

RADON INVESTIGATION REPORT

**CENTRAL BOULEVARD
ELEMENTARY SCHOOL
60 CENTRAL BOULEVARD
BETHPAGE, NEW YORK 11714**

**PREPARED FOR:
BETHPAGE UNION FREE SCHOOL DISTRICT
10 CHERRY AVENUE
BETHPAGE, NEW YORK 11714**

**JCB PROJECT #: 21-48294
AUGUST 2021**

**J.C. BRODERICK & ASSOCIATES, INC.
Environmental Consulting & Testing**

**1775 Expressway Drive North
Hauppauge, New York 11788
631-584-5492 Fax: 631-584-3395**



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Section No. 1.0: Introduction

J.C. Broderick and Associates (JCB) was retained by the Bethpage Union Free School District (Bethpage) to perform an indoor air survey for radon gas as a result of identifying radium in the local groundwater by the Bethpage Water District and by JCB during the annual groundwater investigation at the Bethpage High School and Central Boulevard Elementary School.

Section No. 2.0: Site Description and Location

The Subject Site is located at 60 Central Boulevard, Bethpage, New York 11714, at the western terminus of Central Boulevard. According to the United States Geological Survey (USGS) *Amityville, New York, 2016 7.5 Minute Series Topographical Map*, the Subject Site is situated at an approximate elevation of 98 feet (ft.) above mean sea level. Groundwater is estimated at approximately 40 feet below surface grade (bsg). The location of the Subject Site is shown on the Site Location Map, Appendix-A Figure-1.

Section No. 3.0: Previous Radon Screening Sampling and Analysis

The detection of Radium 226 and 228 during annual testing of the groundwater at Bethpage High School prompted the sampling and analysis of the groundwater for Radium at the Central Boulevard Elementary School. In August 2017, JCB installed three (3) groundwater monitoring wells at the Central Boulevard Elementary School campus. During this investigation Radium was detected in the groundwater, as a result the building was tested for Radon. The laboratory analysis results from the Radon screening revealed concentrations of Radon exceeding 4.0 pCi/L; however, only in not frequently occupied rooms and spaces.

As a result of these findings in August 2017 an isolation barrier was installed over the sand floor of the crawl spaces throughout the school building. After the installation of the isolation barrier, JCB performed follow-up testing at the same sampling locations. The laboratory analysis results from the Radon in Air samples submitted indicated radon levels below 4.0 pCi/L at all sampling locations tested.

Section No. 4.0: Radon Sampling and Analysis

The United States Environmental Protection Agency (EPA) *Radon Measurement in Schools Revised Edition* (EPA 402-R-92-014) dated July 1993 guidance document recommends that a Radon assessment should be performed under closed conditions during the heating season. JCB coordinated with the school district to conduct the sampling during the spring recess.

Section No. 4.1: Initial Radon Sampling and Analysis

On March 29, 2021, JCB set up short-term Radon in Air test kits in six (6) basement storage rooms and spaces and eight (8) crawlspaces within the basement of the elementary school building that were in contact with the ground. The sampling devices were collected on April 02, 2021 after at least three days of exposure. In accordance with the EPA guidance document, in addition to the test kits, a total of three (3) duplicate (dup) samples and two (2) field blank samples were collected.

The following table summarizes the initial Radon samples submitted for laboratory analysis:

Table No. 1: Summary of Initial Radon Samples Submitted for Laboratory Analysis					
Sample Device Number	Location	Sample Start Date	Sample End Date	Description of Sample	Analysis Method
387304	Crawlspace – 0002	03/29/21	04/02/21	Crawlspace	Radon in Air
388860	Crawlspace – 0002	03/29/21	04/02/21	Crawlspace – Dup	Radon in Air
449753	Crawlspace – 0002A	03/29/21	04/02/21	Crawlspace	Radon in Air
453007	Crawlspace – 0002B	03/29/21	04/02/21	Crawlspace	Radon in Air
449834	Basement Storage Rm – 0003	03/29/21	04/02/21	Basement Storage Room	Radon in Air
453046	Basement Storage Rm - 0004	03/29/21	04/02/21	Basement Storage Room	Radon in Air
452927	Basement Storage Rm - 0005	03/29/21	04/02/21	Basement Storage Room	Radon in Air
452979	Basement Storage Rm - 0005	03/29/21	04/02/21	Basement Storage Room - Blank	Radon in Air
444002	Basement Storage Rm - 0006	03/29/21	04/02/21	Basement Storage Room	Radon in Air
452961	Basement Storage Rm - 0006	03/29/21	04/02/21	Basement Storage Room - Dup	Radon in Air
449526	Basement Storage Rm - 0007	03/29/21	04/02/21	Basement Storage Room	Radon in Air
453029	Crawlspace – 0008	03/29/21	04/02/21	Crawlspace	Radon in Air
453047	Crawlspace – 0009	03/29/21	04/02/21	Crawlspace	Radon in Air
388863	Crawlspace – 0010	03/29/21	04/02/21	Crawlspace	Radon in Air
388760	Crawlspace – 0010	03/29/21	04/02/21	Crawlspace – Dup	Radon in Air
448388	Crawlspace – 0010A	03/29/21	04/02/21	Crawlspace	Radon in Air
452972	Crawlspace – 0010A	03/29/21	04/02/21	Crawlspace – Blank	Radon in Air
449953	Basement Hallway – 0011	03/29/21	04/02/21	Basement Hallway	Radon in Air
452958	Basement Hallway – 0011A	03/29/21	04/02/21	Basement Hallway	Radon in Air
Notes: Rm = Room Dup = Duplicate Sample Blank = Field Blank					

Section No. 4.2: Initial Radon Laboratory Analytical Summary

The short-term Radon in Air sampling was performed utilizing laboratory supplied test kits, assigned individual identification numbers and were secured. Chain of Custody documents were prepared, and the samples were then delivered to an independent New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certified laboratory for analysis of Radon in Air.

EMSL Analytical Inc. (EMSL) of Cinnaminson, New Jersey provided laboratory analytical services. Copies of EMSL's NYSDOH certifications are available upon request.

The laboratory analytical results for the Radon in Air samples were reviewed and compared to the United States Environmental Protection Agency (EPA) recommended action level of 4.0 pCi/L as reported in *Radon Measurement in Schools Revised Edition* (EPA 402-R-92-014), dated July 1993.

The following table summarizes the initial Radon Analytical Results:

Table No. 2: Summary of Initial Radon Samples Analysis Results – 04-02-21		
Sample Device Number	Location	Radon Activity pCi/L
387304	Crawlspace – 0002	3.0
388860	Crawlspace – 0002 Dup	3.1
449753	Crawlspace – 0002A	5.0
453007	Crawlspace – 0002B	6.2
449834	Basement Storage Rm – 0003	5.6
453046	Basement Storage Rm - 0004	4.2
452927	Basement Storage Rm - 0005	3.6
452979	Basement Storage Rm – 0005 Blank	0.1
444002	Basement Storage Rm - 0006	2.4
452961	Basement Storage Rm – 0006 Dup	2.5
449526	Basement Storage Rm - 0007	3.9
453029	Crawlspace – 0008	3.9
453047	Crawlspace – 0009	4.4
388863	Crawlspace – 0010	3.5
388760	Crawlspace – 0010 Dup	3.6
448388	Crawlspace – 0010A	5.0
452972	Crawlspace – 0010A Blank	0.0
449953	Basement Hallway – 0011	3.8
452958	Basement Hallway – 0011A	4.8

The laboratory analysis results from the Radon in Air samples submitted did reveal elevated concentrations of Radon exceeding the guidance value established by the EPA in seven (7) basement/crawlspace locations. It should be noted these spaces are not frequently occupied rooms as defined in the EPA referenced document.

Section No. 4.3: Additional Radon Sampling and Analysis

As a result of the above referenced findings and recommendations in the EPA guidance document, JCB performed follow-up testing in the seven (7) spaces indicating Radon in air greater than 4.0 pCi/L in the initial test. In addition, a total of eight (8) samples were also collected from the first-floor rooms directly above the spaces that were re-tested.

The following table summarizes the additional Radon samples submitted for laboratory analysis:

Table No. 3: Summary of Additional Radon Samples Submitted for Laboratory Analysis					
Sample Device Number	Location	Sample Start Date	Sample End Date	Description of Sample	Analysis Method
453078	Hallway #1018	8/16/21	8/20/21	Hallway	Radon in Air
452968	Classroom #1011	8/16/21	8/20/21	Classroom	Radon in Air
452898	Classroom #1006	8/16/21	8/20/21	Classroom	Radon in Air
449781	Classroom #1006	8/16/21	8/20/21	Classroom - Dup	Radon in Air
453035	Hallway #1015	8/16/21	8/20/21	Hallway	Radon in Air
452967	Classroom #1002	8/16/21	8/20/21	Classroom	Radon in Air
452936	Lounge #1000	8/16/21	8/20/21	Faculty Lounge	Radon in Air
449783	Lounge #1000	8/16/21	8/20/21	Faculty Lounge - Blank	Radon in Air
453011	Hallway #1029	8/16/21	8/20/21	Hallway	Radon in Air
453040	Hallway #1046	8/16/21	8/20/21	Hallway	Radon in Air
453003	Hallway #1046	8/16/21	8/20/21	Hallway - Dup	Radon in Air
452971	Crawlspace – 0002A	8/16/21	8/20/21	Crawlspace	Radon in Air
449550	Crawlspace – 0002B	8/16/21	8/20/21	Crawlspace	Radon in Air
449782	Crawlspace – 0002B	8/16/21	8/20/21	Crawlspace-Dup	Radon in Air
452984	Basement Storage Rm – 0003	8/16/21	8/20/21	Basement Storage Room	Radon in Air
452951	Basement Storage Rm - 0004	8/16/21	8/20/21	Basement Storage Room	Radon in Air
449723	Basement Storage Rm - 0004	8/16/21	8/20/21	Basement Storage Room-Blank	Radon in Air
453002	Crawlspace – 0009	8/16/21	8/20/21	Crawlspace	Radon in Air
452982	Crawlspace – 0009	8/16/21	8/20/21	Crawlspace-Dup	Radon in Air
453057	Crawlspace – 0010A	8/16/21	8/20/21	Crawlspace	Radon in Air
452989	Basement Hallway – 0011A	8/16/21	8/20/21	Basement Hallway	Radon in Air
Notes: Rm = Room Dup = Duplicate Sample Blank = Field Blank					

Section No. 4.4: Additional Radon Laboratory Analytical Summary

The short-term Radon in Air sampling was performed utilizing laboratory supplied test kits, assigned individual identification numbers and were secured. Chain of Custody documents were prepared, and the samples were then delivered to an independent New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certified laboratory for analysis of Radon in Air.

EMSL Analytical Inc. (EMSL) of Cinnaminson, New Jersey provided laboratory analytical services. Copies of EMSL's NYSDOH certifications are available upon request.

The laboratory analytical results for the Radon in Air samples were reviewed and compared to the United States Environmental Protection Agency (EPA) recommended action level of 4.0 pCi/L as reported in *Radon Measurement in Schools Revised Edition* (EPA 402-R-92-014), dated July 1993.

The following table summarizes the additional Radon Analytical Results:

Table No. 4: Summary of Additional Radon Samples Analysis Results – 08-20-21		
Sample Device Number	Location	Radon Activity pCi/L
453078	Hallway #1018	0.5
452968	Classroom #1011	0.2
452898	Classroom #1006	0.4
449781	Classroom #1006	0.4
453035	Hallway #1015	0.5
452967	Classroom #1002	0.4
452936	Lounge #1000	0.3
449783	Lounge #1000	0.4
453011	Hallway #1029	0.9
453040	Hallway #1046	0.3
453003	Hallway #1046	2.7
452971	Crawlspace – 0002A	5.0
449550	Crawlspace – 0002B	4.1
449782	Crawlspace – 0002B	3.0
452984	Basement Storage Rm – 0003	2.1
452951	Basement Storage Rm - 0004	0.2
449723	Basement Storage Rm - 0004	1.3
453002	Crawlspace – 0009	1.8
452982	Crawlspace – 0009	1.0
453057	Crawlspace – 0010A	1.3
452989	Basement Hallway – 0011A	1.4
Notes: pCi/L = picocuries per liter		

The laboratory analysis results from the Radon samples submitted from the occupied spaces revealed concentrations of Radon below 4.0 pCi/L. Sample locations Crawl 0002A and Crawl 0002B (West Side of South Crawlspace) did reveal concentrations of Radon above 4.0 pCi/L, however, these spaces are not frequently occupied spaces as defined in the EPA referenced document.

Section No. 6.0: Quality Assurance and Quality Control (QA/QC) Procedures

To ensure that measurement results are reliable, JCB performed unexposed control detectors (blanks) side-by-side with the sampling device at each sampling location.

The field sampling team-maintained Radon sampling chain of custody records used to track samples from sampling point to analysis which summarized the following:

- Sample identification;
- Test Kit ID number;
- Device ID number;
- Sampling beginning date and time;
- Sampling ending date and time;
- Temperature, °F;
- Humidity, %;

Section No. 7.0: Recommendations

Based upon the sampling results reported, the USEPA decision matrix does not recommend any additional mitigation for Radon; however, due to the elevated Radon level observed within the Crawl 0002A and Crawl 0002B sample locations, the USEPA recommends that long-term samples be collected within these spaces, preferably taken over the entire nine (9) month school year.


Due to the detection of Radium 226 and 228 in the local groundwater, JCB does recommend that continued monitoring for Radon in Air within the school building be performed to confirm the effectiveness of the installed isolation barrier.

Sincerely,

J.C. Broderick & Associates, Inc.



Jeffrey V. Nannini
Environmental Scientist



Steven Muller, P.G.
Project Manager

Appendix A

Figures



J.C. BRODERICK

& Associates

Environmental Consulting and
Testing

1775 Express Drive North
Hauppauge, NY 11788

Phone: (631).584.5492

Fax: (631).584.3395

Notes:

Central Boulevard
Elementary School
60 Central Boulevard
Bethpage, NY 11714

Drawing Title

Figure No. 1

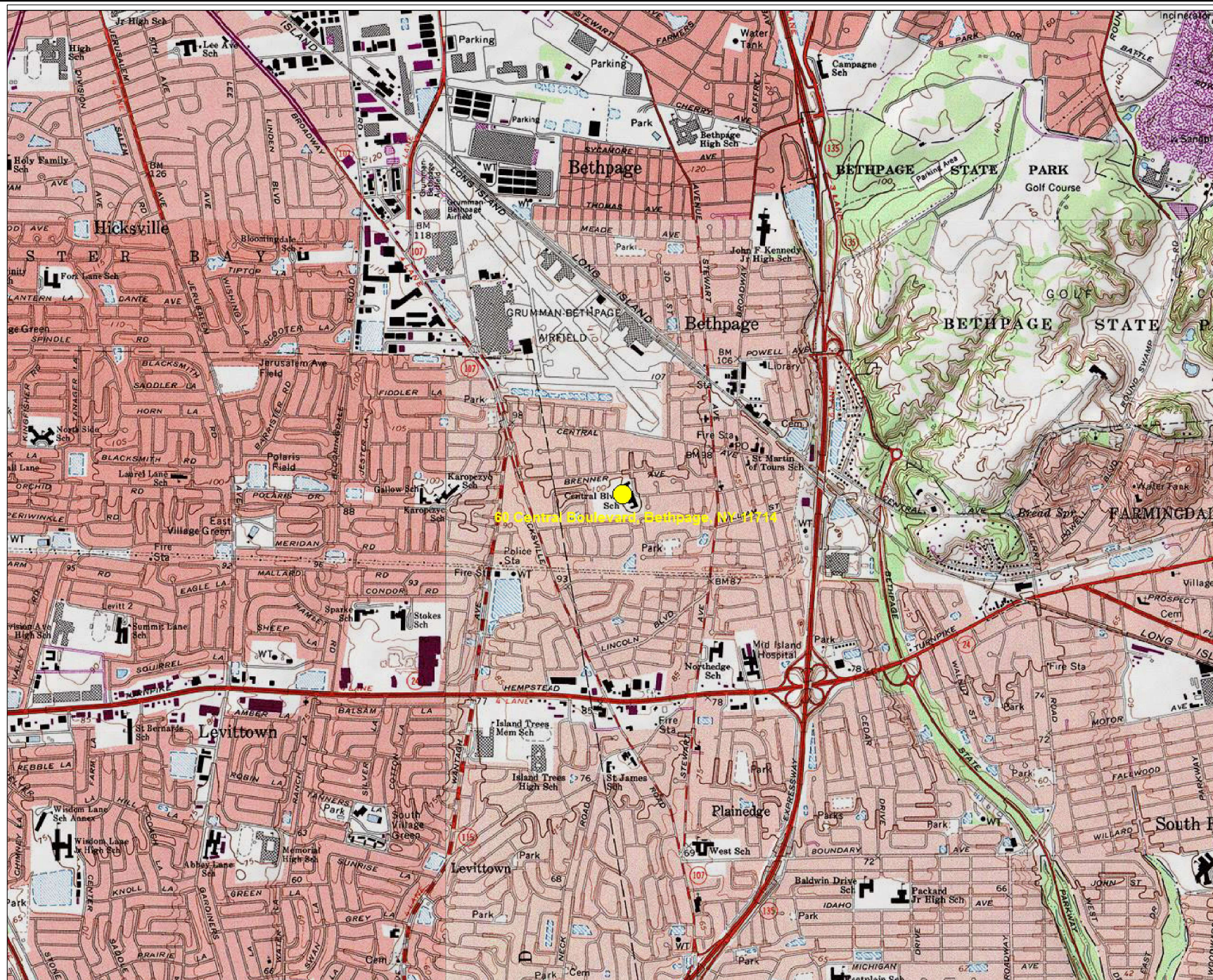
Site Location Map

Scale As Noted Project No. 21-48294 Date 04-02-21

Drawn By J.V.N. Checked By S.W.M. Page No. 1 of 2

Drawing No.

1



JCB LEGEND
● SUBJECT SITE

0 1000 FEET 0 500 1000 METERS
Map created with TOPO!® ©2002 National Geographic (www.nationalgeographic.com/topo)



J.C. BRODERICK

& Associates

Environmental Consulting and
Testing

1775 Express Drive North
Hauppauge, NY 11788

Phone: (631).584.5492

Fax: (631).584.3395

Notes:

Central Boulevard
Elementary School
60 Central Boulevard
Bethpage, NY 11714

Drawing Title

Figure No. 2

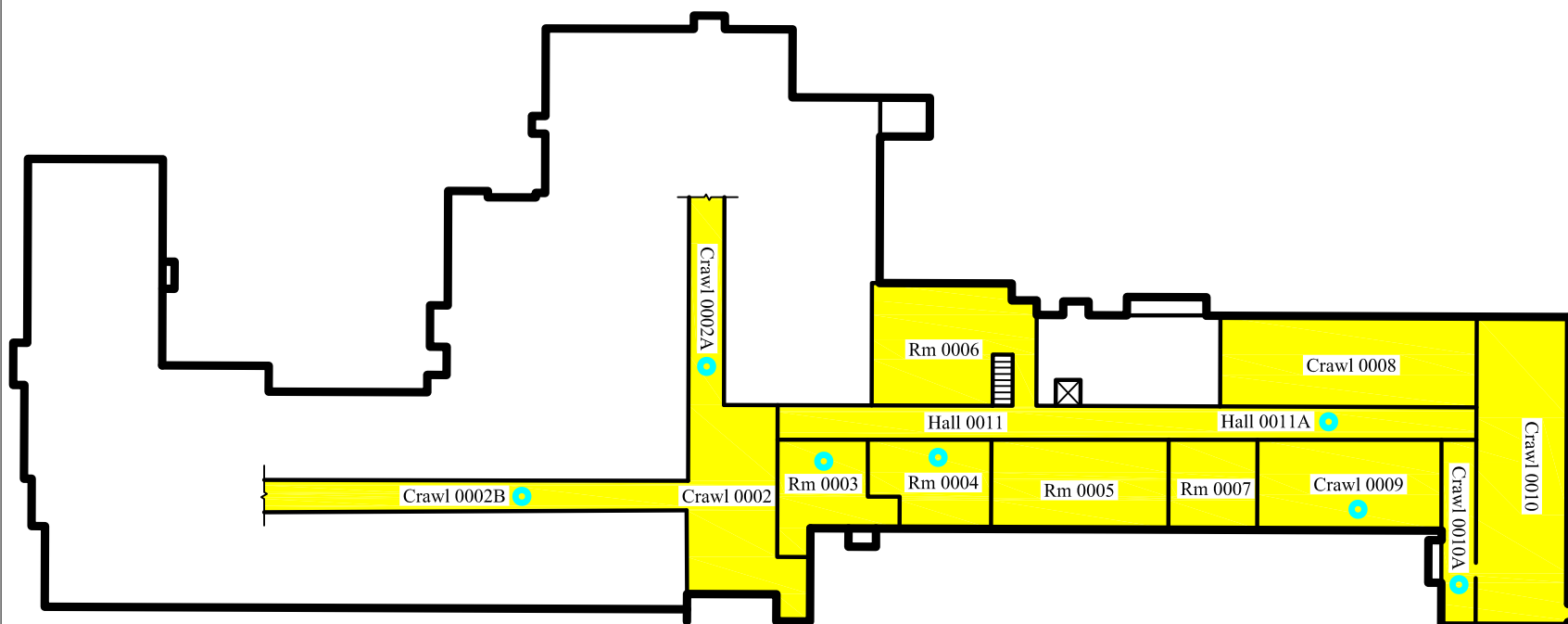
Crawlspace
and
Basement
Sampling
Locations

Scale	Project No.	Date
N.T.S.	21-48294	08-20-21

Drawn By	Checked By	Page No.
J.V.N.	S.W.M.	2 of 3

Drawing No.

2



PROJECT



NORTH

JCB LEGEND

■	APRIL 2, 2021 SAMPLE LOCATION
●	AUGUST 20, 2021 SAMPLE LOCATION



J.C. BRODERICK

& Associates

Environmental Consulting and
Testing

1775 Express Drive North
Hauppauge, NY 11788

Phone: (631).584.5492

Fax: (631).584.3395

Notes:

Central Boulevard
Elementary School
60 Central Boulevard
Bethpage, NY 11714

Drawing Title

Figure No. 3

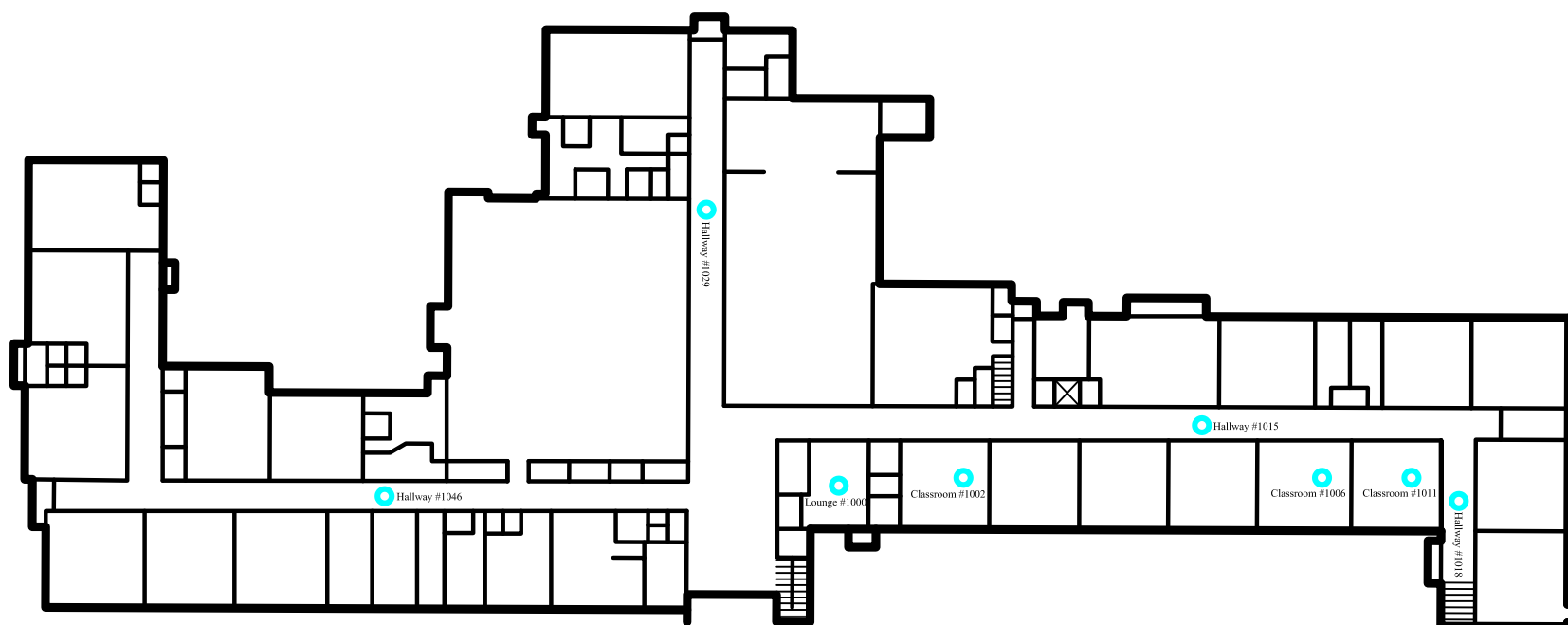
First Floor
Sampling Locations

Scale	Project No.	Date
As Noted	21-48294	08-20-21

Drawn By	Checked By	Page No.
J.V.N.	S.W.M.	3 of 3

Drawing No.

3



PROJECT



NORTH

JCB LEGEND

● AUGUST 20, 2021 SAMPLING LOCATION

Appendix B

Field Photograph Logs

Radon Sampling and Blank Location Within Faculty Lounge



Field Photograph Log

Radon Investigation Report

**Central Boulevard Elementary School
60 Central Boulevard
Bethpage, New York 11714**

Photo No. 01

JCB#: 21-48294

Radon Sampling Location Within Hallway



Field Photograph Log

Radon Investigation Report

**Central Boulevard Elementary School
60 Central Boulevard
Bethpage, New York 11714**

Photo No. 02

JCB#: 21-48294

Radon Sampling Location Within Crawlspace



Field Photograph Log

Radon Investigation Report

**Central Boulevard Elementary School
60 Central Boulevard
Bethpage, New York 11714**

Photo No. 03

JCB#: 21-48294

Radon Sampling Location Within Basement Electrical Room



Field Photograph Log

Radon Investigation Report

**Central Boulevard Elementary School
60 Central Boulevard
Bethpage, New York 11714**

Photo No. 04

JCB#: 21-48294

Radon Sampling Location Within Basement Hallway



Field Photograph Log

Radon Investigation Report

**Central Boulevard Elementary School
60 Central Boulevard
Bethpage, New York 11714**

Photo No. 05

JCB#: 21-48294

Appendix C

Laboratory Analysis Reports

**EMSL Analytical, Inc.**

200 Route 130 North, Cinnaminson, NJ 08077

Phone/Fax: (800) 220-3675 / (856) 786-0327

<http://www.EMSL.com>cinnaminsonradonlab@emsl.com

EMSL Order: 382103338

CustomerID: JCBR50

CustomerPO:

ProjectID:

Attn: **Steven Muller**
J.C. Broderick & Associates
1775 Expressway Drive North, Suite 1
Hauppauge, NY 11788

Phone: (631) 584-5492
 Fax:
 Received: 4/5/2021 09:50 AM
 Analysis Date: 4/6/2021
 Collected: 3/29/2021

Project: **Central Blvd. ES/#21-48294**

Test **Central Blvd. ES/#21-48294**
 Site: **60 Central Boulevard**
Bethpage, NY 11714

Test Report: Radon in Air Test Results

Liquid Scintillation ID	Location	Radon Activity (pCi/L)	Start	Stop	Temperature F	Humidity %	Sample Type
387304 382103338-0001	Central-#0002	3	3/29/2021 10:41:00 AM	4/2/2021 10:32:00 AM	78	40	Customer
Sample Notes:							
388860 382103338-0002	Central-#0002 Dup	3.1	3/29/2021 10:41:00 AM	4/2/2021 10:32:00 AM	78	40	Duplicate
Sample Notes: Duplicate's Customer Sample:382103338-0001						Duplicate RPD = 3.3%	
449753 382103338-0003	Central-#0002A	5	3/29/2021 10:43:00 AM	4/2/2021 10:27:00 AM	74	58	Customer
Sample Notes:							
453007 382103338-0004	Central-#0002B	6.2	3/29/2021 10:44:00 AM	4/2/2021 10:28:00 AM	75	56	Customer
Sample Notes:							
449837 382103338-0005	Central-#0003	5.6	3/29/2021 10:48:00 AM	4/2/2021 10:33:00 AM	77	35	Customer
Sample Notes:							
453046 382103338-0006	Central-#0004	4.2	3/29/2021 10:49:00 AM	4/2/2021 10:34:00 AM	76	24	Customer
Sample Notes:							
449526 382103338-0007	Central-#0007	3.9	3/29/2021 10:53:00 AM	4/2/2021 10:30:00 AM	78	54	Customer
Sample Notes:							
452927 382103338-0008	Central-#0005	3.6	3/29/2021 11:00:00 AM	4/2/2021 10:36:00 AM	76	25	Customer
Sample Notes:							
452979 382103338-0009	Central-#0005 Blank	0.1	3/29/2021 11:00:00 AM	4/2/2021 10:36:00 AM	76	25	Blank
Sample Notes:							
444002 382103338-0010	Central-#0006	2.4	3/29/2021 11:03:00 AM	4/2/2021 10:37:00 AM	75	20	Customer
Sample Notes:							

Please visit www.radontestinglab.com

**EMSL Analytical, Inc.**

200 Route 130 North, Cinnaminson, NJ 08077

Phone/Fax: (800) 220-3675 / (856) 786-0327

<http://www.EMSL.com>cinnaminsonradonlab@emsl.com

EMSL Order: 382103338

CustomerID: JCBR50

CustomerPO:

ProjectID:

Test Report: Radon in Air Test Results

Liquid Scintillation ID	Location	Radon Activity (pCi/L)	Start	Stop	Temperature F	Humidity %	Sample Type
452961 382103338-0011	Central-#0006 Dup	2.5	3/29/2021 11:03:00 AM	4/2/2021 10:37:00 AM	75	20	Duplicate
Sample Notes: Duplicate's Customer Sample:382103338-0010							Duplicate RPD = 4.1%
453029 382103338-0012	Central-#0008	3.9	3/29/2021 11:06:00 AM	4/2/2021 10:44:00 AM	73	22	Customer
Sample Notes:							
453047 382103338-0013	Central-#0009	4.4	3/29/2021 11:07:00 AM	4/2/2021 10:47:00 AM	74	25	Customer
Sample Notes:							
388863 382103338-0014	Central-#0010	3.5	3/29/2021 11:09:00 AM	4/2/2021 10:41:00 AM	74	23	Customer
Sample Notes:							
388760 382103338-0015	Central-#0010 Dup	3.6	3/29/2021 11:09:00 AM	4/2/2021 10:41:00 AM	74	23	Duplicate
Sample Notes: Duplicate's Customer Sample:382103338-0014							Duplicate RPD = 2.8%
448388 382103338-0016	Central-#0010A	5	3/29/2021 11:11:00 AM	4/2/2021 10:43:00 AM	73	23	Customer
Sample Notes:							
452972 382103338-0017	Central-#0010A Blank	0	3/29/2021 11:11:00 AM	4/2/2021 10:43:00 AM	73	23	Blank
Sample Notes:							
449953 382103338-0018	Central-#0011	3.8	3/29/2021 11:13:00 AM	4/2/2021 10:25:00 AM	68	29	Customer
Sample Notes:							
452958 382103338-0019	Central-#0011A	4.8	3/29/2021 11:14:00 AM	4/2/2021 10:40:00 AM	75	26	Customer
Sample Notes:							

Report Notes



EMSL Analytical, Inc.

200 Route 130 North, Cinnaminson, NJ 08077

Phone/Fax: (800) 220-3675 / (856) 786-0327

<http://www.EMSL.com>

cinnaminsonradonlab@emsl.com

EMSL Order: 382103338

CustomerID: JCBR50

CustomerPO:

ProjectID:

Test Report: Radon in Air Test Results

Liquid Scintillation ID	Location	Radon Activity (pCi/L)	Start	Stop	Temperature F	Humidity %	Sample Type
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The United States Environmental Protection Agency (EPA) has established a radon action level of 4.0pCi/L. EPA recommends mitigation of a structure if the confirmed radon level is equal to or greater than 4.0pCi/L.

The radon tests were performed using liquid scintillation radon detectors and counted on a liquid scintillation counter following EPA Method # 402-R-92-004 testing protocol for Radon in Air testing. EPA recommends retesting every two years.

Please contact EMSL Analytical, Inc. or your State Health Department for further information.

All procedures used for generating this report are in complete accordance with the current EPA protocols for the analysis of Radon in Air.

Analyst(s)

Racquel Hafiz (19)

Dominic Gehret, Radiochemistry Laboratory Manager, 10872

In no event shall EMSL be liable for indirect, special, consequential, or incidental damages, including, but not limited to, damages for loss of profit or goodwill regardless of the negligence (either sole or concurrent) of EMSL and whether EMSL has been informed of the possibility of such damages, arising out of or in connection with EMSL's services thereunder or the delivery, use, reliance upon or interpretation of test results by client or any third party. We accept no legal responsibility for the purposes for which the client uses the test results. In no event shall EMSL be liable to a client or any third party, whether based upon theories of tort, contract or any other legal or equitable theory, in excess of the amount paid to EMSL by client thereunder. The test results meets all NELAC requirements unless otherwise specified.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ FL RB2034/R2687,IL RNL2008202,IN RTL00935,IA RNLAB10005,KS KS-LB-0005/KS-MS-0482,ME SPC202,MN RL-0005,NE 474/RMB-1083,NJ 03036/MEB92525/MES13910,NY 10872,OH RL39,OK D9952,PA 2573/3393/68-00367,RI RMB-108/RI00179,WV RL000220,NRSB-ARL6006,NRPP

Initial report from 04/07/2021 17:12:52



RECEIVED
EMSL
CINNAMINSON, NJ

CHAIN OF CUSTODY
RADON LABORATORY SERVICES
(COMMERCIAL USE)

4
M3 2D
EMSL ANALYTICAL, INC.
200 ROUTE 130 NORTH
CINNAMINSON, NJ 08077
PHONE: 800-220-3675
www.emsl.com

EMSL ANALYTICAL, INC.

2021 APR -5 A 9:50

EMSL Job #:

382103338

Company Information:

EMSL
Acct #:

JCBR50

Company Name: JCBRODERICK & ASSOCIATES, INC.

Contact: STEVEN MULLER

Address: 1715 EXPRESSWAY DR. N

City: HAUGSPRUE

State: NEW YORK Zip: 11788

Phone: 631-584-5492 Fax: 631-584-8345

Email: SMULLER@JCBRODERICK.COM

Technician Certification #:

Tech Name: STEVEN MULLER

Tech Signature:

Project/Site Information:

*Required

Project Name: CENTRAL BLVD. ES

Project #/PO: 21-48294

*Address: 60 CENTRAL BOULEVARD

*City: BETHPAGE *State: NY *Zip: 11714

*Building type? ☐ Residential ☐ Non-Residential☒ School ☐ Other:*Building foundation type? ☐ Basement ☒ Crawlspace☐ Slab on Grade ☐ Other:

Special Notes / Instructions:

*Turnaround Time (TAT) Options

☐ 1 Day☐ 2 Day☐ 3 Day☐ 4 Day

Disclaimer: In no event shall EMSL be liable for indirect, special, consequential, or incidental damages for loss of profit or goodwill regardless of the negligence (either sole or concurrent) of EMSL and whether EMSL has been informed of the possibility of such damages arising out of or in connection with EMSL's services there under or the delivery, use, reliance upon or interpretation of test results by client or third party. We accept no legal responsibility for the purposes for which the client uses the test results. In no event shall EMSL be liable to a client or any third party, whether based upon theories of tort, contract or any other legal or equitable theory, in excess of the amount paid to EMSL by client thereafter.

(S) Sample (B) Blank (D) Duplicate	Device Number	Location	Room #	Exposure Period Beginning Date		Exposure Period Ending Date		Temp, °F	Humidity, %
				Date	Time	Date	Time		
(S) Sample	387304	CENTRAL BLVD	0002	3/29/21	10:41	4/2/21	10:32	78	40
D	388860	CENTRAL	0002 DUP	3/29/21	10:41	4/2/21	10:32	78	40
S	449753	CENTRAL	0002A	3/29/21	10:43	4/2/21	10:27	74	58
S	453007	CENTRAL	0002B	3/29/21	10:44	4/2/21	10:28	75	56
S	449837	CENTRAL	0003	3/29/21	10:48	4/2/21	10:33	75	35
S	453046	CENTRAL	0004	3/29/21	10:49	4/2/21	10:34	75	24
S	449526	CENTRAL	0007	3/29/21	10:53	4/2/21	10:30	78	54

Relinquished by (Sign):

Date: 4/5/21

Time:

Received by EMSL (Sign):

Date:

Time:

1 Page of 2



EMSL ANALYTICAL, INC.

CHAIN OF CUSTODY
RADON LABORATORY SERVICES
 (COMMERCIAL USE)

EMSL Job #: 382103338

EMSL ANALYTICAL, INC.
 200 ROUTE 130 NORTH
 CINNAMINSON, NJ 08077
 PHONE: 800-220-3675
 www.emsl.com

(S) Sample (B) Blank (D) Duplicate	Device Number	Location	Room #	Exposure Period Beginning Date		Exposure Period Ending Date		Temp, °F	Humidity, %
				Date	Time	Date	Time		
S	452927	CENTRAL	0005	3/29/21	11:00	4/2/21	10:32	76	25
B	452979	CENTRAL	0005 BLANK	3/29/21	11:00	4/2/21	10:32	76	25
S	444002	CENTRAL	0006	3/29/21	11:03	4/2/21	10:37	75	20
D	452961 4	CENTRAL	0006 DUP	3/29/21	11:03	4/2/21	10:37	75	20
S	453029	CENTRAL	0008	3/29/21	11:06	4/2/21	10:44	73	22
S	453047	CENTRAL	0009	3/29/21	11:07	4/2/21	10:47	74	25
S	388863	CENTRAL	0010	3/29/21	11:09	4/2/21	10:41	74	23
D	388760	CENTRAL	0010 DUP	3/29/21	11:09	4/2/21	10:41	74	23
S	448388	CENTRAL	0010A	3/29/21	11:11	4/2/21	10:43	73	23
B	452972	CENTRAL	0010A BLANK	3/29/21	11:11	4/2/21	10:43	73	23
S	449953	CENTRAL	0011	3/29/21	11:13	4/2/21	10:25	68	29
S	452958	CENTRAL	0011A	3/29/21	11:14	4/2/21	10:40	75	26

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Date:

Time:

Received by EMSL (Sign):

Date:

Time:

2 Page of 2

**EMSL Analytical, Inc.**

200 Route 130 North, Cinnaminson, NJ 08077

Phone/Fax: (800) 220-3675 / (856) 786-0327

<http://www.EMSL.com>cinnaminsonradonlab@emsl.com

EMSL Order: 382108974

CustomerID: JCBR50

CustomerPO:

ProjectID:

Attn: **Steven Muller**
J.C. Broderick & Associates
1775 Expressway Drive North, Suite 1
Hauppauge, NY 11788

Phone: (631) 584-5492
 Fax:
 Received: 8/23/2021 12:55 PM
 Analysis Date: 8/24/2021
 Collected: 8/16/2021

Project: **Central Blvd E.S. / 60 Central Boulevard / Project No. 21-48294**

Test **Central Blvd E.S.**
 Site: **60 Central Boulevard**
Bethpage, NY 11714

Test Report: Radon in Air Test Results

Liquid Scintillation ID	Location	Radon Activity (pCi/L)	Start	Stop	Temperature F	Humidity %	Sample Type
453078 382108974-0001	Hallway - #1018	0.5	8/16/2021 4:56:00 PM	8/20/2021 7:45:00 AM	77.3	50	Customer
Sample Notes:							
452968 382108974-0002	Classroom - #1011	0.2	8/16/2021 5:01:00 PM	8/20/2021 7:47:00 AM	72	55.6	Customer
Sample Notes:							
452898 382108974-0003	Classroom - #1006	0.4	8/16/2021 5:03:00 PM	8/20/2021 7:49:00 AM	73.5	69.2	Customer
Sample Notes:							
449781 382108974-0004	Classroom - #1006	0.4	8/16/2021 5:03:00 PM	8/20/2021 7:49:00 AM	73.5	69.2	Duplicate
Sample Notes: Duplicate's Customer Sample:382108974-0003					Duplicate RPD = 0.0%		
453035 382108974-0005	Hallway - #1015	0.5	8/16/2021 5:05:00 PM	8/20/2021 7:50:00 AM	74.8	59.8	Customer
Sample Notes:							
452967 382108974-0006	Classroom - #1002	0.4	8/16/2021 5:08:00 PM	8/20/2021 7:51:00 AM	75.2	51.8	Customer
Sample Notes:							
452936 382108974-0007	Lounge - #1000	0.3	8/16/2021 5:10:00 PM	8/20/2021 7:52:00 AM	75.5	62.4	Customer
Sample Notes:							
449783 382108974-0008	Lounge - #1000	0.4	8/16/2021 5:10:00 PM	8/20/2021 7:52:00 AM	75.5	62.4	Blank
Sample Notes:							
453011 382108974-0009	Hallway - #1029	0.9	8/16/2021 5:14:00 PM	8/20/2021 7:57:00 AM	73.5	64.2	Customer
Sample Notes:							
453040 382108974-0010	Hallway - #1046	0.3	8/16/2021 5:20:00 PM	8/20/2021 7:59:00 AM	75.9	60.9	Customer
Sample Notes:							

Please visit www.radontestinglab.com

**EMSL Analytical, Inc.**

200 Route 130 North, Cinnaminson, NJ 08077

Phone/Fax: (800) 220-3675 / (856) 786-0327

<http://www.EMSL.com>cinnaminsonradonlab@emsl.com

EMSL Order: 382108974

CustomerID: JCBR50

CustomerPO:

ProjectID:

Test Report: Radon in Air Test Results

Liquid Scintillation ID	Location	Radon Activity (pCi/L)	Start	Stop	Temperature F	Humidity %	Sample Type
453003 382108974-0011	Hallway - #1046	2.7	8/16/2021 5:20:00 PM	8/20/2021 7:59:00 AM	75.9	60.9	Duplicate
Sample Notes: Duplicate's Customer Sample:382108974-0010 Duplicate RPD >67%					Duplicate RPD = 160.0%		
452971 382108974-0012	Crawlspace - #0002A	5	8/16/2021 5:30:00 PM	8/20/2021 8:05:00 AM	77.3	66.9	Customer
Sample Notes:							
449550 382108974-0013	Crawlspace - #0002B	4.1	8/16/2021 5:32:00 PM	8/20/2021 8:07:00 AM	77.7	66.5	Customer
Sample Notes:							
449782 382108974-0014	Crawlspace - #0002B	3	8/16/2021 5:32:00 PM	8/20/2021 8:07:00 AM	77.7	66.5	Duplicate
Sample Notes: Duplicate's Customer Sample:382108974-0013					Duplicate RPD = 31.0%		
452984 382108974-0015	Crawlspace - #0003	2.1	8/16/2021 5:35:00 PM	8/20/2021 8:09:00 AM	77.9	66.5	Customer
Sample Notes:							
452951 382108974-0016	Electrical Room - #0004	0.2	8/16/2021 5:37:00 PM	8/20/2021 8:11:00 AM	78	67.5	Customer
Sample Notes:							
449723 382108974-0017	Electrical Room - #0004	1.3	8/16/2021 5:37:00 PM	8/20/2021 8:11:00 AM	78	67.5	Blank
Sample Notes:							
453002 382108974-0018	Crawlspace - #0009	1.8	8/16/2021 5:42:00 PM	8/20/2021 8:15:00 AM	77.3	67.5	Customer
Sample Notes:							
452982 382108974-0019	Crawlspace - #0009	1	8/16/2021 5:42:00 PM	8/20/2021 8:15:00 AM	77.3	67.5	Duplicate
Sample Notes: Duplicate's Customer Sample:382108974-0018					Duplicate RPD = 57.1%		
453057 382108974-0020	Crawlspace - #0010A	1.3	8/16/2021 5:43:00 PM	8/20/2021 8:13:00 AM	77.9	67.8	Customer
Sample Notes:							
452989 382108974-0021	Hallway - #0011A	1.4	8/16/2021 5:45:00 PM	8/20/2021 8:10:00 AM	77.1	68.5	Customer
Sample Notes:							

Report NotesPlease visit www.radontestinglab.com



EMSL Analytical, Inc.

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<http://www.EMSL.com>

cinnaminsonradonlab@emsl.com

EMSL Order: 382108974

CustomerID: JCBR50

CustomerPO:

ProjectID:

Test Report: Radon in Air Test Results

Liquid Scintillation ID	Location	Radon Activity (pCi/L)	Start	Stop	Temperature F	Humidity %	Sample Type
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The United States Environmental Protection Agency (EPA) has established a radon action level of 4.0pCi/L. EPA recommends mitigation of a structure if the confirmed radon level is equal to or greater than 4.0pCi/L.

The radon tests were performed using liquid scintillation radon detectors and counted on a liquid scintillation counter following EPA Method # 402-R-92-004 testing protocol for Radon in Air testing. EPA recommends retesting every two years.

Please contact EMSL Analytical, Inc. or your State Health Department for further information.

All procedures used for generating this report are in complete accordance with the current EPA protocols for the analysis of Radon in Air.

Analyst(s)

Racquel Hafiz (21)

Dominic Gehret, Radiochemistry Laboratory Manager, 10872

In no event shall EMSL be liable for indirect, special, consequential, or incidental damages, including, but not limited to, damages for loss of profit or goodwill regardless of the negligence (either sole or concurrent) of EMSL and whether EMSL has been informed of the possibility of such damages, arising out of or in connection with EMSL's services thereunder or the delivery, use, reliance upon or interpretation of test results by client or any third party. We accept no legal responsibility for the purposes for which the client uses the test results. In no event shall EMSL be liable to a client or any third party, whether based upon theories of tort, contract or any other legal or equitable theory, in excess of the amount paid to EMSL by client thereunder. The test results meets all NELAC requirements unless otherwise specified.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ FL RB2034/R2687,IL RNL2008202,IN RTL00935,IA RNLAB10005,KS KS-LB-0005/KS-MS-0482,ME SPC202,MN RL-0005,NE 474/RMB-1083,NJ 03036/MEB92525/MES13910,NY 10872,OH RL39,OK D9952,PA 2573/3393/68-00367,RI RMB-108/RI00179,WV RL000220,NRSB-ARL6006,NRPP

Initial report from 08/25/2021 09:25:54

EMSL
Transfer

382108974



EMSL ANALYTICAL, INC.

CHAIN OF CUSTODY
RADON LABORATORY SERVICES
(COMMERCIAL USE)

EMSL Job #:

2021 AUG 23 P 12:54

EMSL ANALYTICAL, INC.
200 ROUTE 130 NORTH
CINNAMINSON, NJ 08077
PHONE: 800-220-3675
www.emsl.com

Company Information:

EMSL

Acct #:

JCBR50

Company Name: JCBRODOLICK & ASSOCIATES

Contact: STEVEN MULLER

Address: 1775 EXPRESSWAY DR. N

City: HAUPPAUGE

State: N.Y. Zip: 11788

Phone: 631-584-5492 Fax: 631-584-3395

Email: SMULLER@JCBRODOLICK.COM

Technician Certification #:

Tech Name: Steven Muller

Tech Signature:

Project/Site Information:

*Required

Project Name: CENTRAL BLVD. ES

Project # / PO: 21-48294

*Address: 60 CENTRAL BOULEVARD

*City: BETHPAGE *State: NY *Zip: 11714

*Building type? ☐ Residential ☐ Non-Residential☒ School ☐ Other:*Building foundation type? ☐ Basement ☒ Crawlspace☐ Slab on Grade ☐ Other

Special Notes / Instructions:

*Turnaround Time (TAT) Options

☐ 1 Day☒ 2 Day☒ 3 Day☐ 4 Day

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(S) Sample (B) Blank (D) Duplicate	Device Number	Location	Room #	Exposure Period Beginning Date		Exposure Period Ending Date		Temp. °F	Humidity, %
				Date	Time	Date	Time		
(S) Sample	453078	HALLWAY	1018	8/16/21	4:54pm	8/20/21	7:45	77.3	50.0
S	452968	CLASSROOM	1011	8/16/21	5:01 PM	8/20/21	7:47	72.0	55.6
S	452898	CLASSROOM	1006	8/16/21	5:03 PM	8/20/21	7:49	73.5	64.2
D	449781	CLASSROOM	1006	8/16/21	5:03 PM	8/20/21	7:49	73.5	64.2
S	453035	HALLWAY	1015	8/16/21	5:05 PM	8/20/21	7:50	74.8	59.8
S	452967	CLASSROOM	1002	8/16/21	5:08 PM	8/20/21	7:51	75.2	51.8
S	452936	LOUNGE	1000	8/16/21	5:10 PM	8/20/21	7:52	75.5	62.4

Relinquished by (Sign):

Date: 8/20/21

Time: 8:45

Received by EMSL (Sign): R. Hajo

Date: 8.23.21

Time:

Page of 2



EMSL ANALYTICAL, INC.

382108974

CHAIN OF CUSTODY
RADON LABORATORY SERVICES
 (COMMERCIAL USE)

EMSL Job #:

EMSL ANALYTICAL, INC.
 200 ROUTE 130 NORTH
 CINNAMINSON, NJ 08077
 PHONE: 800-220-3675
www.emsl.com

2021 AUG 23 P 12:54

(S) Sample (B) Blank (D) Duplicate	Device Number	Location	Room #	Exposure Period Beginning Date		Exposure Period Ending Date		Temp, °F	Humidity, %
				Date	Time	Date	Time		
B	449783	LOUNGE	1000	8/16/21	5:14 pm	8/20/21	7:52	75.5	62.4
S	453011	HALLWAY	1029	8/16/21	5:14 pm	8/20/21	7:57	73.5	64.2
S	453040	HALLWAY	1046	8/16/21	5:20 pm	8/20/21	7:59	75.9	60.9
D	453003	HALLWAY	1046	8/16/21	5:20 pm	8/20/21	7:59	75.9	60.9
S	452971	CRAWLSPACE	0002A	8/16/21	5:30 pm	8/20/21	8:05	77.3	66.9
S	449550	CRAWLSPACE	0002B	8/16/21	5:32 pm	8/20/21	8:07	77.7	66.5
D	449782	CRAWLSPACE	0002B	8/16/21	5:32 pm	8/20/21	8:07	77.7	66.5
S	452984	CRAWLSPACE	0003	8/16/21	5:35 pm	8/20/21	8:09	77.9	66.5
S	452951	ELECTRICAL Rm	0004	8/16/21	5:37 pm	8/20/21	8:11	78.0	67.5
B	449723	ELECTRICAL Rm	0004	8/16/21	—	8/20/21	—	—	—
S	453002	CRAWLSPACE	0009	8/16/21	5:42 pm	8/20/21	8:15	77.3	67.5
D	452982	CRAWLSPACE	0009	8/16/21	5:42 pm	8/20/21	8:15	77.3	67.5
S	453057	CRAWLSPACE	0010A	8/16/21	5:43 pm	8/20/21	8:13	77.9	67.8
S	452989	HALLWAY	0011A	8/16/21	5:45 pm	8/20/21	8:11	77.1	68.5

Relinquished by (Sign):

Date: 8/20/21

Time: 8:45

Received by EMSL (Sign):

R. Haff

Date: 8.23.21

Time:

2 Page of 2