----------------|-----------------------|-----------------------|-----------|------------|
| 11106612 | 100 MAIN OFFICE | 2022-01-18 @ 12:00 pm | 2022-01-21 @ 9:00 am | < 0.3 | 2022-01-26 |
| 11106619 | 100B | 2022-01-18 @ 12:00 pm | 2022-01-21 @ 9:00 am | < 0.3 | 2022-01-26 |
| 11106611 | 100C | 2022-01-18 @ 12:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106604 | 100D | 2022-01-18 @ 12:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106605 | 100E | 2022-01-18 @ 12:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106620 | 100F | 2022-01-18 @ 12:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106618 | 100G | 2022-01-18 @ 12:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106613 | 100H | 2022-01-18 @ 12:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106628 | 101 | 2022-01-18 @ 12:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106627 | 101 | 2022-01-18 @ 12:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106603 | 101B | 2022-01-18 @ 12:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106606 | 101C | 2022-01-18 @ 12:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106610 | 101D | 2022-01-18 @ 12:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106636 | 101E | 2022-01-18 @ 12:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106629 | 101F | 2022-01-18 @ 12:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106630 | 102 | 2022-01-18 @ 1:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106635 | 102 | 2022-01-18 @ 1:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106675 | 108 | 2022-01-18 @ 3:00 pm | 2022-01-21 @ 11:00 am | < 0.3 | 2022-01-26 |
| 11106663 | 110 | 2022-01-18 @ 3:00 pm | 2022-01-21 @ 11:00 am | < 0.3 | 2022-01-26 |
| 11106672 | 111 | 2022-01-18 @ 3:00 pm | 2022-01-21 @ 11:00 am | < 0.3 | 2022-01-26 |
| 11106653 | 112 | 2022-01-18 @ 3:00 pm | 2022-01-21 @ 11:00 am | < 0.3 | 2022-01-26 |
| 11106664 | 113 | 2022-01-18 @ 3:00 pm | 2022-01-21 @ 11:00 am | < 0.3 | 2022-01-26 |
| 11106665 | 114 | 2022-01-18 @ 2:00 pm | 2022-01-21 @ 11:00 am | < 0.3 | 2022-01-26 |
| 11106654 | 115 | 2022-01-18 @ 2:00 pm | 2022-01-21 @ 11:00 am | < 0.3 | 2022-01-26 |
| 11106658 | 116 | 2022-01-18 @ 2:00 pm | 2022-01-21 @ 10:00 am | 0.7 ± 0.4 | 2022-01-26 |
| 11106667 | 117 | 2022-01-18 @ 2:00 pm | 2022-01-21 @ 11:00 am | < 0.3 | 2022-01-26 |
| 11106666 | 117 | 2022-01-18 @ 2:00 pm | 2022-01-21 @ 11:00 am | < 0.3 | 2022-01-26 |
| 11106660 | 118 | 2022-01-18 @ 2:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106659 | 118/116 | 2022-01-18 @ 2:00 pm | 2022-01-21 @ 10:00 am | 0.6 ± 0.4 | 2022-01-26 |
| 11106662 | 119 | 2022-01-18 @ 2:00 pm | 2022-01-21 @ 11:00 am | < 0.3 | 2022-01-26 |
| 11106661 | 119 | 2022-01-18 @ 2:00 pm | 2022-01-21 @ 11:00 am | < 0.3 | 2022-01-26 |
| 11106655 | 120 | 2022-01-18 @ 2:00 pm | 2022-01-21 @ 10:00 am | 0.7 ± 0.4 | 2022-01-26 |
| 11106656 | 120 | 2022-01-18 @ 2:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106657 | 121 | 2022-01-18 @ 2:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106646 | 125 | 2022-01-18 @ 2:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106616 | 127 | 2022-01-18 @ 2:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106648 | 128 | 2022-01-18 @ 2:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |

Radon test result report for:
WESTLAND MS

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|----------|------------|----------------------|-----------------------|-----------|------------|
| 11106649 | 128 | 2022-01-18 @ 2:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106601 | 128A | 2022-01-18 @ 2:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106608 | 129 | 2022-01-18 @ 2:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106652 | 130 | 2022-01-18 @ 2:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106650 | 130 | 2022-01-18 @ 2:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106641 | 130 OFFICE | 2022-01-18 @ 2:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106642 | 130A | 2022-01-18 @ 2:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106631 | 130C | 2022-01-18 @ 2:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106602 | 130C | 2022-01-18 @ 2:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106607 | 130C | 2022-01-18 @ 2:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106624 | 130D | 2022-01-18 @ 2:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106640 | 131 | 2022-01-18 @ 2:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106639 | 131/133 | 2022-01-18 @ 2:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106647 | 133 | 2022-01-18 @ 2:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106626 | 135 | 2022-01-18 @ 1:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106632 | 136 | 2022-01-18 @ 1:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106615 | 137 | 2022-01-18 @ 1:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106623 | 137 | 2022-01-18 @ 1:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106625 | 137 | 2022-01-18 @ 1:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106633 | 138 | 2022-01-18 @ 1:00 pm | 2022-01-21 @ 11:00 am | < 0.3 | 2022-01-26 |
| 11106622 | 139 | 2022-01-18 @ 1:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106637 | 139 | 2022-01-18 @ 1:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106638 | 139 | 2022-01-18 @ 1:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106634 | 140 | 2022-01-18 @ 1:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106617 | 142 | 2022-01-18 @ 1:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106643 | 148 | 2022-01-18 @ 1:00 pm | 2022-01-21 @ 11:00 am | < 0.3 | 2022-01-26 |
| 11106644 | 149 GYM | 2022-01-18 @ 1:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106645 | 149/GYM | 2022-01-18 @ 1:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106609 | 151 | 2022-01-18 @ 1:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106677 | 203 | 2022-01-18 @ 3:00 pm | 2022-01-21 @ 11:00 am | < 0.3 | 2022-01-26 |
| 11106678 | 210 | 2022-01-18 @ 3:00 pm | 2022-01-21 @ 11:00 am | < 0.3 | 2022-01-26 |
| 11106670 | 214 | 2022-01-18 @ 4:00 pm | 2022-01-21 @ 11:00 am | 0.7 ± 0.4 | 2022-01-26 |
| 11106669 | 221 | 2022-01-18 @ 3:00 pm | 2022-01-21 @ 11:00 am | < 0.3 | 2022-01-26 |
| 11106676 | 229 | 2022-01-18 @ 3:00 pm | 2022-01-21 @ 11:00 am | < 0.3 | 2022-01-26 |
| 11106671 | CAFETERIA | 2022-01-18 @ 3:00 pm | 2022-01-21 @ 11:00 am | < 0.3 | 2022-01-26 |
| 11106673 | CAFETERIA | 2022-01-18 @ 3:00 pm | 2022-01-21 @ 11:00 am | < 0.3 | 2022-01-26 |
| 11106674 | CAFETERIA | 2022-01-18 @ 3:00 pm | 2022-01-21 @ 11:00 am | < 0.3 | 2022-01-26 |

January 27, 2022

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
WESTLAND MS

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|---------------------------------|-----------------------|-----------------------|--------------|-----------------|
| 11106668 | CAFETERIA STAGE | 2022-01-18 @ 3:00 pm | 2022-01-21 @ 11:00 am | < 0.3 | 2022-01-26 |
| 11106614 | CALM ROOM | 2022-01-18 @ 12:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106621 | EATING AREA OUTSIDE MAIN OFFICE | 2022-01-18 @ 12:00 pm | 2022-01-21 @ 10:00 am | < 0.3 | 2022-01-26 |
| 11106682 | KITCHEN | 2022-01-18 @ 3:00 pm | 2022-01-21 @ 11:00 am | < 0.3 | 2022-01-26 |

Air Chek 1936 Butler Bridge Rd, Mills River, NC 28759-3892 Phone: (828) 684-0893 Fax: (828) 684-8498

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies, Inc. Job Number 203404

NOMINAL Conditions: Radon Conc 16.2 pCi/L Rel. Hum 28.8 % Temp. 59.9 F

Date Start: 12/24/21 Date Stop: 12/27/21 Date Start: _____ Date Stop: _____

Time Start: 0809 Time Stop: 0809 Time Start: _____ Time Stop: _____

Device No.'s: (2) Char Bags- Device No.'s: _____

9341721, 9341722

64 left

Date Start: _____ Date Stop: _____ Date Start: _____ Date Stop: _____

Time Start: _____ Time Stop: _____ Time Start: _____ Time Stop: _____

Device No.'s: _____ Device No.'s: _____

Date Start: _____ Date Stop: _____ Date Start: _____ Date Stop: _____

Time Start: _____ Time Stop: _____ Time Start: _____ Time Stop: _____

Device No.'s: _____ Device No.'s: _____

**Note: All times are in 24-hour (military) notation, Eastern Standard Time (EST)
Background = 7 μ R/h Elevation = 820 ft**

December 31, 2021

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

SK
MA MCPS - Spike Sample Lab Results. Measured values are satisfactory, i.e., within $\pm 25\%$ of the chamber's reference value (16.2 pCi/L).

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|----------------|----------------------|----------------------|----------------|-----------------|
| 9341721 | 1 | 2021-12-24 @ 8:00 am | 2021-12-27 @ 8:00 am | 11.6 \pm 0.9 | 2021-12-31 |
| 9341722 | 1 | 2021-12-24 @ 8:00 am | 2021-12-27 @ 8:00 am | 15.4 \pm 1.2 | 2021-12-31 |

Air Chek 1936 Butler Bridge Rd, Mills River, NC 28759-3892 Phone: (828) 684-0893 Fax: (828) 684-8498



Radon Test Kit Chain of Custody

Project Name: MCPS Radon – January 2022 Schools

Name of Schools:

1. Poolesville ES
2. Rosa Parks MS
3. Seven Locks ES
4. Somerset ES
5. Thomas Pyle MS
6. Walt Whitman HS
7. Walter Johnson HS
8. Westland MS
9. Wyngate ES

| | Date | Initials |
|----------------------------------|------------|----------|
| Radon Test Kits Deployed | 01/18/2022 | JM |
| Radon Test Kits Collected | 01/21/2022 | JM |
| Radon Test Kits Shipped to Lab* | 01/21/2022 | JM |
| Radon Test Kits Received by Lab* | 01/23/2022 | JM |

*All samples sent to Air Check, Inc., 1936 Butler Bridge Rd, Mills River, NC 28759



MCPS RADON TESTING - EXECUTIVE SUMMARY

| | |
|--------------------------|---|
| Site Name | Westland Middle School |
| Date of Report | 2/21/2020 |
| Round of Testing | Initial Follow-up Post Remediation 2 year testing 5 year testing HVAC Upgrade Window Replacement New Addition New Facility |
| # of Rooms Tested | 65 |
| # Rooms \geq 4.0 pCi/L | 0 |
| Lowest Value | <0.3 pCi/L |
| Highest Value | 1.8 pCi/L |

Project Status

Current Project Status at this time: Testing Complete; no further action.



2/21/2020

Mr. Richard Cox, MS
Environmental Team Leader
Montgomery County Public Schools
Division of Maintenance
Gaithersburg, Maryland 20879

Re: Radon Testing Services

KCI Job #12146341126

Location: Westland Middle School

5511 Massachusetts Avenue
Bethesda, Maryland 20816

Dear Mr. Cox:

KCI Technologies, Inc. (KCI) is pleased to submit the following report to Montgomery County Public Schools pursuant to completing a “short-term” 3-day radon test for the Westland Middle School, located at 5511 Massachusetts Avenue in Bethesda, Maryland 20816 (subject site).

SCOPE OF SERVICES

KCI conducted radon testing at the subject site to evaluate indoor radon levels relative to the USEPA's recommended action level of 4.0 picocuries per Liter (pCi/L) - the level at which EPA recommends that schools take action to reduce the level. KCI conducted the radon testing in accordance with American Association of Radon Scientists and Technologists (AARST) *Protocol for Conducting Measurements of Radon and Radon Decay Products in Schools and Large Buildings*. A National Radon Proficiency Program (NRPP) Radon Measurement Provider (certification #111004 RT) supervised the testing. Additional information on radon management and the health effects of radon exposure is available from www.montgomerycountymd.gov/dep/air/radon or www.epa.gov/radon.

KCI visited the site on 2/7/2020 and deployed eighty-one (81) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance.

A floor plan map of the building with the test locations is included as Appendix A of this report.

As a quality control measure, KCI included duplicate samples, field blanks, lab transit blanks, and office blanks in accordance with AARST recommendations. In addition, KCI submitted sixty (60) test kits to Bowser-Morner, Inc. as spike samples. The spiked tests were exposed to a known radon concentration by Bowser-Morner, Inc. prior to being returned to the laboratory for analysis.

KCI returned to the site on 2/10/2020 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Aircheck, Inc. for analysis by gamma-ray spectroscopy. Aircheck, Inc. is a National Radon Safety Board (NRSB) radon measurement provider and is a certified analytical laboratory for radon analysis (certification #ARL1402) located at 1936 Butler Bridge Road, Mills River, North Carolina.

EVALUATION OF TESTING CONDITIONS

These tests represent:

- Follow-up to initial testing.

These tests were conducted to:

- Evaluate radon concentrations at the facility.

According to AARST, *Protocol for Conducting Measurements of Radon and Radon Decay Products in Schools and Large Buildings*, ideal testing conditions would be when the building is fully occupied and the heating system is active. For this test, the facility's HVAC system was operating in heating mode; therefore, KCI concludes that this test was conducted during ideal testing conditions.

KCI recorded observations of the following conditions in each room at the time of deployment and collection of the radon test kits:

- Indoor temperature,
- HVAC Operation,
- Dehumidifier operation,
- Humidifier operation,
- Ceiling fan operation, and
- Open windows or doors.

KCI also compiled weather data for the testing period and conducted observations of relevant field conditions. During the test period, weather records indicate low temperatures were in the upper-20s and high temperatures were in the mid-50s. Maximum sustained winds ranged from 10-23 miles per hour. Average humidity was around 64%. 0.32 inches of precipitation (rain) was recorded during the testing period.

RESULTS

The sampling locations and analytical results are listed on Table 1 (Attachment B). The quality control sample locations and analytical results are listed on Table 2 (Attachment B). Sampling locations and associated test kit identification numbers and relevant field observations are listed on Table 3 (Attachment B). The laboratory analytical results are included in Attachment C. Laboratory results and exposure data for the spike samples are also included in Attachment C.

The results of the radon test analysis indicated the following:

| Radon Concentration | Room | Result |
|----------------------------|------------------|------------------|
| ≥4.0 pCi/L | None | N/A |
| ≤4.0 pCi/L | See Attachment B | See Attachment B |

| Quality Control Samples | |
|--------------------------------|--|
| Results of Blank Canisters: | The office blanks, and lab transit blanks had test results of less than the laboratory detection limit of 0.3 pCi/L. |
| Adequate Laboratory Precision? | Review of the duplicate sample analysis indicates that adequate laboratory measurement precision was achieved. |
| Spike Sample Analysis: | The Spike sample analysis results indicate the laboratory is operating within statistical control limits. |

Our professional services have been performed in accordance with customary principles and practices in the field of industrial hygiene and engineering. If you have any questions or comments regarding this report, please feel free to contact me at 410-316-7800.

Sincerely,

Mr. Tyler P. McCleaf
Radon Measurement Provider
111004 RT

KCI Technologies, Inc.

Attachments:

A- Floor Plan with Test Locations

B - Tables 1-3, Radon Test Summary Spreadsheets

C- Laboratory Analytical Results

ATTACHMENT A

Floor Plan With Test Locations

ATTACHMENT B

Radon Test Summary Spreadsheet

Table Notes:

AC- Activated Charcoal

ACI- Air Chek, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank

PM- Project Manager

QC- Quality Control

| Table 1- Radon Testing Results | | |
|---------------------------------|-------------|--------|
| Westland Middle School | | |
| Test Period: 1/7/2020-1/10-2020 | | |
| Kit Number | Room / Area | Result |
| 9346701 | 100 | 0.5 |
| 9346702 | 100A | < 0.3 |
| 9346703 | 100A | 0.7 |
| 9346704 | 100F | < 0.3 |
| 9346705 | 100B | < 0.3 |
| 9346706 | 100C | 1 |
| 9346707 | 100D | 0.5 |
| 9346708 | 100E | < 0.3 |
| 9346709 | 100G | 0.7 |
| 9346710 | 101 | < 0.3 |
| 9346711 | 136 | < 0.3 |
| 9346712 | 136A | < 0.3 |
| 9346713 | 136A | < 0.3 |
| 9346714 | 136B | < 0.3 |
| 9346715 | 136B | < 0.3 |
| 9346716 | 136C | < 0.3 |
| 9346717 | 136D | < 0.3 |
| 9346718 | 136E | < 0.3 |
| 9346719 | 136F | < 0.3 |
| 9346720 | 135 | < 0.3 |
| 9346721 | 135A | < 0.3 |
| 9346722 | 142 | < 0.3 |
| 9346723 | 142 | < 0.3 |
| 9346724 | 143 | 1.5 |
| 9346725 | 143 | 1 |
| 9346726 | 139 | 0.9 |
| 9346727 | 137 | < 0.3 |
| 9346728 | 134 | < 0.3 |
| 9346729 | 133 | < 0.3 |
| 9346730 | 133A | < 0.3 |
| 9346731 | 132 | < 0.3 |
| 9346732 | 131 | < 0.3 |
| 9346733 | 131 | 0.5 |
| 9346734 | 130 | < 0.3 |
| 9346735 | 130 | < 0.3 |
| 9346736 | 129 | < 0.3 |
| 9346737 | 128 | < 0.3 |
| 9346738 | 126 | 1 |
| 9346739 | 126A | 1.7 |
| 9346740 | 126B | 1.4 |
| 9346741 | 152 | 1 |
| 9346742 | 151 | < 0.3 |

| | | |
|---------|--------------|-------|
| 9346743 | 151 | < 0.3 |
| 9346744 | 125 | 0.7 |
| 9346745 | 125 | 0.7 |
| 9346746 | 125A | 0.6 |
| 9346747 | 125B | 0.5 |
| 9346748 | 125C | < 0.3 |
| 9346749 | 150 | < 0.3 |
| 9346750 | 127B | 1.2 |
| 9346751 | 127A | < 0.3 |
| 9346752 | 127C | < 0.3 |
| 9346753 | 127C | 0.5 |
| 9346754 | 122 | < 0.3 |
| 9346755 | 122 | < 0.3 |
| 9346756 | 122A | < 0.3 |
| 9346757 | 119 | 1.2 |
| 9346758 | 120 | 1.7 |
| 9346759 | 118 | 0.7 |
| 9346760 | 117 | < 0.3 |
| 9346761 | 116 | 0.8 |
| 9346762 | 115 | < 0.3 |
| 9346763 | 115 | < 0.3 |
| 9346764 | 113 | 0.6 |
| 9346765 | 114 | 0.6 |
| 9346766 | 112 | 0.8 |
| 9346767 | 111 | 0.6 |
| 9346768 | 110 | < 0.3 |
| 9346769 | 109 | 0.9 |
| 9346770 | 107 | 1.8 |
| 9346771 | 106 | 1.4 |
| 9346772 | 105 | 1 |
| 9346773 | 105 | 0.5 |
| 9346774 | CAFETERIA | < 0.3 |
| 9346775 | CAFETERIA | < 0.3 |
| 9346776 | CAFETERIA | 0.6 |
| 9346777 | 228 | < 0.3 |
| 9346778 | 221 | < 0.3 |
| 9346779 | 251 | 0.5 |
| 9346780 | 204 | < 0.3 |
| 9346781 | 204 | < 0.3 |
| 9348311 | OFFICE BLANK | <0.3 |

| Table 2- Radon Testing Results | | | |
|---------------------------------|---------------|-------------|--------|
| Westland Middle School | | | |
| Test Period: 1/7/2020-1/10-2020 | | | |
| Kit Number | QC Type | Room / Area | Result |
| 9346703 | D | 100A | 0.7 |
| 9346713 | D | 136A | 0.5 |
| 9346723 | D | 142 | <0.3 |
| 9346733 | D | 131 | 0.5 |
| 9346735 | FB | 130 | <0.3 |
| 9346743 | D | 151 | <0.3 |
| 9346753 | D | 127C | 0.5 |
| 9346755 | FB | 122 | <0.3 |
| 9346763 | D | 115 | <0.3 |
| 9346773 | D | 105 | 0.5 |
| 9346775 | FB | CAFETERIA | <0.3 |
| 9346781 | D | 204 | <0.3 |
| 9348319 | TRANSIT BLANK | NA | <0.3 |
| 9348320 | TRANSIT BLANK | NA | <0.3 |
| 9348313 | TRANSIT BLANK | NA | <0.3 |

ATTACHMENT C

Laboratory Analytical Results

Radon test result report for:

| |
|---|
| MCPS - Spike Sample Lab Results. Measured values are satisfactory, i.e., within $\pm 25\%$ of the chamber's reference value (25.7 pCi/L). |
|---|

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|---------|---------|----------------------|----------------------|------------------|------------|
| 9340067 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 25.1 \pm 2.4 D | 2020-01-03 |
| 9340035 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 22.5 \pm 2.3 D | 2020-01-03 |
| 9340003 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 25.2 \pm 2.4 D | 2020-01-03 |
| 9340089 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 23.3 \pm 2.3 D | 2020-01-03 |
| 9340072 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 18.3 \pm 2.0 D | 2020-01-03 |
| 9340040 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 27.3 \pm 2.6 D | 2020-01-03 |
| 9340008 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 24.8 \pm 2.5 D | 2020-01-03 |
| 9340094 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 24.7 \pm 2.5 D | 2020-01-03 |
| 9340099 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 27.5 \pm 2.6 D | 2020-01-03 |
| 9340077 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 25.2 \pm 2.5 D | 2020-01-03 |
| 9340045 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 24.7 \pm 2.4 D | 2020-01-03 |
| 9340013 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 25.9 \pm 2.6 D | 2020-01-03 |
| 9340018 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 29.1 \pm 2.8 D | 2020-01-03 |
| 9341704 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 25.1 \pm 2.4 D | 2020-01-03 |
| 9340050 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 27.2 \pm 2.6 D | 2020-01-03 |
| 9340023 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 28.2 \pm 2.7 D | 2020-01-03 |
| 9341709 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 25.5 \pm 2.4 D | 2020-01-03 |
| 9340055 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 27.8 \pm 2.6 D | 2020-01-03 |
| 9340060 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 27.3 \pm 2.5 D | 2020-01-03 |
| 9340028 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 23.9 \pm 2.3 D | 2020-01-03 |
| 9341714 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 28.3 \pm 2.7 D | 2020-01-03 |
| 9340082 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 26.4 \pm 2.6 D | 2020-01-03 |
| 9340065 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 24.2 \pm 2.4 D | 2020-01-03 |
| 9340033 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 26.2 \pm 2.5 D | 2020-01-03 |
| 9341719 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 26.7 \pm 2.5 D | 2020-01-03 |
| 9340001 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 26.3 \pm 2.5 D | 2020-01-03 |
| 9340087 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 24.8 \pm 2.4 D | 2020-01-03 |
| 9340070 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 19.5 \pm 2.4 D | 2020-01-03 |
| 9340038 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 24.7 \pm 2.3 D | 2020-01-03 |
| 9340006 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 25.2 \pm 2.4 D | 2020-01-03 |
| 9340092 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 31.4 \pm 2.8 D | 2020-01-03 |
| 9340097 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 26.7 \pm 2.5 D | 2020-01-03 |
| 9340075 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 29.6 \pm 2.6 D | 2020-01-03 |
| 9340043 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 28.1 \pm 2.6 D | 2020-01-03 |
| 9340011 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 26.8 \pm 2.5 D | 2020-01-03 |
| 9340016 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 23.2 \pm 2.4 D | 2020-01-03 |
| 9341702 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 26.8 \pm 2.5 D | 2020-01-03 |

Radon test result report for:

| |
|---|
| MCPS - Spike Sample Lab Results. Measured values are satisfactory, i.e., within $\pm 25\%$ of the chamber's reference value (25.7 pCi/L). |
|---|

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|---------|---------|----------------------|----------------------|------------------|------------|
| 9340048 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 25.5 \pm 2.4 D | 2020-01-03 |
| 9340021 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 26.7 \pm 2.6 D | 2020-01-03 |
| 9341707 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 25.8 \pm 2.4 D | 2020-01-03 |
| 9340053 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 25.8 \pm 2.5 D | 2020-01-03 |
| 9340058 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 28.5 \pm 2.7 D | 2020-01-03 |
| 9340026 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 25.9 \pm 2.4 D | 2020-01-03 |
| 9341712 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 24.3 \pm 2.4 D | 2020-01-03 |
| 9340080 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 25.1 \pm 2.4 D | 2020-01-03 |
| 9340063 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 25.8 \pm 2.5 D | 2020-01-03 |
| 9340031 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 24.9 \pm 2.4 D | 2020-01-03 |
| 9341717 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 25.7 \pm 2.4 D | 2020-01-03 |
| 9340085 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 26.9 \pm 2.5 D | 2020-01-03 |
| 9340068 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 26.2 \pm 2.5 D | 2020-01-03 |
| 9340036 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 23.6 \pm 2.3 D | 2020-01-03 |
| 9340004 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 26.9 \pm 2.6 D | 2020-01-03 |
| 9340090 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 26.3 \pm 2.5 D | 2020-01-03 |
| 9340073 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 26.8 \pm 2.5 D | 2020-01-03 |
| 9340041 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 25.6 \pm 2.4 D | 2020-01-03 |
| 9340009 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 24.1 \pm 2.4 D | 2020-01-03 |
| 9340095 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 25.2 \pm 2.5 D | 2020-01-03 |
| 9340100 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 24.5 \pm 2.4 D | 2020-01-03 |
| 9340078 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 25.0 \pm 2.4 D | 2020-01-03 |
| 9340046 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 28.0 \pm 2.6 D | 2020-01-03 |
| 9340014 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 21.8 \pm 2.8 D | 2020-01-03 |
| 9340019 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 26.0 \pm 2.5 D | 2020-01-03 |
| 9341705 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 27.8 \pm 2.6 D | 2020-01-03 |
| 9340051 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 25.5 \pm 2.4 D | 2020-01-03 |
| 9340056 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 27.7 \pm 2.6 D | 2020-01-03 |
| 9340024 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 28.3 \pm 2.5 D | 2020-01-03 |
| 9341710 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 24.2 \pm 2.3 D | 2020-01-03 |
| 9340061 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 28.9 \pm 2.6 D | 2020-01-03 |
| 9340029 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 23.0 \pm 2.3 D | 2020-01-03 |
| 9341715 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 27.0 \pm 2.5 D | 2020-01-03 |
| 9340083 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 24.9 \pm 2.4 D | 2020-01-03 |
| 9340066 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 25.1 \pm 2.4 D | 2020-01-03 |
| 9340034 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 26.4 \pm 2.5 D | 2020-01-03 |
| 9341720 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 25.3 \pm 2.5 D | 2020-01-03 |

Radon test result report for:

| |
|---|
| MCPS - Spike Sample Lab Results. Measured values are satisfactory, i.e., within $\pm 25\%$ of the chamber's reference value (25.7 pCi/L). |
|---|

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|---------|---------|----------------------|----------------------|------------------|------------|
| 9340002 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 25.7 \pm 2.5 D | 2020-01-03 |
| 9340088 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 26.4 \pm 2.5 D | 2020-01-03 |
| 9340071 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 24.9 \pm 2.4 D | 2020-01-03 |
| 9340039 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 26.9 \pm 2.5 D | 2020-01-03 |
| 9340007 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 26.9 \pm 2.4 D | 2020-01-03 |
| 9340093 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 25.1 \pm 2.5 D | 2020-01-03 |
| 9340098 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 26.8 \pm 2.5 D | 2020-01-03 |
| 9340076 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 25.1 \pm 2.5 D | 2020-01-03 |
| 9340044 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 25.2 \pm 2.5 D | 2020-01-03 |
| 9340012 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 22.5 \pm 2.2 D | 2020-01-03 |
| 9340017 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 25.3 \pm 2.5 D | 2020-01-03 |
| 9341703 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 26.0 \pm 2.5 D | 2020-01-03 |
| 9340049 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 26.0 \pm 2.5 D | 2020-01-03 |
| 9340022 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 28.6 \pm 2.6 D | 2020-01-03 |
| 9341708 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 28.8 \pm 2.8 D | 2020-01-03 |
| 9340054 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 26.8 \pm 2.5 D | 2020-01-03 |
| 9340059 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 26.5 \pm 2.6 D | 2020-01-03 |
| 9340027 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 26.6 \pm 2.5 D | 2020-01-03 |
| 9341713 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 26.5 \pm 2.5 D | 2020-01-03 |
| 9340081 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 18.4 \pm 2.1 D | 2020-01-03 |
| 9340064 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 26.5 \pm 2.5 D | 2020-01-03 |
| 9340032 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 26.1 \pm 2.4 D | 2020-01-03 |
| 9341718 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 23.7 \pm 2.4 D | 2020-01-03 |
| 9340086 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 26.9 \pm 2.6 D | 2020-01-03 |
| 9340069 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 25.6 \pm 2.5 D | 2020-01-03 |
| 9340037 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 28.4 \pm 2.6 D | 2020-01-03 |
| 9340005 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | ???? DIF1 | 2020-01-03 |
| 9340091 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 26.5 \pm 2.5 D | 2020-01-03 |
| 9340096 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 26.2 \pm 2.5 D | 2020-01-03 |
| 9340074 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 27.7 \pm 2.5 D | 2020-01-03 |
| 9340042 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 26.6 \pm 2.5 D | 2020-01-03 |
| 9340010 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 27.5 \pm 2.5 D | 2020-01-03 |
| 9341701 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 22.9 \pm 2.3 D | 2020-01-03 |
| 9340047 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 26.7 \pm 2.5 D | 2020-01-03 |
| 9340015 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 25.4 \pm 2.5 D | 2020-01-03 |
| 9340020 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 24.1 \pm 2.4 D | 2020-01-03 |
| 9341706 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 31.0 \pm 2.7 D | 2020-01-03 |

Radon test result report for:

MCPS - Spike Sample Lab Results. Measured values are satisfactory, i.e., within $\pm 25\%$ of the chamber's reference value (25.7 pCi/L).

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|---------|---------|----------------------|----------------------|------------------|------------|
| 9340052 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 27.4 \pm 2.6 D | 2020-01-03 |
| 9340057 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 27.3 \pm 2.5 D | 2020-01-03 |
| 9340025 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 25.1 \pm 2.4 D | 2020-01-03 |
| 9341711 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 22.5 \pm 2.2 D | 2020-01-03 |
| 9340079 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 26.9 \pm 2.5 D | 2020-01-03 |
| 9340062 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 25.6 \pm 2.5 D | 2020-01-03 |
| 9340030 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 25.0 \pm 2.4 D | 2020-01-03 |
| 9341716 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 25.1 \pm 2.4 D | 2020-01-03 |
| 9340084 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 24.5 \pm 2.3 D | 2020-01-03 |

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies Inc Job Number 193598

NOMINAL Conditions: Radon Conc _____ pCi/L Rel. Hum _____ % Temp. _____ F

Date Start: 12/21/19 Date Stop: 12/23/19
Time Start: 0830 Time Stop: 0830
(Group 4)
Device No.'s: (20) Char. Bags -
9340061 thru 9340080

Temp of _____ 70.0
RH % _____ 50.1
Avg pCi/L _____ 25.5

52
Date Start: 12/21/19 Date Stop: 12/23/19
Time Start: 0835 Time Stop: 0835
(Group 5)
Device No.'s: (20) Char. Bags -
9340081 thru 9340100

Temp of _____ 70.0
RH % _____ 50.1
Avg pCi/L _____ 25.5

25
Date Start: 12/21/19 Date Stop: 12/23/19
Time Start: 0840 Time Stop: 0840
(Group 6)
Device No.'s: (20) Char. Bags -
9341701 thru 9341720

Temp of _____ 70.0
RH % _____ 50.1
Avg pCi/L _____ 25.5

R5

Note: All times are in 24-hour (military) notation, Eastern Standard Time (EST)
Background = 7 μ R/h Elevation = 820 ft

Radon test result report for:
WESTLAND MS
MAIN

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|---------|---------|-----------------------|-----------------------|-----------|------------|
| 9346701 | 100 | 2020-01-07 @ 11:00 am | 2020-01-10 @ 12:00 pm | 0.5 ± 0.3 | 2020-01-14 |
| 9346702 | 100A | 2020-01-07 @ 11:00 am | 2020-01-10 @ 12:00 pm | < 0.3 | 2020-01-14 |
| 9346703 | 100A | 2020-01-07 @ 11:00 am | 2020-01-10 @ 12:00 pm | 0.7 ± 0.4 | 2020-01-14 |
| 9346705 | 100B | 2020-01-07 @ 11:00 am | 2020-01-10 @ 12:00 pm | < 0.3 | 2020-01-14 |
| 9346706 | 100C | 2020-01-07 @ 11:00 am | 2020-01-10 @ 12:00 pm | 1.0 ± 0.3 | 2020-01-14 |
| 9346707 | 100D | 2020-01-07 @ 11:00 am | 2020-01-10 @ 12:00 pm | 0.5 ± 0.4 | 2020-01-14 |
| 9346708 | 100E | 2020-01-07 @ 11:00 am | 2020-01-10 @ 12:00 pm | < 0.3 | 2020-01-14 |
| 9346704 | 100F | 2020-01-07 @ 11:00 am | 2020-01-10 @ 12:00 pm | < 0.3 | 2020-01-14 |
| 9346709 | 100G | 2020-01-07 @ 11:00 am | 2020-01-10 @ 12:00 pm | 0.7 ± 0.3 | 2020-01-14 |
| 9346710 | 101 | 2020-01-07 @ 11:00 am | 2020-01-10 @ 12:00 pm | < 0.3 | 2020-01-14 |
| 9346773 | 105 | 2020-01-07 @ 2:00 pm | 2020-01-10 @ 12:00 pm | 0.5 ± 0.3 | 2020-01-14 |
| 9346772 | 105 | 2020-01-07 @ 2:00 pm | 2020-01-10 @ 12:00 pm | 1.0 ± 0.4 | 2020-01-14 |
| 9346771 | 106 | 2020-01-07 @ 2:00 pm | 2020-01-10 @ 12:00 pm | 1.4 ± 0.4 | 2020-01-14 |
| 9346770 | 107 | 2020-01-07 @ 2:00 pm | 2020-01-10 @ 12:00 pm | 1.8 ± 0.4 | 2020-01-14 |
| 9346769 | 109 | 2020-01-07 @ 2:00 pm | 2020-01-10 @ 12:00 pm | 0.9 ± 0.4 | 2020-01-14 |
| 9346768 | 110 | 2020-01-07 @ 2:00 pm | 2020-01-10 @ 12:00 pm | < 0.3 | 2020-01-14 |
| 9346767 | 111 | 2020-01-07 @ 2:00 pm | 2020-01-10 @ 12:00 pm | 0.6 ± 0.3 | 2020-01-14 |
| 9346766 | 112 | 2020-01-07 @ 2:00 pm | 2020-01-10 @ 12:00 pm | 0.8 ± 0.4 | 2020-01-14 |
| 9346764 | 113 | 2020-01-07 @ 1:00 pm | 2020-01-10 @ 12:00 pm | 0.6 ± 0.3 | 2020-01-14 |
| 9346765 | 114 | 2020-01-07 @ 2:00 pm | 2020-01-10 @ 12:00 pm | 0.6 ± 0.3 | 2020-01-14 |
| 9346763 | 115 | 2020-01-07 @ 1:00 pm | 2020-01-10 @ 12:00 pm | < 0.3 | 2020-01-14 |
| 9346762 | 115 | 2020-01-07 @ 1:00 pm | 2020-01-10 @ 12:00 pm | < 0.3 | 2020-01-14 |
| 9346761 | 116 | 2020-01-07 @ 1:00 pm | 2020-01-10 @ 12:00 pm | 0.8 ± 0.4 | 2020-01-14 |
| 9346760 | 117 | 2020-01-07 @ 1:00 pm | 2020-01-10 @ 12:00 pm | < 0.3 | 2020-01-14 |
| 9346759 | 118 | 2020-01-07 @ 1:00 pm | 2020-01-10 @ 12:00 pm | 0.7 ± 0.4 | 2020-01-14 |
| 9346757 | 119 | 2020-01-07 @ 1:00 pm | 2020-01-10 @ 12:00 pm | 1.2 ± 0.4 | 2020-01-14 |
| 9346758 | 120 | 2020-01-07 @ 1:00 pm | 2020-01-10 @ 12:00 pm | 1.7 ± 0.4 | 2020-01-14 |
| 9346754 | 122 | 2020-01-07 @ 1:00 pm | 2020-01-10 @ 12:00 pm | < 0.3 | 2020-01-14 |
| 9346755 | 122 | 2020-01-07 @ 1:00 pm | 2020-01-10 @ 12:00 pm | < 0.3 | 2020-01-14 |
| 9346756 | 122A | 2020-01-07 @ 1:00 pm | 2020-01-10 @ 12:00 pm | < 0.3 | 2020-01-14 |
| 9346744 | 125 | 2020-01-07 @ 1:00 pm | 2020-01-10 @ 12:00 pm | 0.7 ± 0.4 | 2020-01-14 |
| 9346745 | 125 | 2020-01-07 @ 1:00 pm | 2020-01-10 @ 12:00 pm | 0.7 ± 0.4 | 2020-01-14 |
| 9346746 | 125A | 2020-01-07 @ 1:00 pm | 2020-01-10 @ 12:00 pm | 0.6 ± 0.4 | 2020-01-14 |
| 9346747 | 125B | 2020-01-07 @ 1:00 pm | 2020-01-10 @ 12:00 pm | 0.5 ± 0.3 | 2020-01-14 |
| 9346748 | 125C | 2020-01-07 @ 1:00 pm | 2020-01-10 @ 12:00 pm | < 0.3 | 2020-01-14 |
| 9346738 | 126 | 2020-01-07 @ 1:00 pm | 2020-01-10 @ 12:00 pm | 1.0 ± 0.4 | 2020-01-14 |
| 9346739 | 126A | 2020-01-07 @ 1:00 pm | 2020-01-10 @ 12:00 pm | 1.7 ± 0.4 | 2020-01-14 |

Radon test result report for:
WESTLAND MS
MAIN

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|---------|---------|-----------------------|-----------------------|-----------|------------|
| 9346740 | 126B | 2020-01-07 @ 1:00 pm | 2020-01-10 @ 12:00 pm | 1.4 ± 0.4 | 2020-01-14 |
| 9346751 | 127A | 2020-01-07 @ 1:00 pm | 2020-01-10 @ 12:00 pm | < 0.3 | 2020-01-14 |
| 9346750 | 127B | 2020-01-07 @ 1:00 pm | 2020-01-10 @ 12:00 pm | 1.2 ± 0.4 | 2020-01-14 |
| 9346753 | 127C | 2020-01-07 @ 1:00 pm | 2020-01-10 @ 11:00 am | 0.5 ± 0.4 | 2020-01-14 |
| 9346752 | 127C | 2020-01-07 @ 1:00 pm | 2020-01-10 @ 12:00 pm | < 0.3 | 2020-01-14 |
| 9346737 | 128 | 2020-01-07 @ 12:00 pm | 2020-01-10 @ 12:00 pm | < 0.3 | 2020-01-14 |
| 9346736 | 129 | 2020-01-07 @ 12:00 pm | 2020-01-10 @ 12:00 pm | < 0.3 | 2020-01-14 |
| 9346734 | 130 | 2020-01-07 @ 12:00 pm | 2020-01-10 @ 12:00 pm | < 0.3 | 2020-01-14 |
| 9346735 | 130 | 2020-01-07 @ 12:00 pm | 2020-01-10 @ 12:00 pm | < 0.3 | 2020-01-14 |
| 9346733 | 131 | 2020-01-07 @ 12:00 pm | 2020-01-10 @ 12:00 pm | 0.5 ± 0.3 | 2020-01-14 |
| 9346732 | 131 | 2020-01-07 @ 12:00 pm | 2020-01-10 @ 12:00 pm | < 0.3 | 2020-01-14 |
| 9346731 | 132 | 2020-01-07 @ 12:00 pm | 2020-01-10 @ 12:00 pm | < 0.3 | 2020-01-14 |
| 9346729 | 133 | 2020-01-07 @ 12:00 pm | 2020-01-10 @ 12:00 pm | < 0.3 | 2020-01-14 |
| 9346730 | 133A | 2020-01-07 @ 12:00 pm | 2020-01-10 @ 12:00 pm | < 0.3 | 2020-01-14 |
| 9346728 | 134 | 2020-01-07 @ 12:00 pm | 2020-01-10 @ 11:00 am | < 0.3 | 2020-01-14 |
| 9346720 | 135 | 2020-01-07 @ 12:00 pm | 2020-01-10 @ 11:00 am | < 0.3 | 2020-01-14 |
| 9346721 | 135A | 2020-01-07 @ 12:00 pm | 2020-01-10 @ 11:00 am | < 0.3 | 2020-01-14 |
| 9346711 | 136 | 2020-01-07 @ 12:00 pm | 2020-01-10 @ 11:00 am | < 0.3 | 2020-01-14 |
| 9346712 | 136A | 2020-01-07 @ 12:00 pm | 2020-01-10 @ 11:00 am | < 0.3 | 2020-01-14 |
| 9346713 | 136A | 2020-01-07 @ 12:00 pm | 2020-01-10 @ 11:00 am | < 0.3 | 2020-01-14 |
| 9346714 | 136B | 2020-01-07 @ 12:00 pm | 2020-01-10 @ 11:00 am | < 0.3 | 2020-01-14 |
| 9346715 | 136B | 2020-01-07 @ 12:00 pm | 2020-01-10 @ 11:00 am | < 0.3 | 2020-01-14 |
| 9346716 | 136C | 2020-01-07 @ 12:00 pm | 2020-01-10 @ 11:00 am | < 0.3 | 2020-01-14 |
| 9346717 | 136D | 2020-01-07 @ 12:00 pm | 2020-01-10 @ 11:00 am | < 0.3 | 2020-01-14 |
| 9346718 | 136E | 2020-01-07 @ 12:00 pm | 2020-01-10 @ 11:00 am | < 0.3 | 2020-01-14 |
| 9346719 | 136F | 2020-01-07 @ 12:00 pm | 2020-01-10 @ 11:00 am | < 0.3 | 2020-01-14 |
| 9346727 | 137 | 2020-01-07 @ 12:00 pm | 2020-01-10 @ 12:00 pm | < 0.3 | 2020-01-14 |
| 9346726 | 139 | 2020-01-07 @ 12:00 pm | 2020-01-10 @ 12:00 pm | 0.9 ± 0.4 | 2020-01-14 |
| 9346722 | 142 | 2020-01-07 @ 12:00 pm | 2020-01-10 @ 11:00 am | < 0.3 | 2020-01-14 |
| 9346723 | 142 | 2020-01-07 @ 12:00 pm | 2020-01-10 @ 11:00 am | < 0.3 | 2020-01-14 |
| 9346724 | 143 | 2020-01-07 @ 12:00 pm | 2020-01-10 @ 11:00 am | 1.5 ± 0.4 | 2020-01-14 |
| 9346725 | 143 | 2020-01-07 @ 12:00 pm | 2020-01-10 @ 11:00 am | 1.0 ± 0.4 | 2020-01-14 |
| 9346749 | 150 | 2020-01-07 @ 1:00 pm | 2020-01-10 @ 12:00 pm | < 0.3 | 2020-01-14 |
| 9346743 | 151 | 2020-01-07 @ 1:00 pm | 2020-01-10 @ 12:00 pm | < 0.3 | 2020-01-14 |
| 9346742 | 151 | 2020-01-07 @ 1:00 pm | 2020-01-10 @ 12:00 pm | < 0.3 | 2020-01-14 |
| 9346741 | 152 | 2020-01-07 @ 1:00 pm | 2020-01-10 @ 12:00 pm | 1.0 ± 0.4 | 2020-01-14 |
| 9346780 | 204 | 2020-01-07 @ 2:00 pm | 2020-01-10 @ 12:00 pm | < 0.3 | 2020-01-14 |

January 20, 2020

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
WESTLAND MS
MAIN

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|----------------|----------------------|-----------------------|--------------|-----------------|
| 9346781 | 204 | 2020-01-07 @ 2:00 pm | 2020-01-10 @ 12:00 pm | < 0.3 | 2020-01-14 |
| 9346778 | 221 | 2020-01-07 @ 2:00 pm | 2020-01-10 @ 12:00 pm | < 0.3 | 2020-01-14 |
| 9346777 | 228 | 2020-01-07 @ 2:00 pm | 2020-01-10 @ 12:00 pm | < 0.3 | 2020-01-14 |
| 9346779 | 251 | 2020-01-07 @ 2:00 pm | 2020-01-10 @ 12:00 pm | 0.5 ± 0.3 | 2020-01-14 |
| 9346775 | CAFETERIA | 2020-01-07 @ 2:00 pm | 2020-01-10 @ 12:00 pm | < 0.3 | 2020-01-14 |
| 9346776 | CAFETERIA | 2020-01-07 @ 2:00 pm | 2020-01-10 @ 12:00 pm | 0.6 ± 0.3 | 2020-01-14 |
| 9346774 | CAFETERIA | 2020-01-07 @ 2:00 pm | 2020-01-10 @ 12:00 pm | < 0.3 | 2020-01-14 |

Air Chek 1936 Butler Bridge Rd, Mills River, NC 28759-3892 Phone: (828) 684-0893 Fax: (828) 684-8498



Radon Test Kit Chain of Custody

Project Name: MCPS Radon 2019 Week 3

Name of Schools:

- | | |
|------------------------------|----------------------------|
| 1. Bannockburn E.S. | 12. Montgomery Knolls E.S. |
| 2. Bethesda E.S. | 13. Newport Mills M.S. |
| 3. Bethesda-Chevy Chase H.S. | 14. Oak View E.S. |
| 4. Bradley Hill E.S. | 15. Rock View E.S. |
| 5. Burning Tree E.S. | 16. Roscoe Nix E.S. |
| 6. Burnt Mills E.S. | 17. Sligo M.S. |
| 7. East Silver Springs E.S. | 18. Spring Mill Center |
| 8. Einstein H.S. | 19. Springbrook H.S. |
| 9. Flora Singer E.S. | 20. Westland M.S. |
| 10. Key M.S. | 21. Woodlin M.S. |
| 11. Montgomery Blair H.S. | |

| | Date | Initials |
|----------------------------------|----------------------|----------|
| Radon Test Kits Deployed | 1/6/20 to 1/7/20 | JM |
| Radon Test Kits Collected | 1/9/20 to 1/10/20 | JM |
| Radon Test Kits Shipped to Lab* | 1/10/20 | JM |
| Radon Test Kits Received by Lab* | 1/13/202 | JM |

*All samples sent to Air Check, Inc., 1936 Butler Bridge Rd, Mills River, NC 28759



MCPS RADON TESTING - EXECUTIVE SUMMARY

| | |
|--------------------------|---|
| Site Name | Westland Middle School |
| Date of Report | March 14, 2018 |
| Round of Testing | Initial Follow-up Post Remediation 2 year testing 5 year testing HVAC Upgrade Window Replacement New Addition New Facility |
| # of Rooms Tested | 14 |
| # Rooms ≥ 4.0 pCi/L | 0 |
| Lowest Value | <0.3 pCi/L |
| Highest Value | 3.6 pCi/L |

Project Status

Current Project Status at this time: Retesting completed; no further action at this time.



March 14, 2018

Mr. Richard Cox, MS
Team Leader
Montgomery County Public Schools
Division of Maintenance
Gaithersburg, Maryland 20879

Re: Radon Testing Services

KCI Job #1214634188

Location: Westland Middle School

5511 Massachusetts Ave.
Bethesda, Maryland 20816

Dear Mr. Cox:

KCI Technologies, Inc. (KCI) is pleased to submit the following report to Montgomery County Public Schools pursuant to completing a “short-term” 3-day radon test for the Westland Middle School, located at 5511 Massachusetts Ave. in Bethesda, Maryland 20816 (subject site).

SCOPE OF SERVICES

KCI conducted radon testing at the subject site to evaluate indoor radon levels relative to the USEPA's recommended action level of 4.0 picocuries per Liter (pCi/L) - the level at which EPA recommends that schools take action to reduce the level. KCI conducted the radon testing in accordance with American Association of Radon Scientists and Technologists (AARST) *Protocol for Conducting Measurements of Radon and Radon Decay Products in Schools and Large Buildings*. A National Radon Safety Board (NRSB) Radon Measurement Specialist (certification #14SS056) supervised the testing. Additional information on radon management and the health effects of radon exposure is available from www.montgomerycountymd.gov/dep/air/radon or www.epa.gov/radon.

KCI visited the site on February 13, 2018 and deployed sixteen (16) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance.

KCI sampled the following locations during this follow-up test:

1. Rooms not successfully tested,
2. Rooms with elevated November 2017 results (i.e. ≥ 3.5 pCi/L).

A floor plan map of the building with the test locations is included as Appendix A of this report.

As a quality control measure, KCI included duplicate samples, field blanks, lab transit blanks, and office blanks in accordance with AARST recommendations. In addition, KCI submitted six (6) test kits to Bowser-Morner, Inc. as spike samples. The spiked tests were exposed to a known radon concentration by Bowser-Morner, Inc. prior to being returned to the laboratory for analysis.

KCI returned to the site on February 16, 2018 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Aircheck, Inc. for analysis by gamma-ray spectroscopy. Aircheck, Inc. is a NRSB certified analytical laboratory for radon analysis (certification #ARL1402) located at 1936 Butler Bridge Road, Mills River, North Carolina.

EVALUATION OF TESTING CONDITIONS

These tests represent:

- Follow-up to post-mitigation biennial testing.

These tests were conducted to:

- Confirm the success of the mitigation system(s).

According to AARST, *Protocol for Conducting Measurements of Radon and Radon Decay Products in Schools and Large Buildings*, ideal testing conditions would be when the building is fully occupied and the heating system is active. For this test, the facility's HVAC system was operating in heating mode; therefore, KCI concludes that this test was conducted during ideal testing conditions.

KCI recorded observations of the following conditions in each room at the time of deployment and collection of the radon test kits:

- Indoor temperature,
- HVAC Operation,
- Dehumidifier operation,
- Humidifier operation,
- Ceiling fan operation, and
- Open windows or doors.

KCI also compiled weather data for the testing period and conducted observations of relevant field conditions. During the test period, weather records indicate low temperatures ranged from the mid-20s to upper 40s and high temperatures ranged from the high-30s to the high-60s. Maximum sustained winds ranged from 10-18 miles per hour. Average humidity was around 73%. 0.30 Inches of precipitation was recorded during the testing period.

RESULTS

The sampling locations and analytical results are listed on Table 1 (Attachment B). The quality control sample locations and analytical results are listed on Table 2 (Attachment B). The laboratory analytical results are included in Attachment C. Laboratory results and exposure data for the spike samples are also included in Attachment C.

The results of the radon test analysis indicated the following:

| Radon Concentration | Room | Result |
|----------------------------|------------------|------------------|
| ≥ 4.0 pCi/L | None | N/A |
| ≤ 4.0 pCi/L | See Attachment B | See Attachment B |

| Quality Control Samples | |
|--------------------------------|---|
| Results of Blank Canisters: | The field blank, office blanks, and lab transit blanks had test results of less than the laboratory detection limit of 0.3 pCi/L. |
| Adequate Laboratory Precision? | Review of the duplicate sample analysis indicates that adequate laboratory measurement precision was achieved. |
| Spike Sample Analysis: | The Spike sample analysis results indicate the laboratory is operating within statistical control limits. |

Our professional services have been performed in accordance with customary principles and practices in the field of industrial hygiene and engineering. If you have any questions or comments regarding this report, please feel free to contact me at 410-316-7800.

Sincerely,



Radon Measurement Specialist
KCI Technologies, Inc.

Attachments:

B - Radon Test Summary Spreadsheets

C - Laboratory Analytical Results

ATTACHMENT B

Radon Test Summary Spreadsheet

Table Notes:

AC- Activated Charcoal

ACI- Air Chek, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank

PM- Project Manager

QC- Quality Control

| Table 1 - Radon Testing Results | | |
|--|--------------------|---------------|
| Westland Middle School | | |
| Test Period: 02/13/18-02/16/18 | | |
| Kit Number | Room / Area | Result |
| 7975475 | 105 | 0.7 |
| 7975476 | 106 | 0.6 |
| 7975463 | 136 | 0.7 |
| 7975464 | 139 | 1.3 |
| 7975495 | 100F | < 0.3 |
| 7975473 | 118 OFFICE | < 0.3 |
| 7975460 | 125B | 0.9 |
| 7975468 | 125C | 1.1 |
| 7975474 | BLR | 3.6 |
| 7975466 | GLR | 1.4 |
| 7975478 | KITCHEN | < 0.3 |
| 7975462 | KITCHEN OFFICE | < 0.3 |
| 7975465 | MED CENTER | 0.6 |
| 7975461 | STAGE | < 0.3 |

Table Note:

* Missing or Compromised Sample

| Table 2 - Radon Testing Results | | |
|--|-----------------|---------------|
| Westland Middle School | | |
| Test Period: 02/13/18-02/16/18 | | |
| Kit Number | QC Type | Result |
| 7975477 | D (106) | 0.7 |
| 7975467 | FB (MED CENTER) | < 0.3 |

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

Radon test result report for:

**WESTLAND MIDDLE SCHOOL
MAIN**

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|---------|----------------|-----------------------|----------------------|-----------|------------|
| 7975495 | 100F | 2018-02-13 @ 10:00 am | 2018-02-16 @ 9:00 am | < 0.3 | 2018-02-20 |
| 7975475 | 105 | 2018-02-13 @ 10:00 am | 2018-02-16 @ 9:00 am | 0.7 ± 0.3 | 2018-02-20 |
| 7975477 | 106 | 2018-02-13 @ 10:00 am | 2018-02-16 @ 9:00 am | 0.7 ± 0.3 | 2018-02-20 |
| 7975476 | 106 | 2018-02-13 @ 10:00 am | 2018-02-16 @ 9:00 am | 0.6 ± 0.3 | 2018-02-20 |
| 7975473 | 118 OFFICE | 2018-02-13 @ 11:00 am | 2018-02-16 @ 9:00 am | < 0.3 | 2018-02-20 |
| 7975460 | 125B | 2018-02-13 @ 10:00 am | 2018-02-16 @ 9:00 am | 0.9 ± 0.3 | 2018-02-20 |
| 7975468 | 125C | 2018-02-13 @ 10:00 am | 2018-02-16 @ 9:00 am | 1.1 ± 0.4 | 2018-02-20 |
| 7975463 | 136 | 2018-02-13 @ 10:00 am | 2018-02-16 @ 9:00 am | 0.7 ± 0.3 | 2018-02-20 |
| 7975464 | 139 | 2018-02-13 @ 10:00 am | 2018-02-16 @ 9:00 am | 1.3 ± 0.4 | 2018-02-20 |
| 7975474 | BLR | 2018-02-13 @ 10:00 am | 2018-02-16 @ 9:00 am | 3.6 ± 0.5 | 2018-02-20 |
| 7975466 | GLR | 2018-02-13 @ 10:00 am | 2018-02-16 @ 9:00 am | 1.4 ± 0.3 | 2018-02-20 |
| 7975478 | KITCHEN | 2018-02-13 @ 10:00 am | 2018-02-16 @ 9:00 am | < 0.3 | 2018-02-20 |
| 7975462 | KITCHEN OFFICE | 2018-02-13 @ 10:00 am | 2018-02-16 @ 9:00 am | < 0.3 | 2018-02-20 |
| 7975465 | MED CENTER | 2018-02-13 @ 10:00 am | 2018-02-16 @ 9:00 am | 0.6 ± 0.3 | 2018-02-20 |
| 7975467 | MED CENTER | 2018-02-13 @ 10:00 am | 2018-02-16 @ 9:00 am | < 0.3 | 2018-02-20 |
| 7975461 | STAGE | 2018-02-13 @ 10:00 am | 2018-02-16 @ 9:00 am | < 0.3 | 2018-02-20 |



Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase

Names of Schools:

- 1. Westbrook Elementary School
- 2. Westland Middle School
- 3. Walt Whitman High School
- 4. Cloverly Elementary School
- 5. Sligo Middle School
- 6. Flora Singer Elementary School
- 7. Albert Einstein High School
- 8. Roscoe Nix Elementary School
- 9. Mario Loiederman Middle School
- 10. Sargent Shriver Elementary School
- 11. Whetstone Elementary School
- 12. Brooke Grove Elementary School
- 13. Clearspring Elementary School
- 14. Beall Elementary School
- 15. Maryvale Elementary School
- 16. Lathrop E. Smith Center
- 17. Laytonsville Elementary School
- 18. Germantown Elementary School
- 19. Spring Mill Center
- 20. Northwood High School
- 21. E. Silver Spring Elementary School
- 22. Silver Spring Int. Middle School
- 23. Clarksburg High School
- 24. Rosa Parks Middle School
- 25. Greenwood Elementary School
- 26. Montgomery Knolls Elem. School
- 27. Watkins Mill Elementary School
- 28. Gaithersburg Elementary School
- 29. Viers Mill Elementary School
- 30. Rock View Elementary School

| | Date | Initials |
|----------------------------------|---------|----------|
| Radon Test Kits Deployed | 2/13/18 | JM |
| Radon Test Kits Collected | 2/16/18 | JM |
| Radon Test Kits Shipped to Lab* | 2/16/18 | JM |
| Radon Test Kits Received by Lab* | 2/20/18 | JM |

*All samples sent to Air Check, Inc., 1936 Butler Bridge Rd, Mills River, NC 28759

Radon test result report for:
OFFICE BLANKS

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|----------------|----------------------|----------------------|--------------|-----------------|
| 7979482 | 1 | 2018-02-13 @ 1:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7986991 | 10 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7985684 | 11 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7986987 | 12 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7986993 | 13 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7986990 | 14 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7979485 | 2 | 2018-02-13 @ 1:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7985686 | 3 | 2018-02-13 @ 1:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7986995 | 4 | 2018-02-13 @ 1:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7986989 | 5 | 2018-02-13 @ 1:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7986998 | 6 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7986986 | 7 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7986985 | 8 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7986997 | 9 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |

Radon test result report for:
TRANSIT BLANKS

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|----------------|----------------------|----------------------|--------------|-----------------|
| 7984188 | 1 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7984044 | 10 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7986582 | 11 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7986999 | 12 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7987000 | 13 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7984196 | 14 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7986996 | 2 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7986994 | 3 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7986992 | 4 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7985680 | 5 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7985698 | 6 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7985699 | 7 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7985700 | 8 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7985872 | 9 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |

February 28, 2018

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

MCPS - Spike Sample Laboratory Results. Measured values are satisfactory, i.e. within $\pm 25\%$ of the chamber's reference value (20.9 pCi/L).

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|----------------|-----------------------|-----------------------|----------------|-----------------|
| 7984181 | 1 | 2018-02-16 @ 11:00 am | 2018-02-19 @ 11:00 am | 19.7 \pm 0.8 | 2018-02-21 |
| 7986621 | 2 | 2018-02-16 @ 11:00 am | 2018-02-19 @ 11:00 am | 19.4 \pm 0.8 | 2018-02-21 |
| 7985683 | 3 | 2018-02-16 @ 11:00 am | 2018-02-19 @ 11:00 am | 19.5 \pm 0.8 | 2018-02-21 |
| 7984168 | 4 | 2018-02-16 @ 11:00 am | 2018-02-19 @ 11:00 am | 20.5 \pm 0.8 | 2018-02-21 |
| 7986618 | 5 | 2018-02-16 @ 11:00 am | 2018-02-19 @ 11:00 am | 19.9 \pm 0.8 | 2018-02-21 |
| 7984169 | 6 | 2018-02-16 @ 11:00 am | 2018-02-19 @ 11:00 am | 20.4 \pm 0.8 | 2018-02-21 |

Air Chek, Inc. 1936 Butler Bridge Rd, Mills River, NC 28759-3892 Phone: (828) 684-0893 Fax: (828) 684-8498

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies Inc. Job Number 183530

NOMINAL Conditions: Radon Conc 20.9 pCi/L Rel. Hum 49.8 % Temp. 79.1 F

Date Start: 2/16/18 Date Stop: 2/19/18 Date Start: _____ Date Stop: _____
Time Start: 1052 Time Stop: 1052 Time Start: _____ Time Stop: _____
Device No.'s: (6) Char. Bags- Device No.'s: _____
7984181, 7986621, 7985683 _____
7984168, 7986618, 7984169 _____
G3 Middle

Date Start: _____ Date Stop: _____ Date Start: _____ Date Stop: _____
Time Start: _____ Time Stop: _____ Time Start: _____ Time Stop: _____
Device No.'s: _____ Device No.'s: _____

Date Start: _____ Date Stop: _____ Date Start: _____ Date Stop: _____
Time Start: _____ Time Stop: _____ Time Start: _____ Time Stop: _____
Device No.'s: _____ Device No.'s: _____

Note: All times are in 24-hour (military) notation, Eastern Standard Time (EST)
Background = 7 μ R/h Elevation = 820 ft



MCPS RADON TESTING - EXECUTIVE SUMMARY

| | |
|--------------------------|---|
| Site Name | Westland Middle School |
| Date of Report | January 30, 2018 |
| Round of Testing | Initial Follow-up Post Remediation 2 year testing 5 year testing HVAC Upgrade Window Replacement New Addition New Facility |
| # of Rooms Tested | 67 |
| # Rooms \geq 4.0 pCi/L | 0 |
| Lowest Value | < 0.3 pCi/L |
| Highest Value | 1.9 pCi/L |

Project Status

Current Project Status at this time: Results satisfactory to date; missed locations and missing/compromised tests to be sampled.



January 30, 2018

Mr. Richard Cox, MS
Team Leader
Montgomery County Public Schools
Division of Maintenance
Rockville, Maryland 20855

Re: Radon Testing Services

KCI Job #1214694182

Location: Westland Middle School

5511 Massachusetts Ave.
Bethesda, Maryland 20816

Dear Mr. Cox:

KCI Technologies, Inc. (KCI) is pleased to submit the following report to Montgomery County Public Schools pursuant to completing a “short-term” 3-day radon test for the Westland Middle School, located at 5511 Massachusetts Ave. in Bethesda, Maryland 20816 (subject site).

SCOPE OF SERVICES

KCI conducted radon testing at the subject site to evaluate indoor radon levels relative to the USEPA's recommended action level of 4.0 picocuries per Liter (pCi/L) - the level at which EPA recommends that schools take action to reduce the level. KCI conducted the radon testing in accordance with American Association of Radon Scientists and Technologists (AARST) *Protocol for Conducting Measurements of Radon and Radon Decay Products in Schools and Large Buildings*. A National Radon Safety Board (NRSB) Radon Measurement Specialist (certification #14SS056) supervised the testing. Additional information on radon management and the health effects of radon exposure is available from www.montgomerycountymd.gov/dep/air/radon or www.epa.gov/radon.

KCI visited the site on November 27, 2017 and deployed eighty-two (82) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. A floor plan map of the building with the test locations is included as Appendix A of this report.

As a quality control measure, KCI included duplicate samples, field blanks, lab transit blanks, and office blanks in accordance with AARST recommendations. In addition, KCI submitted six (6) test kits to

Bowser-Morner, Inc. as spike samples. The spiked tests were exposed to a known radon concentration by Bowser-Morner, Inc. prior to being returned to the laboratory for analysis.

KCI returned to the site on November 30, 2017 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Aircheck, Inc. for analysis by gamma-ray spectroscopy. Aircheck, Inc. is a NRSB certified analytical laboratory for radon analysis (certification #ARL1402) located at 1936 Butler Bridge Road, Mills River, North Carolina.

EVALUATION OF TESTING CONDITIONS

These tests represent:

- 2 year testing.

These tests were conducted to:

- Confirm the success of the mitigation system(s).

According to AARST, *Protocol for Conducting Measurements of Radon and Radon Decay Products in Schools and Large Buildings*, ideal testing conditions would be when the building is fully occupied and the heating system is active. For this test, the facility's HVAC system was operating in heating mode; therefore, KCI concludes that this test was conducted during ideal testing conditions.

KCI recorded observations of the following conditions in each room at the time of deployment and collection of the radon test kits:

- Indoor temperature,
- HVAC Operation,
- Dehumidifier operation,
- Humidifier operation,
- Ceiling fan operation, and
- Open windows or doors.

KCI also compiled weather data for the testing period and conducted observations of relevant field conditions. During the test period, weather records indicate low temperatures were in the 30s and high temperatures ranged from the low-50s to mid-60s. Maximum sustained winds ranged from 8-15 miles per hour. Average humidity was around 65%. 0.02 Inches of precipitation was recorded during the testing period.

A magnitude 4.1 earthquake was reported on Thursday, November 30 near Dover, Delaware approximately 95 miles east of Gaithersburg, Maryland. The earthquake occurred during or just after the radon testing period for this facility. In general, enhanced radon emissions have been observed prior to earthquakes and this has been recorded all over the world, according to the research article entitled *Radon-222: A Potential Short-Term Earthquake Precursor*, published June 30, 2015 in the Journal of Earth Science and Climate

Change. The nearby earthquake, which occurred during or prior to the testing period, may have resulted in higher-than-normal radon test results for this facility.

RESULTS

The sampling locations, field observations, and analytical results are listed on Table 1 (Attachment B). The quality control sample locations and analytical results are listed on Table 2 (Attachment B). Missing/compromised tests, missed rooms, and locked rooms are listed on Table 3 (Attachment B). The laboratory analytical results are included in Attachment C. Laboratory results and exposure data for the spike samples are also included in Attachment C.

The results of the radon test analysis indicated the following:

| Radon Concentration | Room | Result |
|----------------------------|------------------|------------------|
| ≥ 4.0 pCi/L | None | N/A |
| ≤ 4.0 pCi/L | See Attachment B | See Attachment B |

| Quality Control Samples | |
|--------------------------------|---|
| Results of Blank Canisters: | The field blanks, office blank, and lab transit blanks had test results of less than the laboratory detection limit of 0.3 pCi/L. |
| Adequate Laboratory Precision? | Review of the duplicate sample analysis indicates that adequate laboratory measurement precision was achieved. |
| Spike Sample Analysis: | The Spike sample analysis results indicate the laboratory is operating within statistical control limits. |

Our professional services have been performed in accordance with customary principles and practices in the field of industrial hygiene and engineering. If you have any questions or comments regarding this report, please feel free to contact me at 410-316-7800.

Sincerely,



James Mouldsdale, CHMM
Radon Measurement Specialist
KCI Technologies, Inc.

Attachments:

B - Tables 1-3, Radon Test Summary Spreadsheets

C- Laboratory Analytical Results

ATTACHMENT B

Radon Test Summary Spreadsheet

Table Notes:

AC- Activated Charcoal

ACI- Air Chek, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank

PM- Project Manager

QC- Quality Control

| Radon Testing Results | | |
|---------------------------------------|--------------------|---------------|
| Westland Middle School | | |
| Test Period: 11/27/17-11/30/17 | | |
| Kit Number | Room / Area | Result |
| 7976416 | 102 | < 0.3 |
| 7975782 | 106 | 0.5 |
| 7975776 | 107 | 0.7 |
| 7975775 | 109 | 0.7 |
| 7975768 | 110 | < 0.3 |
| 7975767 | 111 | 0.7 |
| 7975756 | 112 | 0.9 |
| 7975755 | 113 | 0.6 |
| 7975764 | 114 | < 0.3 |
| 7975765 | 115 | < 0.3 |
| 7975766 | 116 | < 0.3 |
| 7975771 | 117 | 0.6 |
| 7975772 | 118 | 0.6 |
| 7975773 | 121 | < 0.3 |
| 7975774 | 122 | 0.9 |
| 7975758 | 124 | 0.7 |
| 7975750 | 125 | 1.1 |
| 7975751 | 125 | 1.1 |
| 7975744 | 126 | 1.7 |
| 7975740 | 128 | < 0.3 |
| 7975739 | 129 | < 0.3 |
| 7975729 | 130 | < 0.3 |
| 7976414 | 131 | < 0.3 |
| 7976410 | 132 | 0.8 |
| 7976413 | 133 | 0.7 |
| 7975799 | 134 | 0.6 |
| 7975748 | 135 | < 0.3 |
| 7975784 | 137 | 0.6 |
| 7975789 | 142 | 0.6 |
| 7975753 | 143 | 0.7 |
| 7975754 | 143 | 1.0 |
| 7975790 | 145 | 1.4 |
| 7975760 | 150 | 0.8 |
| 7975759 | 151 | 1.0 |
| 7975749 | 152 | 1.1 |
| 7975746 | 212 | 1.1 |
| 7975791 | 214 | 1.3 |
| 7975792 | 222 | < 0.3 |
| 7975796 | 226 | < 0.3 |
| 7975795 | 228 | 0.6 |
| 7975788 | 230 | 0.5 |
| 7975793 | 100A | < 0.3 |
| 7975785 | 100B | 0.6 |
| 7975786 | 100C | < 0.3 |
| 7975797 | 100D | 0.8 |
| 7975798 | 100E | < 0.3 |

Table Note:

* Missing or Compromised Sample

| Radon Testing Results | | |
|---------------------------------------|--------------------|---------------|
| Westland Middle School | | |
| Test Period: 11/27/17-11/30/17 | | |
| Kit Number | Room / Area | Result |
| 7975800 | * 100F (Tampered) | < 0.3 |
| 7976406 | 100G | < 0.3 |
| 7976415 | 100H | 0.5 |
| 7975783 | 105 OFFICE | < 0.3 |
| 7975757 | 125A | 0.8 |
| 7975741 | 126A | 1.9 |
| 7975742 | 126B | 1.7 |
| 7975743 | 126C | 1.6 |
| 7976404 | 127A | < 0.3 |
| 7976405 | 127B | 0.9 |
| 7976407 | 127C | 0.8 |
| 7976408 | 127D | 0.6 |
| 7976409 | 131B | 0.7 |
| 7975747 | * 135A (Missing) | - |
| 7975745 | 136A | < 0.3 |
| 7975777 | 136B | < 0.3 |
| 7975778 | 136C | 0.6 |
| 7975779 | 136D | < 0.3 |
| 7975780 | 136E | 0.8 |
| 7975787 | 136F | 0.7 |
| 7975794 | 136G | 0.5 |
| 7975769 | 143-2 | 0.7 |
| 7975770 | 143-2 | 0.6 |
| 7976401 | CAF | 0.5 |
| 7976402 | CAF | 0.8 |

Table Note:

* Missing or Compromised Sample

| Radon Testing Results | | |
|---------------------------------------|----------------|---------------|
| Westland Middle School | | |
| Test Period: 11/27/17-11/30/17 | | |
| Kit Number | QC Type | Result |
| 7976417 | D (102) | < 0.3 |
| 7975781 | D (107) | 0.6 |
| 7975763 | D (114) | 0.6 |
| 7975752 | D (125) | 0.8 |
| 7975738 | D (130) | < 0.3 |
| 7976411 | D (132) | < 0.3 |
| 7976403 | D (CAF) | < 0.3 |
| 7975762 | FB (114) | < 0.3 |
| 7976412 | FB (132) | < 0.3 |
| 7975761 | FB (150) | < 0.3 |
| 7977284 | OB (OB) | < 0.3 |

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

Radon test result report for:
WESTLAND MS
MAIN

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|---------|------------|----------------------|-----------------------|-----------|------------|
| 7975793 | 100A | 2017-11-27 @ 5:00 pm | 2017-11-30 @ 11:00 am | < 0.3 | 2017-12-04 |
| 7975785 | 100B | 2017-11-27 @ 5:00 pm | 2017-11-30 @ 11:00 am | 0.6 ± 0.3 | 2017-12-04 |
| 7975786 | 100C | 2017-11-27 @ 5:00 pm | 2017-11-30 @ 11:00 am | < 0.3 | 2017-12-04 |
| 7975797 | 100D | 2017-11-27 @ 5:00 pm | 2017-11-30 @ 11:00 am | 0.8 ± 0.4 | 2017-12-04 |
| 7975798 | 100E | 2017-11-27 @ 5:00 pm | 2017-11-30 @ 11:00 am | < 0.3 | 2017-12-04 |
| 7975800 | 100F | 2017-11-27 @ 5:00 pm | 2017-11-30 @ 11:00 am | < 0.3 | 2017-12-04 |
| 7976406 | 100G | 2017-11-27 @ 5:00 pm | 2017-11-30 @ 11:00 am | < 0.3 | 2017-12-04 |
| 7976415 | 100H | 2017-11-27 @ 5:00 pm | 2017-11-30 @ 11:00 am | 0.5 ± 0.4 | 2017-12-04 |
| 7976416 | 102 | 2017-11-27 @ 6:00 pm | 2017-11-30 @ 11:00 am | < 0.3 | 2017-12-04 |
| 7976417 | 102 | 2017-11-27 @ 6:00 pm | 2017-11-30 @ 11:00 am | < 0.3 | 2017-12-04 |
| 7975783 | 105 OFFICE | 2017-11-27 @ 3:00 pm | 2017-11-30 @ 12:00 pm | < 0.3 | 2017-12-04 |
| 7975782 | 106 | 2017-11-27 @ 3:00 pm | 2017-11-30 @ 12:00 pm | 0.5 ± 0.4 | 2017-12-04 |
| 7975781 | 107 | 2017-11-27 @ 3:00 pm | 2017-11-30 @ 12:00 pm | 0.6 ± 0.3 | 2017-12-04 |
| 7975776 | 107 | 2017-11-27 @ 3:00 pm | 2017-11-30 @ 12:00 pm | 0.7 ± 0.4 | 2017-12-04 |
| 7975775 | 109 | 2017-11-27 @ 3:00 pm | 2017-11-30 @ 12:00 pm | 0.7 ± 0.3 | 2017-12-04 |
| 7975768 | 110 | 2017-11-27 @ 3:00 pm | 2017-11-30 @ 12:00 pm | < 0.3 | 2017-12-04 |
| 7975767 | 111 | 2017-11-27 @ 3:00 pm | 2017-11-30 @ 12:00 pm | 0.7 ± 0.3 | 2017-12-04 |
| 7975756 | 112 | 2017-11-27 @ 3:00 pm | 2017-11-30 @ 12:00 pm | 0.9 ± 0.3 | 2017-12-04 |
| 7975755 | 113 | 2017-11-27 @ 3:00 pm | 2017-11-30 @ 12:00 pm | 0.6 ± 0.3 | 2017-12-04 |
| 7975762 | 114 | 2017-11-27 @ 3:00 pm | 2017-11-30 @ 12:00 pm | < 0.3 | 2017-12-04 |
| 7975763 | 114 | 2017-11-27 @ 3:00 pm | 2017-11-30 @ 12:00 pm | 0.6 ± 0.3 | 2017-12-04 |
| 7975764 | 114 | 2017-11-27 @ 3:00 pm | 2017-11-30 @ 12:00 pm | < 0.3 | 2017-12-04 |
| 7975765 | 115 | 2017-11-27 @ 2:00 pm | 2017-11-30 @ 12:00 pm | < 0.3 | 2017-12-04 |
| 7975766 | 116 | 2017-11-27 @ 2:00 pm | 2017-11-30 @ 11:00 am | < 0.3 | 2017-12-04 |
| 7975771 | 117 | 2017-11-27 @ 2:00 pm | 2017-11-30 @ 11:00 am | 0.6 ± 0.3 | 2017-12-04 |
| 7975772 | 118 | 2017-11-27 @ 2:00 pm | 2017-11-30 @ 11:00 am | 0.6 ± 0.3 | 2017-12-04 |
| 7975773 | 121 | 2017-11-27 @ 2:00 pm | 2017-11-30 @ 11:00 am | < 0.3 | 2017-12-04 |
| 7975774 | 122 | 2017-11-27 @ 2:00 pm | 2017-11-30 @ 11:00 am | 0.9 ± 0.3 | 2017-12-04 |
| 7975758 | 124 | 2017-11-27 @ 2:00 pm | 2017-11-30 @ 11:00 am | 0.7 ± 0.3 | 2017-12-04 |
| 7975750 | 125 | 2017-11-27 @ 2:00 pm | 2017-11-30 @ 11:00 am | 1.1 ± 0.3 | 2017-12-04 |
| 7975751 | 125 | 2017-11-27 @ 2:00 pm | 2017-11-30 @ 11:00 am | 1.1 ± 0.3 | 2017-12-04 |
| 7975752 | 125 | 2017-11-27 @ 2:00 pm | 2017-11-30 @ 11:00 am | 0.8 ± 0.3 | 2017-12-04 |
| 7975757 | 125A | 2017-11-27 @ 2:00 pm | 2017-11-30 @ 11:00 am | 0.8 ± 0.3 | 2017-12-04 |
| 7975744 | 126 | 2017-11-27 @ 2:00 pm | 2017-11-30 @ 12:00 pm | 1.7 ± 0.4 | 2017-12-04 |
| 7975741 | 126A | 2017-11-27 @ 1:00 pm | 2017-11-30 @ 12:00 pm | 1.9 ± 0.3 | 2017-12-04 |
| 7975742 | 126B | 2017-11-27 @ 1:00 pm | 2017-11-30 @ 12:00 pm | 1.7 ± 0.4 | 2017-12-04 |
| 7975743 | 126C | 2017-11-27 @ 1:00 pm | 2017-11-30 @ 12:00 pm | 1.6 ± 0.4 | 2017-12-04 |

Radon test result report for:
WESTLAND MS
MAIN

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|---------|---------|----------------------|-----------------------|-----------|------------|
| 7976404 | 127A | 2017-11-27 @ 3:00 pm | 2017-11-30 @ 11:00 am | < 0.3 | 2017-12-04 |
| 7976405 | 127B | 2017-11-27 @ 3:00 pm | 2017-11-30 @ 11:00 am | 0.9 ± 0.4 | 2017-12-04 |
| 7976407 | 127C | 2017-11-27 @ 3:00 pm | 2017-11-30 @ 11:00 am | 0.8 ± 0.3 | 2017-12-04 |
| 7976408 | 127D | 2017-11-27 @ 3:00 pm | 2017-11-30 @ 11:00 am | 0.6 ± 0.4 | 2017-12-04 |
| 7975740 | 128 | 2017-11-27 @ 1:00 pm | 2017-11-30 @ 11:00 am | < 0.3 | 2017-12-04 |
| 7975739 | 129 | 2017-11-27 @ 1:00 pm | 2017-11-30 @ 11:00 am | < 0.3 | 2017-12-04 |
| 7975738 | 130 | 2017-11-27 @ 1:00 pm | 2017-11-30 @ 11:00 am | < 0.3 | 2017-12-04 |
| 7975729 | 130 | 2017-11-27 @ 1:00 pm | 2017-11-30 @ 11:00 am | < 0.3 | 2017-12-04 |
| 7976414 | 131 | 2017-11-27 @ 1:00 pm | 2017-11-30 @ 11:00 am | < 0.3 | 2017-12-04 |
| 7976409 | 131B | 2017-11-27 @ 4:00 pm | 2017-11-30 @ 11:00 am | 0.7 ± 0.4 | 2017-12-04 |
| 7976410 | 132 | 2017-11-27 @ 1:00 pm | 2017-11-30 @ 11:00 am | 0.8 ± 0.3 | 2017-12-04 |
| 7976411 | 132 | 2017-11-27 @ 1:00 pm | 2017-11-30 @ 11:00 am | < 0.3 | 2017-12-04 |
| 7976412 | 132 | 2017-11-27 @ 1:00 pm | 2017-11-30 @ 11:00 am | < 0.3 | 2017-12-04 |
| 7976413 | 133 | 2017-11-27 @ 1:00 pm | 2017-11-30 @ 11:00 am | 0.7 ± 0.3 | 2017-12-04 |
| 7975799 | 134 | 2017-11-27 @ 4:00 pm | 2017-11-30 @ 11:00 am | 0.6 ± 0.4 | 2017-12-04 |
| 7975748 | 135 | 2017-11-27 @ 4:00 pm | 2017-11-30 @ 11:00 am | < 0.3 | 2017-12-04 |
| 7975745 | 136A | 2017-11-27 @ 5:00 pm | 2017-11-30 @ 12:00 pm | < 0.3 | 2017-12-04 |
| 7975777 | 136B | 2017-11-27 @ 5:00 pm | 2017-11-30 @ 11:00 am | < 0.3 | 2017-12-04 |
| 7975778 | 136C | 2017-11-27 @ 5:00 pm | 2017-11-30 @ 11:00 am | 0.6 ± 0.4 | 2017-12-04 |
| 7975779 | 136D | 2017-11-27 @ 5:00 pm | 2017-11-30 @ 11:00 am | < 0.3 | 2017-12-04 |
| 7975780 | 136E | 2017-11-27 @ 5:00 pm | 2017-11-30 @ 12:00 pm | 0.8 ± 0.4 | 2017-12-04 |
| 7975787 | 136F | 2017-11-27 @ 5:00 pm | 2017-11-30 @ 11:00 am | 0.7 ± 0.3 | 2017-12-04 |
| 7975794 | 136G | 2017-11-27 @ 5:00 pm | 2017-11-30 @ 11:00 am | 0.5 ± 0.4 | 2017-12-04 |
| 7975784 | 137 | 2017-11-27 @ 4:00 pm | 2017-11-30 @ 12:00 pm | 0.6 ± 0.4 | 2017-12-04 |
| 7975789 | 142 | 2017-11-27 @ 4:00 pm | 2017-11-30 @ 12:00 pm | 0.6 ± 0.4 | 2017-12-04 |
| 7975753 | 143 | 2017-11-27 @ 4:00 pm | 2017-11-30 @ 12:00 pm | 0.7 ± 0.3 | 2017-12-04 |
| 7975754 | 143 | 2017-11-27 @ 4:00 pm | 2017-11-30 @ 12:00 pm | 1.0 ± 0.4 | 2017-12-04 |
| 7975769 | 143-2 | 2017-11-27 @ 4:00 pm | 2017-11-30 @ 12:00 pm | 0.7 ± 0.3 | 2017-12-04 |
| 7975770 | 143-2 | 2017-11-27 @ 4:00 pm | 2017-11-30 @ 12:00 pm | 0.6 ± 0.4 | 2017-12-04 |
| 7975790 | 145 | 2017-11-27 @ 4:00 pm | 2017-11-30 @ 12:00 pm | 1.4 ± 0.4 | 2017-12-04 |
| 7975761 | 150 | 2017-11-27 @ 6:00 pm | 2017-11-30 @ 11:00 am | < 0.3 | 2017-12-04 |
| 7975760 | 150 | 2017-11-27 @ 2:00 pm | 2017-11-30 @ 11:00 am | 0.8 ± 0.3 | 2017-12-04 |
| 7975759 | 151 | 2017-11-27 @ 2:00 pm | 2017-11-30 @ 11:00 am | 1.0 ± 0.3 | 2017-12-04 |
| 7975749 | 152 | 2017-11-27 @ 2:00 pm | 2017-11-30 @ 11:00 am | 1.1 ± 0.3 | 2017-12-04 |
| 7975746 | 212 | 2017-11-27 @ 4:00 pm | 2017-11-30 @ 12:00 pm | 1.1 ± 0.4 | 2017-12-04 |
| 7975791 | 214 | 2017-11-27 @ 4:00 pm | 2017-11-30 @ 12:00 pm | 1.3 ± 0.4 | 2017-12-04 |
| 7975792 | 222 | 2017-11-27 @ 4:00 pm | 2017-11-30 @ 12:00 pm | < 0.3 | 2017-12-04 |

December 19, 2017

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
WESTLAND MS
MAIN

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|----------------|----------------------|-----------------------|--------------|-----------------|
| 7975796 | 226 | 2017-11-27 @ 5:00 pm | 2017-11-30 @ 12:00 pm | < 0.3 | 2017-12-04 |
| 7975795 | 228 | 2017-11-27 @ 5:00 pm | 2017-11-30 @ 12:00 pm | 0.6 ± 0.4 | 2017-12-04 |
| 7975788 | 230 | 2017-11-27 @ 5:00 pm | 2017-11-30 @ 12:00 pm | 0.5 ± 0.4 | 2017-12-04 |
| 7976403 | CAF | 2017-11-27 @ 3:00 pm | 2017-11-30 @ 12:00 pm | < 0.3 | 2017-12-04 |
| 7976401 | CAF | 2017-11-27 @ 3:00 pm | 2017-11-30 @ 12:00 pm | 0.5 ± 0.4 | 2017-12-04 |
| 7976402 | CAF | 2017-11-27 @ 3:00 pm | 2017-11-30 @ 12:00 pm | 0.8 ± 0.3 | 2017-12-04 |
| 7977284 | OB | 2017-11-27 @ 2:00 pm | 2017-11-30 @ 2:00 pm | < 0.3 | 2017-12-05 |

Air Chek, Inc. 1936 Butler Bridge Rd, Mills River, NC 28759-3892 Phone: (828) 684-0893 Fax: (828) 684-8498

December 21, 2017

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
WESTLAND MS
MAIN

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|----------------|----------------|--------------|--------------|-----------------|
| 7975747 | 135A | @ | @ | | |

Air Chek, Inc. 1936 Butler Bridge Rd, Mills River, NC 28759-3892 Phone: (828) 684-0893 Fax: (828) 684-8498



Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase

Names of Schools:

- | | |
|--|---------------------------------------|
| 1. Montgomery Knolls Elementary School | 14. Flora Singer Elementary School |
| 2. New Hampshire Estates Elementary School | 15. Sligo Middle School |
| 3. Montgomery Blair High School | 16. Mario Loiederman Middle School |
| 4. Silver Creek Middle School | 17. Roscoe Nix Elementary School |
| 5. Sligo Creek Elementary School | 18. Sargent Shriver Elementary School |
| 6. East Silver Spring Elementary School | 19. |
| 7. Silver Spring International Middle School | 20. |
| 8. Woodlin Elementary School | 21. |
| 9. Northwood High School | 22. |
| 10. Spring Mill Center | 23. |
| 11. Westbrook Elementary School | 24. |
| 12. Westland Middle School | 25. |
| 13. Cloverly Elementary School | 26. |

| | Date | Initials |
|----------------------------------|----------|----------|
| Radon Test Kits Deployed | 11/27/17 | JM |
| Radon Test Kits Collected | 11/30/17 | JM |
| Radon Test Kits Shipped to Lab* | 11/30/17 | JM |
| Radon Test Kits Received by Lab* | 12/04/17 | JM |

*All samples sent to Air Check, Inc., 1936 Butler Bridge Rd, Mills River, NC 28759

Radon test result report for:**TRANSIT 1****NONE**

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|---------|------------|----------------------|----------------------|-------|------------|
| 7978062 | TRANSIT 1 | 2017-11-27 @ 4:00 pm | 2017-11-30 @ 4:00 pm | < 0.3 | 2017-12-04 |
| 7975804 | TRANSIT 10 | 2017-11-27 @ 4:00 pm | 2017-11-30 @ 4:00 pm | < 0.3 | 2017-12-04 |
| 7977990 | TRANSIT 11 | 2017-11-27 @ 4:00 pm | 2017-11-30 @ 4:00 pm | < 0.3 | 2017-12-04 |
| 7978201 | TRANSIT 12 | 2017-11-27 @ 4:00 pm | 2017-11-30 @ 4:00 pm | < 0.3 | 2017-12-04 |
| 7978203 | TRANSIT 13 | 2017-11-27 @ 4:00 pm | 2017-11-30 @ 4:00 pm | < 0.3 | 2017-12-04 |
| 7978206 | TRANSIT 14 | 2017-11-27 @ 4:00 pm | 2017-11-30 @ 4:00 pm | < 0.3 | 2017-12-05 |
| 7978246 | TRANSIT 15 | 2017-11-27 @ 4:00 pm | 2017-11-30 @ 4:00 pm | < 0.3 | 2017-12-05 |
| 7978239 | TRANSIT 16 | 2017-11-27 @ 4:00 pm | 2017-11-30 @ 4:00 pm | < 0.3 | 2017-12-05 |
| 7978226 | TRANSIT 17 | 2017-11-27 @ 4:00 pm | 2017-11-30 @ 4:00 pm | < 0.3 | 2017-12-05 |
| 7975078 | TRANSIT 18 | 2017-11-27 @ 4:00 pm | 2017-11-30 @ 4:00 pm | < 0.3 | 2017-12-05 |
| 7975077 | TRANSIT 19 | 2017-11-27 @ 4:00 pm | 2017-11-30 @ 4:00 pm | < 0.3 | 2017-12-05 |
| 7978074 | TRANSIT 2 | 2017-11-27 @ 4:00 pm | 2017-11-30 @ 4:00 pm | < 0.3 | 2017-12-04 |
| 7975076 | TRANSIT 20 | 2017-11-27 @ 4:00 pm | 2017-11-30 @ 4:00 pm | < 0.3 | 2017-12-04 |
| 7975684 | TRANSIT 21 | 2017-11-27 @ 4:00 pm | 2017-11-30 @ 4:00 pm | < 0.3 | 2017-12-04 |
| 7975683 | TRANSIT 22 | 2017-11-27 @ 4:00 pm | 2017-11-30 @ 4:00 pm | < 0.3 | 2017-12-04 |
| 7975601 | TRANSIT 23 | 2017-11-27 @ 4:00 pm | 2017-11-30 @ 4:00 pm | < 0.3 | 2017-12-04 |
| 7978011 | TRANSIT 24 | 2017-11-27 @ 4:00 pm | 2017-11-30 @ 4:00 pm | < 0.3 | 2017-12-04 |
| 7978012 | TRANSIT 25 | 2017-11-27 @ 4:00 pm | 2017-11-30 @ 4:00 pm | < 0.3 | 2017-12-04 |
| 7978094 | TRANSIT 26 | 2017-11-27 @ 4:00 pm | 2017-11-30 @ 4:00 pm | < 0.3 | 2017-12-05 |
| 7975624 | TRANSIT 27 | 2017-11-27 @ 4:00 pm | 2017-11-30 @ 4:00 pm | < 0.3 | 2017-12-05 |
| 7834562 | TRANSIT 28 | 2017-11-27 @ 4:00 pm | 2017-11-30 @ 4:00 pm | < 0.3 | 2017-12-05 |
| 7977995 | TRANSIT 29 | 2017-11-27 @ 4:00 pm | 2017-11-30 @ 4:00 pm | < 0.3 | 2017-12-05 |
| 7978098 | TRANSIT 3 | 2017-11-27 @ 4:00 pm | 2017-11-30 @ 4:00 pm | < 0.3 | 2017-12-04 |
| 7977992 | TRANSIT 30 | 2017-11-27 @ 4:00 pm | 2017-11-30 @ 4:00 pm | < 0.3 | 2017-12-04 |
| 7978719 | TRANSIT 4 | 2017-11-27 @ 4:00 pm | 2017-11-30 @ 4:00 pm | < 0.3 | 2017-12-05 |
| 7978732 | TRANSIT 5 | 2017-11-27 @ 4:00 pm | 2017-11-30 @ 4:00 pm | < 0.3 | 2017-12-04 |
| 7978731 | TRANSIT 6 | 2017-11-27 @ 4:00 pm | 2017-11-30 @ 4:00 pm | < 0.3 | 2017-12-04 |
| 7975806 | TRANSIT 7 | 2017-11-27 @ 4:00 pm | 2017-11-30 @ 4:00 pm | < 0.3 | 2017-12-04 |
| 7975815 | TRANSIT 8 | 2017-11-27 @ 4:00 pm | 2017-11-30 @ 4:00 pm | < 0.3 | 2017-12-04 |
| 7975805 | TRANSIT 9 | 2017-11-27 @ 4:00 pm | 2017-11-30 @ 4:00 pm | < 0.3 | 2017-12-04 |

December 19, 2017

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

MCPS - Spike Sample Laboratory Results. Measured values are satisfactory, i.e. within $\pm 25\%$ of the chamber's reference value (27.7 pCi/L).

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|----------------|-----------------------|-----------------------|----------------|-----------------|
| 7975075 | S1 | 2017-12-01 @ 11:00 am | 2017-12-04 @ 11:00 am | 25.6 \pm 0.7 | 2017-12-07 |
| 7975064 | S2 | 2017-12-01 @ 11:00 am | 2017-12-04 @ 11:00 am | 27.4 \pm 0.8 | 2017-12-07 |
| 7975063 | S3 | 2017-12-01 @ 11:00 am | 2017-12-04 @ 11:00 am | 26.3 \pm 0.7 | 2017-12-07 |
| 7975065 | S4 | 2017-12-01 @ 11:00 am | 2017-12-04 @ 11:00 am | 23.0 \pm 0.7 | 2017-12-07 |
| 7975069 | S5 | 2017-12-01 @ 11:00 am | 2017-12-04 @ 11:00 am | 25.6 \pm 0.7 | 2017-12-07 |
| 7975070 | S6 | 2017-12-01 @ 11:00 am | 2017-12-04 @ 11:00 am | 23.0 \pm 0.7 | 2017-12-07 |

Air Chek, Inc. 1936 Butler Bridge Rd, Mills River, NC 28759-3892 Phone: (828) 684-0893 Fax: (828) 684-8498

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies Inc. Job Number 182393

NOMINAL Conditions: Radon Conc 27.7 pCi/L Rel. Hum 49.1 % Temp. 70.1 F

Date Start: 12/1/17 Date Stop: 12/4/17 Date Start: _____ Date Stop: _____

Time Start: 1049 Time Stop: 1049 Time Start: _____ Time Stop: _____

Device No.'s: (6) Char. Bags. Device No.'s: _____

7975075, 7975064, 7975063, _____

7975065, 7975069, 7975070 _____

F4 Right

Date Start: _____ Date Stop: _____ Date Start: _____ Date Stop: _____

Time Start: _____ Time Stop: _____ Time Start: _____ Time Stop: _____

Device No.'s: _____ Device No.'s: _____

Date Start: _____ Date Stop: _____ Date Start: _____ Date Stop: _____

Time Start: _____ Time Stop: _____ Time Start: _____ Time Stop: _____

Device No.'s: _____ Device No.'s: _____

Note: All times are in 24-hour (military) notation, Eastern Standard Time (EST)
Background = 7 μ R/h Elevation = 820 ft



MCPS RADON TESTING

Executive Summary: Westland Middle School

| | |
|---------------------------|--|
| Date of Test Report: | 5/12/2016 |
| Round of Testing: | Initial Follow-up Post Remediation |
| # Rooms Tested: | 69 |
| # Rooms \geq 4.0 pCi/L: | 0 |
| Low Value: | < 0.3 |
| High Value: | 1.9 |

Project Status:

Post remediation testing completed; no further action at this time



May 12, 2016

Mr. Richard Cox
Indoor Air Quality Team Leader
Montgomery County Public Schools
850 Hungerford Drive
Rockville, MD 20850

Re: **Radon Testing Services**
KCI Job # 12146341.36

Location: Westland Middle School
5511 Massachusetts Avenue
Bethesda, MD 20816

Dear Mr. Cox:

KCI Technologies, Inc. (KCI) is pleased to submit the following report to the Montgomery County Public Schools (MCPS) pursuant to completing a “short-term” 3 day radon test for the Westland Middle School, located at 5511 Massachusetts Avenue in Bethesda, Maryland 20816 (subject site).

Scope of Services:

KCI conducted radon testing at the subject site to evaluate indoor radon levels relative to the USEPA's recommended action level of 4.0 picocuries per Liter (pCi/L) - the level at which EPA recommends that schools take action to reduce the level. KCI conducted the radon testing in accordance with American Association of Radon Scientists and Technologists (AARST) *Protocol for Conducting Measurements of Radon and Radon Decay Products in Schools and Large Buildings*. A National Radon Safety Board (NRSB) Radon Measurement Specialist (certification #14SS056) supervised the testing. Additional information on radon management and the health effects of radon exposure is available from www.montgomerycountymd.gov/dep/air/radon or www.epa.gov/radon.

KCI visited the site on April 11, 2016 and deployed eighty-three (83) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. A floor plan map of the building with the test locations is included as Attachment A of this report.

As a quality control measure, KCI included duplicate samples, field blanks, lab transit blanks, and office blanks in accordance with AARST recommendations. In addition, KCI submitted six (6) test kits to Bowser-Morner, Inc. as spike samples. The spiked tests were exposed to a known radon concentration by Bowser-Morner prior to being returned to the laboratory for analysis.

KCI returned to the site on April 14, 2016 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Airchek, Inc. for analysis by gamma-ray spectroscopy. Airchek, Inc. is a NRSB certified analytical laboratory for radon analysis (certification # ARL1402) located at 1936 Butler

Bridge Road, Mills River, North Carolina.

Evaluation of Testing Conditions:

The operating condition that represents the greatest amount of significantly occupied time for this building is; heating active, with outdoor temperature averages $\leq 65^{\circ}$ F.

KCI concludes that the test period reasonably represents normal conditions when the building is significantly occupied. Clear characterization of the radon hazard is most likely to be observed under this normal operating condition. Based on the evaluation of test conditions, this test should reasonably characterize radon hazards.

KCI also conducted observations of field conditions which could affect the results of the test and compiled weather data for the testing period. KCI recorded observations of the following conditions in each room at the time of deployment and collection of the radon test kits:

- Indoor temperature,
- HVAC Operation,
- Dehumidifier operation,
- Humidifier operation,
- Ceiling fan operation, and
- Open windows or doors.

School personnel informed KCI during the sample collection that numerous windows were opened for extended periods during the testing due to a problem with the facility's HVAC system.

Results:

The results of the radon test analysis indicated the following:

| Radon Concentration | Room | Result |
|----------------------------|------------------|---------------|
| ≥ 4.0 pCi/L | none | n/a |
| < 4.0 pCi/L | See Attachment B | |

Notes:

D- Duplicate sample

The field blanks, office blank, and lab transit blank had test results of less than the laboratory detection limit of 0.3 pCi/L. Review of the duplicate sample analysis indicates that adequate laboratory measurement precision was achieved. The Spike sample analysis results indicate the laboratory is operating within statistical control limits.

The sampling locations, field observations, and analytical results are listed on Table 1 (Attachment B). The laboratory analytical results are also attached (Attachment C). Laboratory results and exposure data for the spike samples are also included in Attachment C.

Our professional services have been performed in accordance with customary principles and practices in the field of industrial hygiene and engineering. If you have any questions or comments regarding this report, please feel free to contact me at (410) 316-7800.

Sincerely,



James M. Mouldale
Radon Measurement Specialist
KCI Technologies, Inc.

Attachments: A- Floor Plan with Test Locations
 B- Table 1-Radon Test Summary Spreadsheet
 C- Laboratory Analytical Results

ATTACHMENT A

Floor Plan With Test Locations

ATTACHMENT B

Radon Test Summary Spreadsheet

Table Notes:

AC- Activated Charcoal

ACI- Air Chek, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank*

PM- Project Manager

QC- Quality Control

*Office blanks were submitted at a rate of 1% for all samples deployed in Phase 14 testing. Office blanks were not submitted under each school individually.

| Radon Testing Results | | |
|---------------------------------------|--------------------|---------------|
| Westland Middle School | | |
| Test Period: 04/11/16-04/14/16 | | |
| Kit Number | Room / Area | Result |
| 7752122 | 100G | < 0.3 |
| 7752149 | 100H | < 0.3 |
| 7752155 | 102 | < 0.3 |
| 7747578 | 105 | < 0.3 |
| 7747590 | 106 | < 0.3 |
| 7747577 | 107 | 0.6 |
| 7747585 | 109 | 0.6 |
| 7747537 | 110 | < 0.3 |
| 7747599 | 111 | < 0.3 |
| 7747600 | 112 | < 0.3 |
| 7747598 | 113 | 0.5 |
| 7747593 | 114 | 0.6 |
| 7747594 | 115 | < 0.3 |
| 7747595 | 116 | < 0.3 |
| 7747586 | 117 | < 0.3 |
| 7747592 | 118 | < 0.3 |
| 7747575 | 121 | < 0.3 |
| 7747538 | 122 | < 0.3 |
| 7752102 | 124 | 0.9 |
| 7752114 | 125 | 1.1 |
| 7752108 | 126 | 1.8 |
| 7752137 | 128 | < 0.3 |
| 7747591 | 129 | 0.8 |
| 7747596 | 130 | 0.6 |
| 7752101 | 131 | < 0.3 |
| 7752106 | 132 | < 0.3 |
| 7752103 | 133 | < 0.3 |
| 7752127 | 134 | 0.6 |
| 7752139 | 135 | 0.5 |
| 7752148 | 136 | 0.7 |
| 7752112 | 137 | 0.8 |
| 7752132 | 139 | 0.9 |
| 7752146 | 136A | < 0.3 |
| 7752109 | 143 | 1.1 |
| 7752104 | 143 | 1.0 |
| 7752126 | 143 | 0.7 |
| 7752118 | 143 | 0.5 |
| 7752123 | 145 | 0.7 |
| 7747576 | 150 | 1.0 |
| 7747581 | 151 | 0.9 |
| 7747587 | 152 | 1.6 |
| 7752158 | 200 | < 0.3 |
| 7752156 | 203 | < 0.3 |
| 7752159 | 204 | < 0.3 |
| 7752136 | 209 | < 0.3 |
| 7752154 | 210 | 0.5 |

Table Note:

* Missing or Compromised Sample

| Radon Testing Results | | |
|---------------------------------------|--------------------|---------------|
| Westland Middle School | | |
| Test Period: 04/11/16-04/14/16 | | |
| Kit Number | Room / Area | Result |
| 7752152 | 229 | 0.7 |
| 7752113 | 125A | 0.9 |
| 7752107 | 125B | 0.9 |
| 7747580 | 125C | 0.7 |
| 7752117 | 126A | 1.8 |
| 7752111 | 126B | 1.3 |
| 7752116 | 126C | 1.7 |
| 7747589 | 127A | < 0.3 |
| 7752119 | 127B | < 0.3 |
| 7752128 | 127C | 0.8 |
| 7752105 | 131B | < 0.3 |
| 7752145 | 100F | < 0.3 |
| 7752144 | 100B | < 0.3 |
| 7752147 | 100A | < 0.3 |
| 7752134 | 100E | < 0.3 |
| 7752160 | CAFETERIA | < 0.3 |
| 7752142 | CONFERENCE RM | < 0.3 |
| 7752143 | 136F | 0.5 |
| 7752120 | 136E | 0.5 |
| 7752131 | 136D | 0.5 |
| 7752135 | 136C | 0.8 |
| 7752130 | 136B | < 0.3 |
| 7752138 | 136G | 0.7 |
| 7752150 | 100C | 0.5 |
| 7752124 | NURSE OFF | < 0.3 |
| 7752151 | 100D | 0.7 |

Table Note:

* Missing or Compromised Sample

| Radon Testing Results | | |
|---------------------------------------|----------------|---------------|
| Westland Middle School | | |
| Test Period: 04/11/16-04/14/16 | | |
| Kit Number | QC Type | Result |
| 7752141 | D (100G) | < 0.3 |
| 7747597 | D (114) | < 0.3 |
| 7752140 | D (126A) | 1.5 |
| 7752110 | D (139) | 0.7 |
| 7747588 | D (152) | 1.9 |
| 7752133 | D (100A) | < 0.3 |
| 7752153 | D (CAFETERIA) | < 0.3 |
| 7752125 | D (NURSE OFF) | 0.6 |
| 7752115 | FB (125) | < 0.3 |
| 7752129 | FB (145) | < 0.3 |
| 7752121 | FB (100F) | < 0.3 |

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

May 10, 2016 ** LABORATORY ANALYSIS REPORT **

Radon test result report for:
**WESTLAND MIDDLE SCHOOL
MAIN**

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|---------|---------|-----------------------|----------------------|-----------|------------|
| 7752122 | 100G | 2016-04-11 @ 11:00 am | 2016-04-14 @ 7:00 am | < 0.3 | 2016-04-18 |
| 7752141 | 100G | 2016-04-11 @ 11:00 am | 2016-04-14 @ 7:00 am | < 0.3 | 2016-04-18 |
| 7752149 | 100H | 2016-04-11 @ 11:00 am | 2016-04-14 @ 7:00 am | < 0.3 | 2016-04-18 |
| 7752155 | 102 | 2016-04-11 @ 3:00 pm | 2016-04-14 @ 8:00 am | < 0.3 | 2016-04-18 |
| 7747578 | 105 | 2016-04-11 @ 3:00 pm | 2016-04-14 @ 8:00 am | < 0.3 | 2016-04-18 |
| 7747590 | 106 | 2016-04-11 @ 3:00 pm | 2016-04-14 @ 8:00 am | < 0.3 | 2016-04-18 |
| 7747577 | 107 | 2016-04-11 @ 2:00 pm | 2016-04-14 @ 8:00 am | 0.6 ± 0.3 | 2016-04-18 |
| 7747585 | 109 | 2016-04-11 @ 2:00 pm | 2016-04-14 @ 8:00 am | 0.6 ± 0.3 | 2016-04-18 |
| 7747537 | 110 | 2016-04-11 @ 2:00 pm | 2016-04-14 @ 8:00 am | < 0.3 | 2016-04-18 |
| 7747599 | 111 | 2016-04-11 @ 2:00 pm | 2016-04-14 @ 8:00 am | < 0.3 | 2016-04-18 |
| 7747600 | 112 | 2016-04-11 @ 2:00 pm | 2016-04-14 @ 8:00 am | < 0.3 | 2016-04-18 |
| 7747598 | 113 | 2016-04-11 @ 2:00 pm | 2016-04-14 @ 8:00 am | 0.5 ± 0.3 | 2016-04-18 |
| 7747593 | 114 | 2016-04-11 @ 2:00 pm | 2016-04-14 @ 8:00 am | 0.6 ± 0.3 | 2016-04-18 |
| 7747597 | 114 | 2016-04-11 @ 2:00 pm | 2016-04-14 @ 8:00 am | < 0.3 | 2016-04-18 |
| 7747594 | 115 | 2016-04-11 @ 2:00 pm | 2016-04-14 @ 8:00 am | < 0.3 | 2016-04-18 |
| 7747595 | 116 | 2016-04-11 @ 2:00 pm | 2016-04-14 @ 8:00 am | < 0.3 | 2016-04-18 |
| 7747586 | 117 | 2016-04-11 @ 2:00 pm | 2016-04-14 @ 8:00 am | < 0.3 | 2016-04-18 |
| 7747592 | 118 | 2016-04-11 @ 2:00 pm | 2016-04-14 @ 8:00 am | < 0.3 | 2016-04-18 |
| 7747575 | 121 | 2016-04-11 @ 2:00 pm | 2016-04-14 @ 8:00 am | < 0.3 | 2016-04-18 |
| 7747538 | 122 | 2016-04-11 @ 2:00 pm | 2016-04-14 @ 8:00 am | < 0.3 | 2016-04-18 |
| 7752102 | 124 | 2016-04-11 @ 1:00 pm | 2016-04-14 @ 8:00 am | 0.9 ± 0.3 | 2016-04-18 |
| 7752114 | 125 | 2016-04-11 @ 1:00 pm | 2016-04-14 @ 8:00 am | 1.1 ± 0.3 | 2016-04-18 |
| 7752115 | 125 | 2016-04-11 @ 1:00 pm | 2016-04-14 @ 8:00 am | < 0.3 | 2016-04-18 |
| 7752113 | 125A | 2016-04-11 @ 1:00 pm | 2016-04-14 @ 8:00 am | 0.9 ± 0.3 | 2016-04-18 |
| 7752107 | 125B | 2016-04-11 @ 1:00 pm | 2016-04-14 @ 8:00 am | 0.9 ± 0.3 | 2016-04-18 |
| 7747580 | 125C | 2016-04-11 @ 1:00 pm | 2016-04-14 @ 8:00 am | 0.7 ± 0.3 | 2016-04-18 |
| 7752108 | 126 | 2016-04-11 @ 1:00 pm | 2016-04-14 @ 8:00 am | 1.8 ± 0.3 | 2016-04-18 |
| 7752117 | 126A | 2016-04-11 @ 1:00 pm | 2016-04-14 @ 8:00 am | 1.8 ± 0.3 | 2016-04-18 |
| 7752140 | 126A | 2016-04-11 @ 1:00 pm | 2016-04-14 @ 8:00 am | 1.5 ± 0.3 | 2016-04-18 |
| 7752111 | 126B | 2016-04-11 @ 1:00 pm | 2016-04-14 @ 8:00 am | 1.3 ± 0.3 | 2016-04-18 |
| 7752116 | 126C | 2016-04-11 @ 1:00 pm | 2016-04-14 @ 8:00 am | 1.7 ± 0.3 | 2016-04-18 |
| 7747589 | 127A | 2016-04-11 @ 1:00 pm | 2016-04-14 @ 8:00 am | < 0.3 | 2016-04-18 |
| 7752119 | 127B | 2016-04-11 @ 1:00 pm | 2016-04-14 @ 8:00 am | < 0.3 | 2016-04-18 |
| 7752128 | 127C | 2016-04-11 @ 1:00 pm | 2016-04-14 @ 8:00 am | 0.8 ± 0.3 | 2016-04-18 |
| 7752137 | 128 | 2016-04-11 @ 1:00 pm | 2016-04-14 @ 8:00 am | < 0.3 | 2016-04-18 |
| 7747591 | 129 | 2016-04-11 @ 1:00 pm | 2016-04-14 @ 8:00 am | 0.8 ± 0.3 | 2016-04-18 |
| 7747596 | 130 | 2016-04-11 @ 1:00 pm | 2016-04-14 @ 8:00 am | 0.6 ± 0.3 | 2016-04-18 |

May ** LABORATORY ANALYSIS
10,
2016 REPORT **

Radon test result report for:
**WESTLAND MIDDLE SCHOOL
MAIN**

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|---------|---------------|-----------------------|----------------------|-----------|------------|
| 7752101 | 131 | 2016-04-11 @ 1:00 pm | 2016-04-14 @ 8:00 am | < 0.3 | 2016-04-18 |
| 7752105 | 131B | 2016-04-11 @ 1:00 pm | 2016-04-14 @ 8:00 am | < 0.3 | 2016-04-18 |
| 7752106 | 132 | 2016-04-11 @ 1:00 pm | 2016-04-14 @ 8:00 am | < 0.3 | 2016-04-18 |
| 7752103 | 133 | 2016-04-11 @ 1:00 pm | 2016-04-14 @ 9:00 am | < 0.3 | 2016-04-18 |
| 7752139 | 135 | 2016-04-11 @ 12:00 pm | 2016-04-14 @ 7:00 am | 0.5 ± 0.3 | 2016-04-18 |
| 7752148 | 136 | 2016-04-11 @ 11:00 am | 2016-04-14 @ 7:00 am | 0.7 ± 0.3 | 2016-04-18 |
| 7752112 | 137 | 2016-04-11 @ 12:00 pm | 2016-04-14 @ 8:00 am | 0.8 ± 0.3 | 2016-04-18 |
| 7752132 | 139 | 2016-04-11 @ 1:00 pm | 2016-04-14 @ 8:00 am | 0.9 ± 0.3 | 2016-04-18 |
| 7752110 | 139 | 2016-04-11 @ 1:00 pm | 2016-04-14 @ 8:00 am | 0.7 ± 0.3 | 2016-04-18 |
| 7752146 | 136A | 2016-04-11 @ 12:00 pm | 2016-04-14 @ 8:00 am | < 0.3 | 2016-04-18 |
| 7752118 | 143 | 2016-04-11 @ 12:00 pm | 2016-04-14 @ 8:00 am | 0.5 ± 0.3 | 2016-04-18 |
| 7752126 | 143 | 2016-04-11 @ 12:00 pm | 2016-04-14 @ 8:00 am | 0.7 ± 0.3 | 2016-04-18 |
| 7752127 | 143 | 2016-04-11 @ 12:00 pm | 2016-04-14 @ 8:00 am | 0.6 ± 0.3 | 2016-04-18 |
| 7752104 | 143 | 2016-04-11 @ 12:00 pm | 2016-04-14 @ 8:00 am | 1.0 ± 0.3 | 2016-04-18 |
| 7752109 | 143 | 2016-04-11 @ 12:00 pm | 2016-04-14 @ 8:00 am | 1.1 ± 0.3 | 2016-04-18 |
| 7752123 | 145 | 2016-04-11 @ 12:00 pm | 2016-04-14 @ 8:00 am | 0.7 ± 0.3 | 2016-04-18 |
| 7752129 | 145 | 2016-04-11 @ 12:00 pm | 2016-04-14 @ 8:00 am | < 0.3 | 2016-04-18 |
| 7747576 | 150 | 2016-04-11 @ 1:00 pm | 2016-04-14 @ 8:00 am | 1.0 ± 0.3 | 2016-04-18 |
| 7747581 | 151 | 2016-04-11 @ 1:00 pm | 2016-04-14 @ 8:00 am | 0.9 ± 0.3 | 2016-04-18 |
| 7747587 | 152 | 2016-04-11 @ 1:00 pm | 2016-04-14 @ 8:00 am | 1.6 ± 0.3 | 2016-04-18 |
| 7747588 | 152 | 2016-04-11 @ 1:00 pm | 2016-04-14 @ 8:00 am | 1.9 ± 0.4 | 2016-04-18 |
| 7752158 | 200 | 2016-04-11 @ 3:00 pm | 2016-04-14 @ 8:00 am | < 0.3 | 2016-04-18 |
| 7752156 | 203 | 2016-04-11 @ 3:00 pm | 2016-04-14 @ 8:00 am | < 0.3 | 2016-04-18 |
| 7752159 | 204 | 2016-04-11 @ 3:00 pm | 2016-04-14 @ 8:00 am | < 0.3 | 2016-04-18 |
| 7752136 | 209 | 2016-04-11 @ 3:00 pm | 2016-04-14 @ 8:00 am | < 0.3 | 2016-04-18 |
| 7752154 | 210 | 2016-04-11 @ 3:00 pm | 2016-04-14 @ 8:00 am | 0.5 ± 0.3 | 2016-04-18 |
| 7752152 | 229 | 2016-04-11 @ 3:00 pm | 2016-04-14 @ 8:00 am | 0.7 ± 0.3 | 2016-04-18 |
| 7752121 | 100F | 2016-04-11 @ 11:00 am | 2016-04-14 @ 7:00 am | < 0.3 | 2016-04-18 |
| 7752145 | 100F | 2016-04-11 @ 11:00 am | 2016-04-14 @ 7:00 am | < 0.3 | 2016-04-18 |
| 7752144 | 100B | 2016-04-11 @ 11:00 am | 2016-04-14 @ 7:00 am | < 0.3 | 2016-04-18 |
| 7752133 | 100A | 2016-04-11 @ 11:00 am | 2016-04-14 @ 7:00 am | < 0.3 | 2016-04-18 |
| 7752147 | 100A | 2016-04-11 @ 11:00 am | 2016-04-14 @ 7:00 am | < 0.3 | 2016-04-18 |
| 7752134 | 100E | 2016-04-11 @ 11:00 am | 2016-04-14 @ 7:00 am | < 0.3 | 2016-04-18 |
| 7752160 | CAFETERIA | 2016-04-11 @ 3:00 pm | 2016-04-14 @ 8:00 am | < 0.3 | 2016-04-18 |
| 7752153 | CAFETERIA | 2016-04-11 @ 3:00 pm | 2016-04-14 @ 8:00 am | < 0.3 | 2016-04-18 |
| 7752142 | CONFERENCE RM | 2016-04-11 @ 11:00 am | 2016-04-14 @ 7:00 am | < 0.3 | 2016-04-18 |
| 7752143 | 136F | 2016-04-11 @ 11:00 am | 2016-04-14 @ 7:00 am | 0.5 ± 0.3 | 2016-04-18 |

May** **LABORATORY ANALYSIS**
10,
2016 **REPORT ****

Radon test result report for:
WESTLAND MIDDLE SCHOOL
MAIN

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|----------------|-----------------------|----------------------|--------------|-----------------|
| 7752120 | 136E | 2016-04-11 @ 11:00 am | 2016-04-14 @ 7:00 am | 0.5 ± 0.3 | 2016-04-18 |
| 7752131 | 136D | 2016-04-11 @ 11:00 am | 2016-04-14 @ 9:00 am | 0.5 ± 0.3 | 2016-04-18 |
| 7752135 | 136C | 2016-04-11 @ 11:00 am | 2016-04-14 @ 7:00 am | 0.8 ± 0.3 | 2016-04-18 |
| 7752130 | 136B | 2016-04-11 @ 12:00 pm | 2016-04-14 @ 7:00 am | < 0.3 | 2016-04-18 |
| 7752138 | 136G | 2016-04-11 @ 12:00 pm | 2016-04-14 @ 7:00 am | 0.7 ± 0.3 | 2016-04-18 |
| 7752150 | 100C | 2016-04-11 @ 11:00 am | 2016-04-14 @ 7:00 am | 0.5 ± 0.3 | 2016-04-18 |
| 7752124 | NURSE OFF | 2016-04-11 @ 12:00 pm | 2016-04-14 @ 7:00 am | < 0.3 | 2016-04-18 |
| 7752125 | NURSE OFF | 2016-04-11 @ 12:00 pm | 2016-04-14 @ 7:00 am | 0.6 ± 0.3 | 2016-04-18 |
| 7752151 | 100D | 2016-04-11 @ 11:00 am | 2016-04-14 @ 7:00 am | 0.7 ± 0.3 | 2016-04-18 |

May 11, 2016 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
OFFICE BLANK
Phase 14

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|----------------|----------------------|----------------------|--------------|-----------------|
| 7752157 | 0 | 2016-04-11 @ 4:00 pm | 2016-04-14 @ 4:00 pm | < 0.3 | 2016-04-18 |

Air Chek, Inc. 1936 Butler Bridge Rd, Mills River, NC 28759-3892 Phone: (828) 684-0893 Fax: (828) 684-8498

May 11, 2016 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
TRANSIT BLANK
Phase 14

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|----------------|----------------------|----------------------|--------------|-----------------|
| 7752162 | 1 | 2016-04-11 @ 4:00 pm | 2016-04-14 @ 4:00 pm | < 0.3 | 2016-04-18 |

Air Chek, Inc. 1936 Butler Bridge Rd, Mills River, NC 28759-3892 Phone: (828) 684-0893 Fax: (828) 684-8498

March 24, 2016 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
MCPS
Spike Sample Results

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|---------|---------|----------------------|----------------------|------------|------------|
| 7735295 | 1 | 2016-03-18 @ 1:00 pm | 2016-03-21 @ 1:00 pm | 30.0 ± 2.0 | 2016-03-24 |
| 7735289 | 2 | 2016-03-18 @ 1:00 pm | 2016-03-21 @ 1:00 pm | 29.9 ± 2.0 | 2016-03-24 |
| 7735274 | 3 | 2016-03-18 @ 1:00 pm | 2016-03-21 @ 1:00 pm | 25.6 ± 1.7 | 2016-03-24 |
| 7735278 | 4 | 2016-03-18 @ 1:00 pm | 2016-03-21 @ 1:00 pm | 26.2 ± 1.8 | 2016-03-24 |
| 7735299 | 5 | 2016-03-18 @ 1:00 pm | 2016-03-21 @ 1:00 pm | 28.3 ± 1.9 | 2016-03-24 |
| 7735293 | 6 | 2016-03-18 @ 1:00 pm | 2016-03-21 @ 1:00 pm | 31.0 ± 2.0 | 2016-03-24 |

Air Chek, Inc. 1936 Butler Bridge Rd, Mills River, NC 28759-3892 Phone: (828) 684-0893 Fax: (828) 684-8498

Note: Spike samples are test canisters that are deliberately exposed to a controlled high level of radon in a laboratory. They provide a quality control measure in the testing process and do NOT reflect radon levels in the building being tested.

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies Inc. Job Number 174430

NOMINAL Conditions: Radon Conc 26.1 pCi/L Rel. Hum 48.8 % Temp. 79.1 F

Date Start: 3/18/16 Date Stop: 3/21/16 Date Start: _____ Date Stop: _____

Time Start: 1250 Time Stop: 1250 Time Start: _____ Time Stop: _____

Device No.'s: (6) Char. Cans Device No.'s: _____

3029154 thru 3029157, _____

3029083, 3029086 _____

FS Right

Date Start: 3/18/16 Date Stop: 3/21/16 Date Start: _____ Date Stop: _____

Time Start: 1250 Time Stop: 1250 Time Start: _____ Time Stop: _____

Device No.'s: (6) Char. Bags Device No.'s: _____

7735299, 7735293, 7735295, _____

7735274, 7735278, 7735289 _____

FS Right

Date Start: _____ Date Stop: _____ Date Start: _____ Date Stop: _____

Time Start: _____ Time Stop: _____ Time Start: _____ Time Stop: _____

Device No.'s: _____ Device No.'s: _____

Note: All times are in 24-hour (military) notation, Eastern Standard Time (EST)
Background = 7 μ R/h Elevation = 820 ft



Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase 14

Name of Schools:

1. Westland MS
2. Whittier Woods Center

| | Date | Initials |
|----------------------------------|---------|----------|
| Radon Test Kits Deployed | 4/11/16 | JM |
| Radon Test Kits Collected | 4/14/16 | JM |
| Radon Test Kits Shipped to Lab* | 4/14/16 | JM |
| Radon Test Kits Received by Lab* | 4/18/16 | JM |

*All samples sent to Air Check, Inc., 1936 Butler Bridge Rd, Mills River, NC 28759

RADON SCREENING SURVEY – FOLLOW-UP WESTLAND MIDDLE SCHOOL

5511 Massachusetts Ave, Bethesda, Maryland 20816

EXECUTIVE SUMMARY

| | |
|--|--|
| Date of Test Report: | 2/22/16 |
| Round of Testing: | Initial Follow-up Post Remediation |
| # Rooms Tested | 7 |
| # Rooms \geq 4.0 pCi/L: | 1 |
| Low Value: | <0.3 |
| High Value: | 4.9 |
| Confirmed Rooms \geq 4.0 pCi/L US EPA Action Level | 2 |

Summary of Sampling Events \geq 4.0 pCi/L

| Room | Result (pCi/L) 1/6/16 | Result (pCi/L) 2/22/16 | Average Result (pCi/L) |
|------|--------------------------|---------------------------|---------------------------|
| 137 | 6.2 | 1.3 | 3.8 |
| 229 | 1.3 | 1.3 | 1.3 |
| 100D | 4.4 | 1.6 | 3.0 |
| 100E | 2.9 | 1.3 | 2.1 |
| 136A | 0.6 | 1.0 | 0.8 |
| 136B | 3.9 | 4.9 | 4.4 |
| 136C | 5.0 | 3.2 | 4.1 |
| | | | |



ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS

936 RIDGEBROOK ROAD • SPARKS, MD 21152 • 410-316-7800 • (FAX) 410-316-7935

MCPS RADON TESTING

Executive Summary: Westland Middle School

| | |
|---------------------------|--|
| Date of Test Report: | 2/22/2016 |
| Round of Testing: | Initial Follow-up Post Remediation |
| # Rooms Tested: | 7 |
| # Rooms \geq 4.0 pCi/L: | 1 |
| Low Value: | < 0.3 |
| High Value: | 4.9 |

Rooms with results \geq 4.0 pCi/L:
Room 136B (4.9 pCi/L),

Project Status:

Retesting completed; use the average of the initial and re-test results in a room to determine if remediation is necessary.



ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS

936 RIDGEBROOK ROAD • SPARKS, MD 21152 • 410-316-7800 • (FAX) 410-316-7935

February 22, 2016

Mr. Richard Cox
Indoor Air Quality Team Leader
Montgomery County Public Schools
850 Hungerford Drive
Rockville, MD 20850

Re: Radon Testing Services
KCI Job # 12146341.25

Location: Westland Middle School
5511 Massachusetts Avenue
Bethesda, MD 20816

Dear Mr. Cox:

KCI Technologies, Inc. (KCI) is pleased to submit the following report to the Montgomery County Public Schools (MCPS) pursuant to completing a "short-term" 3 day radon test for the Westland Middle School, located at 5511 Massachusetts Avenue in Bethesda, Maryland 20816 (subject site).

Scope of Services:

KCI conducted radon testing at the subject site to evaluate indoor radon levels relative to the USEPA's recommended action level of 4.0 picocuries per Liter (pCi/L) - the level at which EPA recommends that schools take action to reduce the level. KCI conducted the radon testing in accordance with American Association of Radon Scientists and Technologists (AARST) *Protocol for Conducting Measurements of Radon and Radon Decay Products in Schools and Large Buildings*. A National Radon Safety Board (NRSB) Radon Measurement Specialist (certification #14SS056) supervised the testing. Additional information on radon management and the health effects of radon exposure is available from www.montgomerycountymd.gov/dep/air/radon or www.epa.gov/radon.

KCI visited the site on January 19, 2016 and deployed eleven (11) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. A floor plan map of the building with the test locations is included as Attachment A of this report.

As a quality control measure, KCI included duplicate samples, field blanks, lab transit blanks, and office blanks in accordance with AARST recommendations. In addition, KCI submitted six (6) test kits to Bowser-Morner, Inc. as spike samples. The spiked tests were exposed to a known radon concentration by Bowser-Morner prior to being returned to the laboratory for analysis.

KCI returned to the site on January 22, 2016 to retrieve the radon sampling test kits. KCI shipped all radon tests to Accustar Labs for analysis by gamma-ray spectroscopy. Accustar Labs is a NRSB certified analytical laboratory for radon analysis (certification # ARL0007) located at 929 Mount Zion Road,

Lebanon, Pennsylvania.

Evaluation of Testing Conditions:

The operating condition that represents the greatest amount of significantly occupied time for this building is; heating active, with outdoor temperature averages $\leq 65^{\circ}$ F.

KCI concludes that the test period reasonably represents normal conditions when the building is significantly occupied. Clear characterization of the radon hazard is most likely to be observed under this normal operating condition. Based on the evaluation of test conditions, this test should reasonably characterize radon hazards.

KCI also conducted observations of field conditions which could affect the results of the test and compiled weather data for the testing period. KCI recorded observations of the following conditions in each room at the time of deployment and collection of the radon test kits:

- Indoor temperature,
- HVAC Operation,
- Dehumidifier operation,
- Humidifier operation,
- Ceiling fan operation, and
- Open windows or doors.

Results:

The results of the radon test analysis indicated the following:

| Radon Concentration | Room | Result |
|---------------------|------------------|-------------|
| ≥ 4.0 pCi/L | 136B | 4.2, 4.9(D) |
| < 4.0 pCi/L | See Attachment B | |

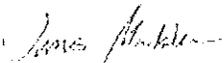
Notes:
D- Duplicate sample

The lab transit blanks had test results of less or equal to the laboratory detection limit of 0.4 pCi/L. The field blank had a low concentration of radon detected (0.6 pCi/L), which suggests the field blank may have been incompletely sealed while deployed. Review of the duplicate sample analysis indicates that adequate laboratory measurement precision was achieved. The Spike sample analysis results indicate the laboratory is operating within statistical control limits.

The sampling locations, field observations, and analytical results are listed on Table 1 (Attachment B). The laboratory analytical results are also attached (Attachment C). Laboratory results and exposure data for the spike samples are also included in Attachment C.

Our professional services have been performed in accordance with customary principles and practices in the field of industrial hygiene and engineering. If you have any questions or comments regarding this report, please feel free to contact me at (410) 316-7800.

Sincerely,



James M. Moulds
Radon Measurement Specialist
KCI Technologies, Inc.

Attachments: A- Floor Plan with Test Locations
 B- Table 1-Radon Test Summary Spreadsheet
 C- Laboratory Analytical Results

ATTACHMENT A

Floor Plan With Test Locations

ATTACHMENT B

Radon Test Summary Spreadsheet

Table Notes:

AC- Activated Charcoal

ACI- Air Chek, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank

PM- Project Manager

QC- Quality Control

| Radon Testing Results | | |
|--------------------------------|-------------|--------|
| Westland Middle School | | |
| Test Period: 01/19/16-01/22/16 | | |
| Kit Number | Room / Area | Result |
| 3028970 | 137 | 1.3 |
| 3028980 | 229 | 1.3 |
| 3028976 | 100D | 1.6 |
| 3028978 | 100E | 1.3 |
| 3028971 | 136A | 1.0 |
| 3028973 | 136B | 4.2 |
| 3028974 | 136C | 3.2 |

Table Note:

* Missing or Compromised Sample

| Radon Testing Results | | |
|--------------------------------|-----------|--------|
| Westland Middle School | | |
| Test Period: 01/19/16-01/22/16 | | |
| Kit Number | QC Type | Result |
| 3028977 | D (100D) | 1.5 |
| 3028975 | D (136B) | 4.9 |
| 3028969 | D (137) | 0.5 |
| 3028972 | FB (136C) | 0.6 |

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

NRPP 10511AL
NRSB ARL0007

EPA Method #402-R-92-004
Charcoal Canister
NRPP Device Code 6048
NRSB Device Code 10317

Laboratory Report for:

Property Tested:

KCI Technologies
936 Ridgebrook Rd
Sparks MD 21152

Westland Middle School
5511 Massachusetts Ave
Bethesda MD 20816

| Log Number | Device Number | Test Exposure Duration: | | Area Tested | Result (pCi/L) |
|------------|---------------|-------------------------|--------------------|------------------|----------------|
| 3010592 | 3028970 | 01/19/2016 1:21 pm | 01/22/2016 9:34 am | 137 First Floor | 1.3 |
| 3010593 | 3028969 | 01/19/2016 1:21 pm | 01/22/2016 9:34 am | 137 First Floor | 0.5 |
| 3010594 | 3028974 | 01/19/2016 1:38 pm | 01/22/2016 9:32 am | 136C First Floor | 3.2 |
| 3010595 | 3028972 | 01/19/2016 1:38 pm | 01/22/2016 9:32 am | 136C First Floor | 0.6 |
| 3010596 | 3028976 | 01/19/2016 1:49 pm | 01/22/2016 9:35 am | 100D First Floor | 1.6 |
| 3010597 | 3028977 | 01/19/2016 1:49 pm | 01/22/2016 9:35 am | 100D First Floor | 1.5 |
| 3010598 | 3028980 | 01/19/2016 2:01 pm | 01/22/2016 9:38 am | 229 Second Floor | 1.3 |
| 3010599 | 3028971 | 01/19/2016 1:35 pm | 01/22/2016 9:28 am | 136A First Floor | 1.0 |
| 3010600 | 3028973 | 01/19/2016 1:43 pm | 01/22/2016 9:30 am | 136B First Floor | 4.2 |
| 3010601 | 3028975 | 01/19/2016 1:43 pm | 01/22/2016 9:30 am | 136B First Floor | 4.9 |

Comment: A copy of this report was emailed to james.mouldsdale@kci.com.

Distributed by: KCI Technologies, Inc.

Date Received: 01/27/2016 Date Logged: 01/27/2016 Date Analyzed: 01/28/2016 Date Reported: 01/28/2016

Report Reviewed By: Christie Batts

Report Approved By: Carolyn D. Koke

Carolyn D. Koke, President, AccuStar Labs

Disclaimer:

The uncertainty of this radon measurement is +/- 10%. Factors contributing to uncertainty include statistical variations, daily and seasonal variations in radon concentrations, sample collection techniques and operation of the dwelling. Interference with test conditions may influence the test results.

This report may only be transferred to a third party in its entirety. Analytical results relate to the samples AS RECEIVED BY THE LABORATORY. Results shown on this report represent levels of radon gas measured between the dates shown in the room or area of the site identified above as "Property Tested". Incorrect information will affect results. The results may not be construed as either predictive or supportive of measurements conducted in any area of this structure at any other time. AccuStar Labs, its employees and agents are not responsible for the consequences of any action taken or not taken based upon the results reported or any verbal or written interpretation of the results.

NRPP 10511AL
NRSB ARL0007

EPA Method #402-R-92-004
Charcoal Canister
NRPP Device Code 6048
NRSB Device Code 10317

Laboratory Report for:

Property Tested:

KCI Technologies
936 Ridgebrook Rd
Sparks MD 21152

Westland Middle School
5511 Massachusetts Ave
Bethesda MD 20816

| Log Number | Device Number | Test Exposure Duration: | Area Tested | Result (pCi/L) |
|------------|---------------|---------------------------------------|------------------|----------------|
| 3010602 | 3028978 | 01/19/2016 1:51 pm 01/22/2016 9:36 am | 100E First Floor | 1.3 |

Comment: A copy of this report was emailed to james.mouldsdale@kci.com.

Distributed by: KCI Technologies, Inc.

Date Received: 01/27/2016 Date Logged: 01/27/2016 Date Analyzed: 01/28/2016 Date Reported: 01/28/2016

Report Reviewed By: Christie Bates

Report Approved By: Carolyn D. Koke

Carolyn D. Koke, President, AccuStar Labs

Disclaimer:

The uncertainty of this radon measurement is $\pm 10\%$. Factors contributing to uncertainty include statistical variations, daily and seasonal variations in radon concentrations, sample collection techniques and operation of the dwelling. Interference with test conditions may influence the test results.

This report may only be transferred to a third party in its entirety. Analytical results relate to the samples AS RECEIVED BY THE LABORATORY. Results shown on this report represent levels of radon gas measured between the dates shown in the room or area of the site identified above as "Property Tested". Incorrect information will affect results. The results may not be construed as either predictive or supportive of measurements conducted in any area of this structure at any other time. AccuStar Labs, its employees and agents are not responsible for the consequences of any action taken or not taken based upon the results reported or any verbal or written interpretation of the results.

Return canisters for analysis to:
 AccuStar Labs
 929 Mt. Zion Rd., Lebanon, PA 17046
 800-523-4964

RECEIVED JAN 27 2016

AccuStar Labs - Lebanon, PA
INFORMATION FORM - Large Buildings -
Projects - Apartments

Instructions on back of form
 Read instructions carefully
 Discrepancies will invalidate tests

Test Site Info

Name of Building/Project or Owner: Westland Middle School 10F2
 Site Address: 5511 Massachusetts Ave State MD Zip 20816 County Montgomery
 City: Bethesda Projects Contact Name: James Mondschock Phone: 410-599-3826 Email:

Do not use this form in
 New Jersey or Florida
 Call for correct forms.

Multi-Page Report Y-N

| Detector Serial# | ROOM NAME & NUMBER - LOCATION OF DETECTOR IN ROOM (Indicate duplicates and blanks) | Floor | Start Date | Start Time Include AM/PM | Stop Date | Stop Time Include AM/PM | LAB USE ONLY | |
|------------------|--|-------|------------|--------------------------|-----------|-------------------------|--------------|-------|
| | | | | | | | Wgt. Gain | pCi/L |
| 3028970 | 137 | 1 | 1/19/16 | 1:21 | 1/22/16 | 9:34 | | |
| 8969 | 137 | 1 | | 1:21 | | 9:34 | | 2A |
| 8974 | 136C | 1 | | 1:38 | | 9:32 | | |
| 8972 | 136C | 1 | | 1:38 | | 9:32 | | |
| 8976 | 100D | 1 | | 1:49 | | 9:35 | | |
| 8977 | 100D | 1 | | 1:49 | | 9:35 | | |
| 8980 | 229 | 2 | | 2:01 | | 9:38 | | |
| 8971 | 136A | 1 | | 1:35 | | 9:28 | | |
| 8973 | 136B | 1 | | 1:43 | | 9:30 | | |
| 8975 | 136B | 1 | | 1:43 | | 9:30 | | |

Both Placed by and Retrieved by signatures are required
 Canisters placed by: [Signature]
 Canisters retrieved by: [Signature]

Certified Testers Provide #

Were general operating conditions maintained?
 Yes - No explain if NO

Were closed building conditions maintained?
 Yes - No explain if NO

Normal Temp: Yes - No
 1/27/2016 Yes - No

Rainy Y-N

Send Results To:
 Company Name: KCI Technologies
 Address: 936 Ridgebrook Rd
 City: SPARKS State: MD Zip: 21152
 Phone: 410-599-3826
 EMAIL Results to:

Mailing: PO Box 990 Jonestown, PA 17
 Shipping: 929 Mt Zion Road, Lebanon, PA
 800-523-4964 fax 717-274-5662
 NFHA 10511AL NRSR ART 0107

KCI Technologies, Inc.
 3010592 3028970 ACP02758 EXP:12/31/2018

NRPP 10511AL
NRSB ARL0007

EPA Method #402-R-92-004
Charcoal Canister
NRPP Device Code 6048
NRSB Device Code 10317

Laboratory Report for:

Property Tested:

KCI Technologies
936 Ridgebrook Rd
Sparks MD 21152

MCPS
Transit Blanks

| Log Number | Device Number | Test Exposure Duration: | Area Tested | Result (pCi/L) |
|------------|---------------|---------------------------------------|-------------|----------------|
| 3010588 | 3028953 | 01/19/2016 1:00 pm 01/22/2016 9:30 am | 1 | < 0.4 |
| 3010589 | 3028955 | 01/19/2016 1:00 pm 01/22/2016 9:30 am | 2 | < 0.4 |
| 3010590 | 3028954 | 01/19/2016 1:00 pm 01/22/2016 9:30 am | 3 | < 0.4 |
| 3010591 | 3028997 | 01/19/2016 1:00 pm 01/22/2016 9:30 am | 4 | < 0.4 |

Comment: AMENDED REPORT for 3028953-8955, 3028997 on 2/22/16 to add all missing information from the blank datasheet. A copy of this report was emailed to james.mouldsdale@kci.com.

Distributed by: KCI Technologies, Inc.

Date Received: 01/27/2016 Date Logged: 01/27/2016 Date Analyzed: 01/28/2016 Date Reported: 01/28/2016

Report Reviewed By: Christie Bates Report Approved By: Carolyn D. Koke

Carolyn D. Koke, President, AccuStar Labs

Disclaimer:

The uncertainty of this radon measurement is +/- 10 %. Factors contributing to uncertainty include statistical variations, daily and seasonal variations in radon concentrations, sample collection techniques and operation of the dwelling. Interference with test conditions may influence the test results.

This report may only be transferred to a third party in its entirety. Analytical results relate to the samples AS RECEIVED BY THE LABORATORY. Results shown on this report represent levels of radon gas measured between the dates shown in the room or area of the site identified above as "Property Tested". Incorrect information will affect results. The results may not be construed as either predictive or supportive of measurements conducted in any area of this structure at any other time. AccuStar Labs, its employees and agents are not responsible for the consequences of any action taken or not taken based upon the results reported or any verbal or written interpretation of the results.

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCF Technologies Inc. Job Number 173618

NOMINAL Conditions: Radon Conc 25.2 pCi/L Rel. Hum 49.1 % Temp. 79.0 F

| | |
|--|------------------------------------|
| Date Start: <u>1/23/16</u> Date Stop: <u>1/25/16</u> | Date Start: _____ Date Stop: _____ |
| Time Start: <u>0821</u> Time Stop: <u>0821</u> | Time Start: _____ Time Stop: _____ |
| Device No.'s: <u>(6) Char. Cons.</u> | Device No.'s: _____ |
| <u>3028985 thru 3028990</u> | _____ |
| _____ | _____ |
| <u>E2 left</u> | _____ |
| Date Start: _____ Date Stop: _____ | Date Start: _____ Date Stop: _____ |
| Time Start: _____ Time Stop: _____ | Time Start: _____ Time Stop: _____ |
| Device No.'s: _____ | Device No.'s: _____ |
| _____ | _____ |
| _____ | _____ |
| Date Start: _____ Date Stop: _____ | Date Start: _____ Date Stop: _____ |
| Time Start: _____ Time Stop: _____ | Time Start: _____ Time Stop: _____ |
| Device No.'s: _____ | Device No.'s: _____ |
| _____ | _____ |
| _____ | _____ |

Note: All times are in 24-hour (military) notation, Eastern Standard Time (EST)
Background = 7 µR/h Elevation = 820 ft

NRPP 10511AL
NRSB ARL0007

EPA Method #402-R-92-004
Charcoal Canister
NRPP Device Code 6048
NRSB Device Code 10317

Laboratory Report for:

Property Tested:

KCI Technologies
936 Ridgebrook Rd
Sparks MD 21152

MCPS
Radon Spike Sample Laboratory Results

| Log Number | Device Number | Test Exposure Duration: | Area Tested | Result (pCi/L) |
|------------|---------------|---------------------------------------|---------------|----------------|
| 3010551 | 3028985 | 01/23/2016 8:20 am 01/25/2016 8:20 am | 1 First Floor | 24.2 |
| 3010552 | 3028986 | 01/23/2016 8:20 am 01/25/2016 8:20 am | 2 First Floor | 25.7 |
| 3010553 | 3028987 | 01/23/2016 8:20 am 01/25/2016 8:20 am | 3 First Floor | 23.8 |
| 3010554 | 3028988 | 01/23/2016 8:20 am 01/25/2016 8:20 am | 4 First Floor | 23.3 |
| 3010555 | 3028989 | 01/23/2016 8:20 am 01/25/2016 8:20 am | 5 First Floor | 24.0 |
| 3010556 | 3028990 | 01/23/2016 8:20 am 01/25/2016 8:20 am | 6 First Floor | 24.4 |

Note: Spike samples are test canisters that are deliberately exposed to a controlled high level of radon in a laboratory. They provide a quality control measure in the testing process and do NOT reflect radon levels in the building being tested.

Comment: A copy of this report was emailed to james.moulsdale@kci.com.

Distributed by: KCI Technologies, Inc.

Date Received: 01/27/2016 Date Logged: 01/27/2016 Date Analyzed: 01/28/2016 Date Reported: 01/28/2016

Report Reviewed By: Christie Bates

Report Approved By: Carolyn D. Koke

Carolyn D. Koke, President, AccuStar Labs

Disclaimer:

The uncertainty of this radon measurement is +/- 10%. Factors contributing to uncertainty include statistical variations, daily and seasonal variations in radon concentrations, sample collection techniques and operation of the dwelling. Interference with test conditions may influence the test results.

This report may only be transferred to a third party in its entirety. Analytical results relate to the samples AS RECEIVED BY THE LABORATORY. Results shown on this report represent levels of radon gas measured between the dates shown in the room or area of the site identified above as "Property Tested". Incorrect information will affect results. The results may not be construed as either predictive or supportive of measurements conducted in any area of this structure at any other time. AccuStar Labs, its employees and agents are not responsible for the consequences of any action taken or not taken based upon the results reported or any verbal or written interpretation of the results.

Return canisters for analysis to:
 AccuStar Labs
 929 Mt. Zion Rd., Lebanon, PA 17046
 800-523-4964

AccuStar Labs - Lebanon, PA
INFORMATION FORM - Large Buildings -
Projects - Apartments

Instructions on back of form
 Read instructions carefully
 Discrepancies will invalidate tests

RECEIVED JAN 27 2016

Test Site Info

Name of Building/Project or Owner: MCPS
 Site Address: 250 Hungerford Dr
 City: Rockville MD State: MD Zip: 20850 County: Montgomery
 Projects Contact Name: James Mowlsdale Phone: 410-891-1842 Email: James.Mowlsdale@kci.com

Do not use this form in
 New Jersey or Florida
 Call for correct forms.

Multi-Page Report Y-N

| Detector Serial# | ROOM NAME & NUMBER - LOCATION OF DETECTOR IN ROOM (indicate duplicates and blanks) | Floor | Start Date | Start Time Include AM/PM | Stop Date | Stop Time Include AM/PM | LAB USE ONLY | |
|------------------|--|-------|------------|--------------------------|-----------|-------------------------|--------------|-------|
| | | | | | | | Wgt. Gain | pCi/L |
| 3028925 | 1 3010551 | 1 | 1/23/16 | 02:20 | 1/25/16 | 08:20 | | 0.1A |
| 3028926 | 2 3010552 | 1 | | | | | | |
| 3028927 | 3 3010553 | 1 | | | | | | |
| 3028928 | 4 3010554 | 1 | | | | | | |
| 3028929 | 5 3010555 | 1 | | | | | | |
| 3028990 | 6 3010556 | 1 | | | | | | |

Both Placed by and Retrieved by signatures are required
 Canisters placed by: James Mowlsdale
 Canisters retrieved by: James Mowlsdale
 Owner waives confidentiality by signing here _____ Date _____
 Certified Testers Provide # _____ # _____

Were general operating conditions maintained?
 Yes No explain if NO
 Were closed building conditions maintained?
 Yes No explain if NO
 Normal Temp. Yes No
 Normal Humidity Yes No
 Windy Yes No Rainy Yes No

Send Results To:
 Company Name: KCI Technologies Inc
 Address: 936 Ringbrook Rd
 City: Sparks MD 21152 State: 7in
 Phone: 410-891-1842
 EMAIL Results to: James.Mowlsdale@kci.com
 Attention: James Mowlsdale
 Date: 1/27/2016

Mailing: PO Box 990 Jonesh
 Shipping: 929 Mt Zion Road, Lei
 800-523-4964 fax 717-2
 NEHA 10511AL NRSB ARL 0007
 KCI Technologies, Inc.
 3010551 **3028985** ACPC275B EXP12/31/2018



ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS

936 RIDGEBROOK ROAD • SPARKS, MD 21152 • 410-316-7800 • (FAX) 410-316-7935

MCPS RADON TESTING

Executive Summary: Westland Middle School

| | |
|---------------------------|--|
| Date of Test Report: | 1/6/2016 (Rev1) |
| Round of Testing: | Initial Follow-up Post Remediation |
| # Rooms Tested: | 65 |
| # Rooms \geq 4.0 pCi/L: | 3 |
| Low Value: | < 0.3 |
| High Value: | 6.2 |

Rooms with results \geq 4.0 pCi/L:

Room 137 (6.2 pCi/L), Room 136C (5.0 pCi/L), Room 100D (4.7 pCi/L)

Project Status:

Initial testing completed; re-test needed for results \geq 4.0 pCi/L.

Initial testing completed; missing or compromised samples need re-test.

is a NRSB certified analytical laboratory for radon analysis (certification # ARL1402) located at 1936 Butler Bridge Road, Mills River, North Carolina.

Evaluation of Testing Conditions:

The operating condition that represents the greatest amount of significantly occupied time for this building is; heating active, with outdoor temperature averages $\leq 65^{\circ}$ F.

KCI concludes that the test period reasonably represents normal conditions when the building is significantly occupied. Clear characterization of the radon hazard is most likely to be observed under this normal operating condition. Based on the evaluation of test conditions, this test should reasonably characterize radon hazards.

KCI also conducted observations of field conditions which could affect the results of the test and compiled weather data for the testing period. KCI recorded observations of the following conditions in each room during the deployment and collection of the radon test kits:

- Indoor temperature,
- HVAC Operation,
- Dehumidifier operation,
- Humidifier operation,
- Ceiling fan operation, and
- Open windows or doors.

Results:

The results of the radon test analysis indicated the following:

| Radon Concentration | Room | Result |
|---------------------|------------------|-------------|
| ≥ 4.0 pCi/L | 137 | 6.2 |
| | 136C | 5.0 |
| | 100D | 4.4, 4.7(D) |
| < 4.0 pCi/L | See Attachment B | |

Notes:
D- Duplicate sample

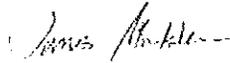
All field blanks, office blank, and lab transit blanks had test results of less than the laboratory detection limit of 0.3 pCi/L. Review of the duplicate sample analysis indicates that adequate laboratory measurement precision was achieved. The Spike sample analysis results indicate the laboratory is operating within statistical control limits.

The sampling locations, field observations, and analytical results are listed on Table 1 (Attachment B). The laboratory analytical results are also attached (Attachment C). Laboratory results and exposure data for the spike samples are also included in Attachment C.

Our professional services have been performed in accordance with customary principles and practices in the field of industrial hygiene and engineering. If you have any questions or comments regarding this report, please feel free to contact me at (410) 316-7800.

Mr. Richard Cox
January 6, 2015
Page 4

Sincerely,



James M. Mouldale
Radon Measurement Specialist
KCI Technologies, Inc.

Attachments: A- Floor Plan with Test Locations
 B- Table 1-Radon Test Summary Spreadsheet
 C- Laboratory Analytical Results

M:\2014\12146341.19\Reports\Westland MSMCPS radon letter report- Westland MS.doc

ATTACHMENT A

Floor Plan With Test Locations

ATTACHMENT B

Radon Test Summary Spreadsheet

Table Notes:

AC- Activated Charcoal

ACI- Air Chek, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank

PM- Project Manager

QC- Quality Control

| Radon Testing Results | | |
|--------------------------------|---------------------|--------|
| Westland MS | | |
| Test Period: 12/15/15-12/18/15 | | |
| Kit Number | Room/Area | Result |
| 7704047 | 102 | 0.7 |
| 7704387 | 106 | 0.8 |
| 7704378 | 107 | 1.3 |
| 7704382 | 109 | 0.6 |
| 7704392 | 110 | < 0.3 |
| 7704363 | 112 | 0.5 |
| 7704100 | 113 | < 0.3 |
| 7704372 | 114 | < 0.3 |
| 7704089 | 115 | < 0.3 |
| 7704082 | 116 | < 0.3 |
| 7704090 | 117 | 1 |
| 7704092 | 118 | < 0.3 |
| 7704096 | 121 | 0.7 |
| 7704098 | 122 | 1 |
| 7704080 | 124 | 0.9 |
| 7704060 | 125 | 1.8 |
| 7704099 | 125 | 1.9 |
| 7704086 | 126 | 2.3 |
| 7704065 | 128 | 0.8 |
| 7704052 | 129 | 0.8 |
| 7704066 | 130 | 0.7 |
| 7704072 | 131 | 0.6 |
| 7704068 | 132 | < 0.3 |
| 7704077 | 133 | 0.9 |
| 7704058 | 134 | 1.4 |
| 7704057 | 135 | 1.4 |
| 7704074 | 137 | 6.2 |
| 7704051 | 143 | 1.7 |
| 7704067 | 143 | 1.4 |
| 7704059 | 145 | 2.1 |
| 7704095 | 150 | 1.5 |
| 7704070 | 151 | 1.5 |
| 7704087 | 152 | 2.1 |
| 7704081 | 214 | 1.5 |
| 7704043 | 222 | < 0.3 |
| 7704062 | * 229 (Open Window) | 1.3 |
| 7704056 | 100A | 1.2 |
| 7704061 | 100B | 1.5 |
| 7704091 | 100C | 1.5 |
| 7704079 | 100D | 4.4 |
| 7704041 | 100E | 2.9 |
| 7704015 | 100F | 1.6 |
| 7704016 | 100G | 1.1 |
| 7704009 | 100H | 1 |

Table Notes:

* Missing or Compromised Sample

| Radon Testing Results | | |
|--------------------------------|-----------------------|--------|
| Westland MS | | |
| Test Period: 12/15/15-12/18/15 | | |
| Kit Number | Room/Area | Result |
| 7704379 | 105 OFFICE | 0.8 |
| 7704071 | 126A | 2.1 |
| 7704075 | 126B | 2.2 |
| 7704053 | 126C | 2.3 |
| 7704078 | 127A | < 0.3 |
| 7704094 | 127B | < 0.3 |
| 7704064 | 127C | < 0.3 |
| 7704093 | 127D | 0.7 |
| 7704073 | 131B | 0.9 |
| 7704055 | * 136A (Tampered) | 0.6 |
| 7704054 | 136B | 3.9 |
| 7704044 | 136C | 5 |
| 7704036 | 136D | 2.1 |
| 7704037 | 136E | 2.7 |
| 7704063 | 136F | 2.2 |
| 7704038 | 136G | 2.3 |
| 7704069 | 143B | 1 |
| 7704076 | 143B | 1.1 |
| 7704049 | CAF | < 0.3 |
| 7704050 | CAF | 0.6 |
| 7704084 | MED CENTER | 1.3 |
| | | |
| Kit Number | Room/Area | Result |
| 7704385 | D (107) | 1 |
| 7704097 | D (121) | 0.9 |
| 7704088 | D (125) | 1.6 |
| 7704085 | D (151) | 1.4 |
| 7704048 | * D (229:Open Window) | 0.9 |
| 7704013 | D (100D) | 4.7 |
| 7704017 | D (100H) | 0.8 |
| 7704377 | FB (112) | < 0.3 |
| 7704083 | FB (125) | < 0.3 |
| 7704014 | FB (100D) | < 0.3 |
| 7708206 | OB (OFFICE BLANK) | < 0.3 |

Table Notes:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

December
30,
2015

**LABORATORY ANALYSIS
REPORT ****

Radon test result report for:
**WESTLAND M.S.
MAIN**

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|---------|------------|-----------------------|-----------------------|-----------|------------|
| 7704056 | 100A | 2015-12-15 @ 12:00 pm | 2015-12-18 @ 9:00 am | 1.2 ± 0.4 | 2015-12-22 |
| 7704061 | 100B | 2015-12-15 @ 12:00 pm | 2015-12-18 @ 9:00 am | 1.5 ± 0.3 | 2015-12-22 |
| 7704091 | 100C | 2015-12-15 @ 12:00 pm | 2015-12-18 @ 9:00 am | 1.5 ± 0.4 | 2015-12-22 |
| 7704013 | 100D | 2015-12-15 @ 12:00 pm | 2015-12-18 @ 9:00 am | 4.7 ± 0.5 | 2015-12-22 |
| 7704079 | 100D | 2015-12-15 @ 12:00 pm | 2015-12-18 @ 9:00 am | 4.4 ± 0.5 | 2015-12-22 |
| 7704014 | 100D | 2015-12-15 @ 12:00 pm | 2015-12-18 @ 9:00 am | < 0.3 | 2015-12-22 |
| 7704041 | 100E | 2015-12-15 @ 12:00 pm | 2015-12-18 @ 9:00 am | 2.9 ± 0.4 | 2015-12-22 |
| 7704015 | 100F | 2015-12-15 @ 12:00 pm | 2015-12-18 @ 9:00 am | 1.6 ± 0.4 | 2015-12-22 |
| 7704016 | 100G | 2015-12-15 @ 12:00 pm | 2015-12-18 @ 9:00 am | 1.1 ± 0.4 | 2015-12-22 |
| 7704009 | 100H | 2015-12-15 @ 12:00 pm | 2015-12-18 @ 9:00 am | 1.0 ± 0.4 | 2015-12-22 |
| 7704017 | 100H | 2015-12-15 @ 1:00 pm | 2015-12-18 @ 9:00 am | 0.8 ± 0.4 | 2015-12-22 |
| 7704047 | 102 | 2015-12-15 @ 12:00 pm | 2015-12-18 @ 9:00 am | 0.7 ± 0.3 | 2015-12-22 |
| 7704379 | 105 OFFICE | 2015-12-15 @ 9:00 am | 2015-12-18 @ 8:00 am | 0.8 ± 0.3 | 2015-12-22 |
| 7704387 | 106 | 2015-12-15 @ 9:00 am | 2015-12-18 @ 8:00 am | 0.8 ± 0.3 | 2015-12-22 |
| 7704378 | 107 | 2015-12-15 @ 9:00 am | 2015-12-18 @ 8:00 am | 1.3 ± 0.4 | 2015-12-22 |
| 7704385 | 107 | 2015-12-15 @ 9:00 am | 2015-12-18 @ 8:00 am | 1.0 ± 0.3 | 2015-12-22 |
| 7704382 | 109 | 2015-12-15 @ 9:00 am | 2015-12-18 @ 8:00 am | 0.6 ± 0.3 | 2015-12-22 |
| 7704392 | 110 | 2015-12-15 @ 9:00 am | 2015-12-18 @ 8:00 am | < 0.3 | 2015-12-22 |
| 7704363 | 112 | 2015-12-15 @ 9:00 am | 2015-12-18 @ 8:00 am | 0.5 ± 0.3 | 2015-12-22 |
| 7704377 | 112 | 2015-12-15 @ 9:00 am | 2015-12-18 @ 8:00 am | < 0.3 | 2015-12-22 |
| 7704100 | 113 | 2015-12-15 @ 10:00 am | 2015-12-18 @ 8:00 am | < 0.3 | 2015-12-22 |
| 7704372 | 114 | 2015-12-15 @ 10:00 am | 2015-12-18 @ 8:00 am | < 0.3 | 2015-12-22 |
| 7704089 | 115 | 2015-12-15 @ 10:00 am | 2015-12-18 @ 8:00 am | < 0.3 | 2015-12-22 |
| 7704082 | 116 | 2015-12-15 @ 10:00 am | 2015-12-18 @ 8:00 am | < 0.3 | 2015-12-22 |
| 7704090 | 117 | 2015-12-15 @ 10:00 am | 2015-12-18 @ 8:00 am | 1.0 ± 0.3 | 2015-12-22 |
| 7704092 | 118 | 2015-12-15 @ 10:00 am | 2015-12-18 @ 8:00 am | < 0.3 | 2015-12-22 |
| 7704096 | 121 | 2015-12-15 @ 10:00 am | 2015-12-18 @ 9:00 am | 0.7 ± 0.3 | 2015-12-22 |
| 7704097 | 121 | 2015-12-15 @ 10:00 am | 2015-12-18 @ 9:00 am | 0.9 ± 0.3 | 2015-12-22 |
| 7704098 | 122 | 2015-12-15 @ 10:00 am | 2015-12-18 @ 10:00 am | 1.0 ± 0.3 | 2015-12-22 |
| 7704080 | 124 | 2015-12-15 @ 10:00 am | 2015-12-18 @ 9:00 am | 0.9 ± 0.4 | 2015-12-22 |
| 7704083 | 125 | 2015-12-15 @ 10:00 am | 2015-12-18 @ 9:00 am | < 0.3 | 2015-12-22 |
| 7704088 | 125 | 2015-12-15 @ 10:00 am | 2015-12-18 @ 9:00 am | 1.6 ± 0.4 | 2015-12-22 |
| 7704099 | 125 | 2015-12-15 @ 10:00 am | 2015-12-18 @ 9:00 am | 1.9 ± 0.4 | 2015-12-22 |
| 7704060 | 125 | 2015-12-15 @ 10:00 am | 2015-12-18 @ 9:00 am | 1.8 ± 0.4 | 2015-12-22 |
| 7704086 | 126 | 2015-12-15 @ 11:00 am | 2015-12-18 @ 9:00 am | 2.3 ± 0.4 | 2015-12-22 |
| 7704071 | 126A | 2015-12-15 @ 11:00 am | 2015-12-18 @ 9:00 am | 2.1 ± 0.4 | 2015-12-22 |
| 7704075 | 126B | 2015-12-15 @ 11:00 am | 2015-12-18 @ 9:00 am | 2.2 ± 0.4 | 2015-12-22 |

December
30,
2015

**LABORATORY ANALYSIS
REPORT ****

Radon test result report for:
**WESTLAND M.S.
MAIN**

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|---------|---------|-----------------------|-----------------------|-----------|------------|
| 7704053 | 126C | 2015-12-15 @ 11:00 am | 2015-12-18 @ 9:00 am | 2.3 ± 0.4 | 2015-12-22 |
| 7704078 | 127A | 2015-12-15 @ 11:00 am | 2015-12-18 @ 9:00 am | < 0.3 | 2015-12-22 |
| 7704094 | 127B | 2015-12-15 @ 11:00 am | 2015-12-18 @ 9:00 am | < 0.3 | 2015-12-22 |
| 7704064 | 127C | 2015-12-15 @ 11:00 am | 2015-12-18 @ 9:00 am | < 0.3 | 2015-12-22 |
| 7704093 | 127D | 2015-12-15 @ 11:00 am | 2015-12-18 @ 9:00 am | 0.7 ± 0.3 | 2015-12-22 |
| 7704065 | 128 | 2015-12-15 @ 11:00 am | 2015-12-18 @ 9:00 am | 0.8 ± 0.3 | 2015-12-22 |
| 7704052 | 129 | 2015-12-15 @ 11:00 am | 2015-12-18 @ 9:00 am | 0.8 ± 0.3 | 2015-12-22 |
| 7704066 | 130 | 2015-12-15 @ 11:00 am | 2015-12-18 @ 9:00 am | 0.7 ± 0.3 | 2015-12-22 |
| 7704072 | 131 | 2015-12-15 @ 11:00 am | 2015-12-18 @ 9:00 am | 0.6 ± 0.3 | 2015-12-22 |
| 7704073 | 131B | 2015-12-15 @ 11:00 am | 2015-12-18 @ 9:00 am | 0.9 ± 0.3 | 2015-12-22 |
| 7704068 | 132 | 2015-12-15 @ 11:00 am | 2015-12-18 @ 9:00 am | < 0.3 | 2015-12-22 |
| 7704077 | 133 | 2015-12-15 @ 11:00 am | 2015-12-18 @ 9:00 am | 0.9 ± 0.3 | 2015-12-22 |
| 7704058 | 134 | 2015-12-15 @ 12:00 pm | 2015-12-18 @ 9:00 am | 1.4 ± 0.4 | 2015-12-22 |
| 7704057 | 135 | 2015-12-15 @ 12:00 pm | 2015-12-18 @ 9:00 am | 1.4 ± 0.4 | 2015-12-22 |
| 7704055 | 136A | 2015-12-15 @ 12:00 pm | 2015-12-18 @ 9:00 am | 0.6 ± 0.3 | 2015-12-22 |
| 7704054 | 136B | 2015-12-15 @ 12:00 pm | 2015-12-18 @ 9:00 am | 3.9 ± 0.4 | 2015-12-22 |
| 7704044 | 136C | 2015-12-15 @ 12:00 pm | 2015-12-18 @ 9:00 am | 5.0 ± 0.5 | 2015-12-22 |
| 7704036 | 136D | 2015-12-15 @ 12:00 pm | 2015-12-18 @ 9:00 am | 2.1 ± 0.4 | 2015-12-22 |
| 7704037 | 136E | 2015-12-15 @ 12:00 pm | 2015-12-18 @ 9:00 am | 2.7 ± 0.4 | 2015-12-22 |
| 7704063 | 136F | 2015-12-15 @ 12:00 pm | 2015-12-18 @ 9:00 am | 2.2 ± 0.4 | 2015-12-22 |
| 7704038 | 136G | 2015-12-15 @ 12:00 pm | 2015-12-18 @ 9:00 am | 2.3 ± 0.4 | 2015-12-22 |
| 7704074 | 137 | 2015-12-15 @ 12:00 pm | 2015-12-18 @ 9:00 am | 6.2 ± 0.5 | 2015-12-22 |
| 7704067 | 143 | 2015-12-15 @ 11:00 am | 2015-12-18 @ 9:00 am | 1.4 ± 0.4 | 2015-12-22 |
| 7704051 | 143 | 2015-12-15 @ 11:00 am | 2015-12-18 @ 9:00 am | 1.7 ± 0.4 | 2015-12-22 |
| 7704069 | 143B | 2015-12-15 @ 11:00 am | 2015-12-18 @ 9:00 am | 1.0 ± 0.3 | 2015-12-22 |
| 7704076 | 143B | 2015-12-15 @ 11:00 am | 2015-12-18 @ 9:00 am | 1.1 ± 0.3 | 2015-12-22 |
| 7704059 | 145 | 2015-12-15 @ 11:00 am | 2015-12-18 @ 9:00 am | 2.1 ± 0.4 | 2015-12-22 |
| 7704095 | 150 | 2015-12-15 @ 10:00 am | 2015-12-18 @ 9:00 am | 1.5 ± 0.4 | 2015-12-22 |
| 7704070 | 151 | 2015-12-15 @ 10:00 am | 2015-12-18 @ 9:00 am | 1.5 ± 0.4 | 2015-12-22 |
| 7704085 | 151 | 2015-12-15 @ 10:00 am | 2015-12-18 @ 10:00 am | 1.4 ± 0.3 | 2015-12-22 |
| 7704087 | 152 | 2015-12-15 @ 11:00 am | 2015-12-18 @ 9:00 am | 2.1 ± 0.4 | 2015-12-22 |
| 7704081 | 214 | 2015-12-15 @ 2:00 pm | 2015-12-18 @ 10:00 am | 1.5 ± 0.4 | 2015-12-22 |
| 7704043 | 222 | 2015-12-15 @ 1:00 pm | 2015-12-18 @ 9:00 am | < 0.3 | 2015-12-22 |
| 7704048 | 229 | 2015-12-15 @ 1:00 pm | 2015-12-18 @ 9:00 am | 0.9 ± 0.3 | 2015-12-22 |
| 7704062 | 229 | 2015-12-15 @ 1:00 pm | 2015-12-18 @ 9:00 am | 1.3 ± 0.3 | 2015-12-22 |
| 7704049 | CAF | 2015-12-15 @ 1:00 pm | 2015-12-18 @ 1:00 pm | < 0.3 | 2015-12-22 |
| 7704050 | CAF | 2015-12-15 @ 1:00 pm | 2015-12-18 @ 9:00 am | 0.6 ± 0.3 | 2015-12-22 |

December
30,
2015

**LABORATORY ANALYSIS
REPORT ****

Radon test result report for:
**WESTLAND M.S.
MAIN**

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|----------------|-----------------------|----------------------|--------------|-----------------|
| 7704084 | MED CENTER | 2015-12-15 @ 10:00 am | 2015-12-18 @ 9:00 am | 1.3 ± 0.3 | 2015-12-22 |

Air Chek, Inc. 1936 Butler Bridge Rd, Mills River, NC 28759-3892 Phone: (828) 684-0893 Fax: (828) 684-8498

December
30,
2015

**LABORATORY ANALYSIS
REPORT ****

Radon test result report for:
**WESTLAND M.S.
OFFICE BLANK**

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|---------|--------------|----------------------|----------------------|-------|------------|
| 7708206 | OFFICE BLANK | 2015-12-15 @ 3:00 pm | 2015-12-18 @ 3:00 pm | < 0.3 | 2015-12-22 |

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December
29,
2015

**LABORATORY ANALYSIS
REPORT ****

Radon test result report for:
TRANSIT DEC 14 2015
NONE

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|----------------|-----------------------|-----------------------|--------------|-----------------|
| 7704395 | TRANSIT 1 | 2015-12-13 @ 10:00 am | 2015-12-15 @ 10:00 am | < 0.3 | 2015-12-16 |
| 7706508 | TRANSIT 10 | 2015-12-13 @ 10:00 am | 2015-12-15 @ 10:00 am | < 0.3 | 2015-12-16 |
| 7706510 | TRANSIT 11 | 2015-12-13 @ 10:00 am | 2015-12-15 @ 10:00 am | < 0.3 | 2015-12-16 |
| 7706511 | TRANSIT 12 | 2015-12-13 @ 10:00 am | 2015-12-15 @ 10:00 am | < 0.3 | 2015-12-16 |
| 7706505 | TRANSIT 13 | 2015-12-13 @ 10:00 am | 2015-12-15 @ 10:00 am | < 0.3 | 2015-12-16 |
| 7704371 | TRANSIT 14 | 2015-12-13 @ 10:00 am | 2015-12-15 @ 10:00 am | < 0.3 | 2015-12-16 |
| 7706506 | TRANSIT 15 | 2015-12-13 @ 10:00 am | 2015-12-15 @ 10:00 am | < 0.3 | 2015-12-16 |
| 7704381 | TRANSIT 16 | 2015-12-13 @ 10:00 am | 2015-12-15 @ 10:00 am | < 0.3 | 2015-12-16 |
| 7704399 | TRANSIT 17 | 2015-12-13 @ 10:00 am | 2015-12-15 @ 10:00 am | < 0.3 | 2015-12-16 |
| 7704390 | TRANSIT 18 | 2015-12-13 @ 10:00 am | 2015-12-15 @ 10:00 am | < 0.3 | 2015-12-16 |
| 7704396 | TRANSIT 2 | 2015-12-13 @ 10:00 am | 2015-12-15 @ 10:00 am | < 0.3 | 2015-12-16 |
| 7704364 | TRANSIT 3 | 2015-12-13 @ 10:00 am | 2015-12-15 @ 10:00 am | < 0.3 | 2015-12-16 |
| 7704370 | TRANSIT 4 | 2015-12-13 @ 10:00 am | 2015-12-15 @ 10:00 am | < 0.3 | 2015-12-16 |
| 7704368 | TRANSIT 5 | 2015-12-13 @ 10:00 am | 2015-12-15 @ 10:00 am | < 0.3 | 2015-12-16 |
| 7706524 | TRANSIT 6 | 2015-12-13 @ 10:00 am | 2015-12-15 @ 10:00 am | < 0.3 | 2015-12-16 |
| 7706526 | TRANSIT 7 | 2015-12-13 @ 10:00 am | 2015-12-15 @ 10:00 am | < 0.3 | 2015-12-16 |
| 7706518 | TRANSIT 8 | 2015-12-13 @ 10:00 am | 2015-12-15 @ 10:00 am | < 0.3 | 2015-12-16 |
| 7706516 | TRANSIT 9 | 2015-12-13 @ 10:00 am | 2015-12-15 @ 10:00 am | < 0.3 | 2015-12-16 |

December
23,
2015

**LABORATORY ANALYSIS
REPORT ****

Spike Sample Laboratory Results

Radon test result report for:

MCPS

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|----------------|----------------------|----------------------|--------------|-----------------|
| 7706380 | 101 | 2015-12-18 @ 9:00 am | 2015-12-21 @ 9:00 am | 25.2 | 2015-12-23 |
| 7706381 | 102 | 2015-12-18 @ 9:00 am | 2015-12-21 @ 9:00 am | 26.5 | 2015-12-23 |
| 7706208 | 103 | 2015-12-18 @ 9:00 am | 2015-12-21 @ 9:00 am | 27.7 | 2015-12-23 |
| 7705132 | 104 | 2015-12-18 @ 9:00 am | 2015-12-21 @ 9:00 am | 28.6 | 2015-12-23 |
| 7706366 | 105 | 2015-12-18 @ 9:00 am | 2015-12-21 @ 9:00 am | 26.5 | 2015-12-23 |
| 7706211 | 106 | 2015-12-18 @ 9:00 am | 2015-12-21 @ 9:00 am | 26.1 | 2015-12-23 |

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Note: Spike samples are test canisters that are deliberately exposed to a controlled high level of radon in a laboratory. They provide a quality control measure in the testing process and do NOT reflect radon levels in the building being tested.

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies Inc. Job Number 173224

NOMINAL Conditions: Radon Conc 26.9 pCi/L Rel. Hum 49.6 % Temp. 69.9 F

Date Start: 12/18/15 Date Stop: 12/21/15 Date Start: _____ Date Stop: _____

Time Start: 0929 Time Stop: 0929 Time Start: _____ Time Stop: _____

Device No.'s: 7705132, 7706208, Device No.'s: _____

7706211, 7706366, _____

7706380, 7706381 _____

F3 Cont

Date Start: _____ Date Stop: _____ Date Start: _____ Date Stop: _____

Time Start: _____ Time Stop: _____ Time Start: _____ Time Stop: _____

Device No.'s: _____ Device No.'s: _____

Date Start: _____ Date Stop: _____ Date Start: _____ Date Stop: _____

Time Start: _____ Time Stop: _____ Time Start: _____ Time Stop: _____

Device No.'s: _____ Device No.'s: _____

Note: All times are in 24-hour (military) notation, Eastern Standard Time (EST)
Background = 7 μ R/h Elevation = 820 ft

M. A. CECIL & ASSOCIATES, INC.
4475 Shannon Way, Port Republic, Maryland 20676 (301) 855-7710
INDUSTRIAL HYGIENE AND ENVIRONMENTAL HEALTH

MCPS RADON TESTING

Executive Summary

| | |
|---------------------------|-------------------|
| Name of Facility | Westland Middle |
| Date of Test report | December 24, 2015 |
| Round of Testing | Re-Test |
| Number of rooms tested | 2 |
| Number of room ≥ 4.0 | 0 |
| Low value | 1.1 |
| High value | 1.2 |

M. A. CECIL & ASSOCIATES, INC.

4475 Shannon Way, Port Republic, Maryland 20676 (301) 855-7710
INDUSTRIAL HYGIENE AND ENVIRONMENTAL HEALTH

December 24, 2015

Mr. Sean Yarup
Montgomery County Public Schools
16651 Crabbs Branch Way
Rockville, Maryland 20855

Re: Radon Evaluation - Westland Middle School

Dear Mr. Yarup:

Follow-up environmental radon testing has been completed at Westland Middle School.

Two charcoal canisters were placed in the Auxiliary Gym and Main Gym. The canisters were placed on December 9, 2015 and retrieved on December 11, 2015.

The detected radon concentrations were below the EPA recommended level of 4.0 pico curies per liter (pCi/l). Testing locations and results are summarized in the table below.

| Location | Detected Radon Concentration (pCi/l) |
|----------|--------------------------------------|
| Aux. Gym | 1.1 |
| Gym | 1.2 |

Should you have any questions concerning this report please do not hesitate to contact us.

Sincerely,

Michael A. Cecil
Michael A. Cecil, CIH