July 31, 2020

City of New London
215 North Shawano Street
New London, Wisconsin 54961

Attention: Mr. Chad Hoerth
Phone: (920) 982-8500 x116
Email: choerth@newlondonwi.org

Re: **Vapor Intrusion Assessment**
City of New London Library
412 South Pearl Street
New London, Wisconsin
Terracon Project No. 58207149

Dear Mr. Hoerth:

Terracon Consultants, Inc. (Terracon) has prepared this brief letter report to document the vapor intrusion (VI) assessment activities performed at the City of New London public library located at 412 South Pearl Street, New London, Wisconsin (Figure 1).

1.0 BACKGROUND

As part of the environmental site investigation of the Dry Cleaners Etc (former) site (BRRTS # 02-69-552218) located at 102 East Cook Street, New London, Wisconsin, three sub-slab vapor points (LIB-SS-1 through LIB-SS-3) were sampled inside the city museum/library basement on April 21, 2020. Sub-slab vapor sampling point LIB-SS-1 was previously installed near the southeast stairwell. Sub-slab vapor sampling points LIB-SS-2 and LIB-SS-3 were installed near the southwest corner of the museum near the kid's corner and near the bottom of the main (northwest) stairwell in the janitor's closet, respectively. Each of the vapor points were sampled and analyzed for volatile organic compounds (VOCs) by the United States Environmental Protection Agency (USEPA) Method TO-15 (dry cleaner list).

The results are summarized in the attached Table 1. The Wisconsin Department of Natural Resources (WDNR) has established vapor quality standards, which are the vapor action limit (VAL) for ambient air and the vapor risk screening level (VRSL). The VRSL is the VAL adjusted for sub-slab vapor to indoor air by applying an attenuation factor of 0.03 (sub-slab) for comparison with the analytical results. If the sub-slab vapor results are above applicable VRSLs, additional sampling and mitigation may be necessary.

Sub-slab vapor samples LIB-SS-1 and LIB-SS-2 contained tetrachloroethene (PCE) levels below its applicable (small commercial) VRSL (6,000 micrograms per cubic meter [µg/m^3]) but above its residential VRSL. PCE was detected at 3,530 µg/m^3 and 2,650 µg/m^3 in LIB-SS-1 and LIB-SS-2, respectively. LIB-SS-1 PCE concentration decreased from the previous sampling round on February 20, 2019, when the PCE concentration was above its small commercial building VRSL. LIB-SS-3 had two VOCs at concentrations above their limits of detection, however, the concentrations were well below their VRSLs.

Based on the sub-slab vapor monitoring results, the City of New London wanted to further assess the indoor air quality of the library.

2.0 SCOPE OF SERVICES

The following scope of services was performed as presented in our July 7, 2020, proposal.

2.1 Health and Safety

Terracon is committed to the safety of all its employees. As such, and in accordance with our *Incident and Injury Free*® safety goals, Terracon developed a safety plan that was used by our personnel during field services. Prior to commencement of on-site activities, Terracon held a brief health and safety meeting to review health and safety needs for this specific project. Fieldwork was performed in a USEPA Level D work uniform consisting of hard hats, safety glasses, protective gloves, and steel toed boots.

2.2 Vapor Intrusion Assessment

On July 13, 2020, Terracon personnel collected ambient air samples at the subject site to identify conditions and assess potential vapor intrusion pathways. The sample locations are presented on the attached Sample Locations map (Figure 1). Samples were collected as described below:

- 8-hour indoor ambient air samples were collected in areas near sub-slab vapor sampling points LIB-SS-1 and LIB-SS-2 (LIB-IA-1 and LIB-IA-2), in laboratory-prepared 6-liter Summa canisters with flow regulators calibrated for 8-hour collection. The ambient air samples collected within the Summa canisters were submitted to Pace Analytical Laboratory for analysis of VOCs using USEPA Method TO-15 (dry cleaner short list including PCE, trichloroethene [TCE], cis-1,2-dichloroethene, trans-1,2-dichloroethene, and vinyl chloride);

- One indoor background 8-hour ambient air sample was collected from near sub-slab vapor sampling point LIB-SS-3 (LIB-IA-3) in a laboratory-prepared 6-liter Summa canister with flow regulator calibrated for 8-hour collection. The ambient air sample collected within

the Summa canister was submitted to Pace Analytical Laboratory for analysis of VOCs using USEPA Method TO-15 (dry cleaner short list). This sample was intended to help assess the background air quality, i.e., other sources in the basement museum area that may be contributing to the indoor air quality; and

- One background 8-hour outdoor ambient air sample (LIB-OA-1) was collected from an area outside the library to the south in a laboratory-prepared 6-liter Summa canister with a flow regulator calibrated for 8-hour collection. The ambient air sample collected within the Summa canister was submitted to Pace Analytical Laboratory for analysis of VOCs using USEPA Method TO-15 (dry cleaner short list). This sample was intended to help assess the background outdoor air quality that may contribute to the indoor air quality, i.e., other potential sources affecting the general air quality.

At each sample location, the Summa canister was placed on a table or elevated location at least 3 feet off the floor in the breathing zone (see attached Photolog).

3.0 RESULTS AND DISCUSSION

The analytic test results are summarized in the attached Table 2. The laboratory analytic test report and chain-of-custody are also attached.

The results indicate that PCE and TCE were detected in each of the three indoor air samples. PCE concentrations ranged from 1.1 µg/m^3 in indoor background sample LIB-IA-3 to 5.5 µg/m^3 in sample LIB-IA-2. These concentrations are well below the small commercial PCE VAL of 180 µg/m^3. Likewise, TCE concentrations ranged from 1.9 µg/m^3 in sample LIB-IA-3 to 4.7 µg/m^3 in sample LIB-IA-1. These concentrations are below the small commercial TCE VAL of 8.8 µg/m^3. There was no detect of PCE-related compounds at the laboratory limit of detection (LOD) in the outdoor background sample LIB-OA-1.

Based on these results there does not appear to be a vapor intrusion issue in the library at this time during summertime conditions. Indoor air quality may change seasonally.

Terracon appreciates the opportunity to provide environmental consulting services for the City of New London. If you have any questions, please do not hesitate to call our office at (414) 423-0255, call Scott directly (414-209-7640), or email (Scott.Hodgson@terracon.com).

Sincerely,

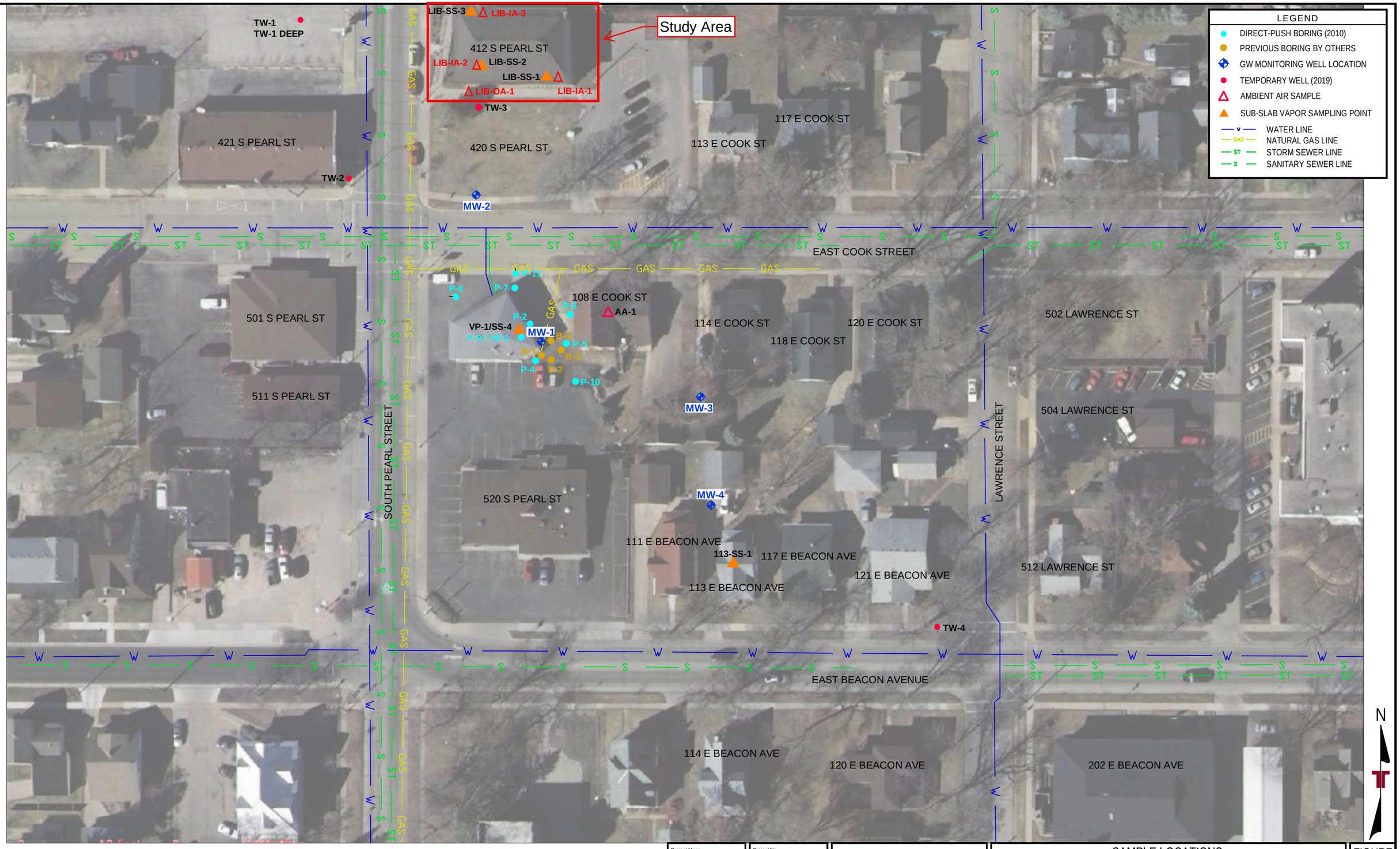
Terracon

Scott A. Hodgson, P.G.
Senior Geologist

Edmund A. Buc, P.E.
Senior Engineer

Attachment: Figure 1
Tables 1 and 2
Photolog
Laboratory Analytic Test Report and Chain-of-Custody

SAH/EAB:sah/N:\Projects\2020\58207149\PROJECT DOCUMENTS (Reports-Letters-Drafts to Clients)\58207149.City of New London Library VI.July2020.docx



60 0 60

APPROXIMATE SCALE: 1" = 60'

DIAGRAM IS FOR GENERAL LOCATION ONLY AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Mngr:	TPW
Drawn By:	AGC/DCT
Checked By:	TPW
Approved By:	TPW

Project No.	58107028
Scale:	AS SHOWN
File No.	58107028 SD-2
Date:	11/2019

Terracon
Consulting Engineers and Scientists
9856 SOUTH 57th STREET FRANKLIN, WI 53132
PH. (414) 423-0255 FAX. (414) 423-0566

SAMPLE LOCATIONS

DRY CLEANERS, ETC.
102 EAST COOK STREET
NEW LONDON, WISCONSIN

FIGURE 1

PDF EDITED

TABLE 1
Vapor Analytic Test Results Summary-Sub-Slab

City of New London Public Library
New London, Wisconsin
Terracon Project No. 58207149

Sample ID	Location	Sample Date	Sample Type	Chlorinated Volatile Organic Compounds (µg/m^3)				
				cis - 1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene (PCE)	Trichloroethene (TCE)	Vinyl Chloride
Terracon Supplemental Investigation - 2019/2020								
LIB-SS-1	Library: 412 S Pearl-Southeast Stairwell	2/20/2019	Small Commercial Sub-slab 30 minute	<0.38	<0.50	6,780	85.8	<0.22
LIB-SS-1	Library: 412 S Pearl-Southeast Stairwell	4/21/2020	Small Commercial Sub-slab 30 minute	<0.20	0.80	3,530	21.3	<0.16
LIB-SS-2	Library: 412 S Pearl-SW Kiddies Corner Near Column	4/21/2020	Small Commercial Sub-slab 30 minute	0.23	0.86	2,650	5.7	<0.16
LIB-SS-3	Library: 412 S Pearl-NW Stairwell Closet	4/21/2020	Small Commercial Sub-slab 30 minute	<0.17	0.77	28.8	<0.33	<0.14
			Residential Indoor Air VAL[1]	**NE**	**NE**	**42**	**2.1**	**1.7**
			Residential Sub-slab Vapor/Soil Gas VRSL[2]	NE	NE	1,400	70	57
			Small Commercial Building Indoor Air VAL[1]	***NE***	***NE***	***180***	***8.8***	***28***
			Small Commercial Building Sub-slab Vapor/Soil Gas VRSL[2]	NE	NE	6,000	290	930
			Large Commercial/Industrial Building Indoor Air VAL[1]	***NE***	***NE***	***180***	***8.8***	***28***
			Large Commercial/Industrial Building Sub-slab Vapor/Soil Gas VRSL[3]	NE	NE	18,000	880	2,800

NOTES:

µg/m^3 = micrograms per cubic meter

VAL = Vapor Action Level for Ambient Air (given for information only)

VRSL = Vapor Risk Screening Level

[1] VAL given as the lesser of 1:100,000 lifetime cancer risk or noncancer hazard index of 1 value in generic U.S EPA Tables at the web address: http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm and modified for Wisconsin Vapor Intrusion Guidance PUB-RR-800 lifetime cancer risk (1:100,000)

[2] VRSL is the VAL adjusted for sub-slab vapor to indoor air by applying an attenuation factor of 0.03 (sub-slab and shallow soil gas) for comparison with the analytical results.

[3] VRSL is the VAL adjusted for sub-slab vapor to indoor air by applying an attenuation factor of 0.01 (sub-slab and shallow soil gas) for comparison with the analytical results.

Bold Values indicate exceedance of applicable residential VALs (indoor air)

Green Shaded Values indicate exceedance of applicable residential VRSLs (sub-slab vapor and shallow soil gas)

Bold Italic Values indicate exceedance of applicable small commercial building VALs (indoor air)

Brown Shaded Values indicate exceedance of applicable small commercial building VRSLs (sub-slab vapor and shallow soil sas)

Bold Italic Underline Values indicate exceedance of applicable large commercial/industrial building VALs (indoor air)

Pink Shaded Values indicate exceedance of applicable large commercial/industrial building VRSLs (sub-slab vapor and shallow soil gas)

< = Not detected above listed limit of detection (LOD)

--- = Not analyzed

NE=Not Established

TABLE 2
Vapor Analytic Test Results Summary-Ambient Air

City of New London Public Library
New London, Wisconsin
Terracon Project No. 58207149

Sample ID	Location	Sample Date	Sample Type	Chlorinated Volatile Organic Compounds (µg/m^3)				
				cis - 1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene (PCE)	Trichloroethene (TCE)	Vinyl Chloride
LIB-IA-1	Library: Basement Southeast Stairwell	7/13/2020	Small Commercial Indoor Ambient Air 8-hour	<0.23	<0.24	5.2	4.7	<0.15
LIB-IA-2	Library Basement-SW Kiddies Corner Near Column	7/13/2020	Small Commercial Indoor Ambient Air 8-hour	<0.24	<0.25	5.5	2.5	<0.15
LIB-IA-3	Library Basement-NW Stairwell Landing	7/13/2020	Small Commercial Indoor Ambient Air 8-hour	<0.24	<0.25	1.1	1.9	<0.15
LIB-OA-1	Library-Outside, South Side	7/13/2020	Small Commercial Outdoor Ambient Air 8-hour	<0.23	<0.24	<0.41	<0.25	<0.15
Small Commercial Building Indoor Air VAL[1]				***NE***	***NE***	***180***	***8.8***	***28***

NOTES:
µg/m^3 = micrograms per cubic meter
VAL = Vapor Action Level for Ambient Air
[1] VAL given as the lesser of 1:100,000 lifetime cancer risk or noncancer hazard index of 1 value in generic U.S EPA Tables at the web address: http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm and modified for Wisconsin Vapor Intrusion Guidance PUB-RR-800 lifetime cancer risk (1:100,000)
XXX.XX = exceedance of applicable small commercial VALs (indoor air)
< = Not detected above listed limit of detection (LOD)
NE=Not Established

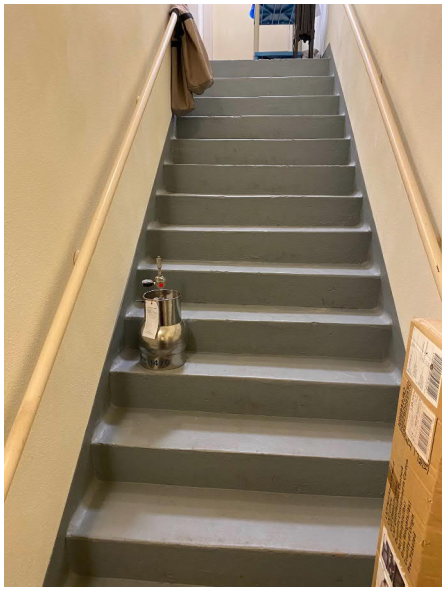


Photo #1 View of indoor ambient air sample LIB-IA-1 in the stairwell near the southeastern corner of the basement.

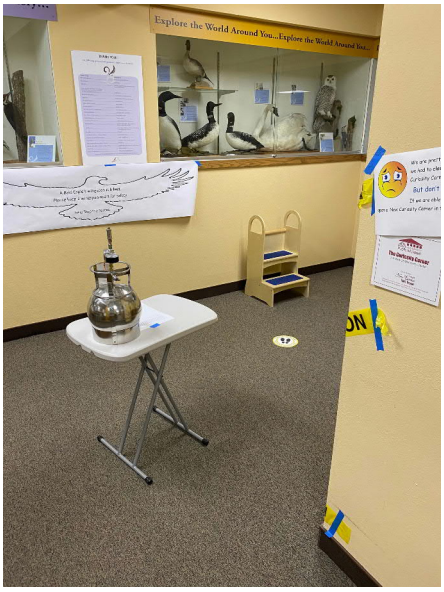


Photo #2 View of indoor ambient air sample LIB-IA-2 near the southwestern corner of the basement.

Photo #3 View of indoor ambient air sample LIB-IA-3 near the northwestern corner of the basement.

Photo #4 View of outdoor ambient air sample LIB-OA-1 on the south side of the library.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

July 20, 2020

Scott Hodgson
Terracon WI
9856 57th. St.
Franklin, WI 53132

RE: Project: 58207149 New London Library Va
Pace Project No.: 10524847

Dear Scott Hodgson:

Enclosed are the analytical results for sample(s) received by the laboratory on July 15, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Minneapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kirsten Hogberg
kirsten.hogberg@pacelabs.com
(612)607-1700
Project Manager

Enclosures

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: 58207149 New London Library Va
Pace Project No.: 10524847

Pace Analytical Services - Minneapolis MN

A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts DWP Certification #: via MN 027-053-137
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Vermont Certification #: VT-027053137
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: 58207149 New London Library Va
Pace Project No.: 10524847

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10524847001	**LIB-OA-1**	Air	07/13/20 15:55	07/15/20 08:50
10524847002	**LIB-IA-1**	Air	07/13/20 15:50	07/15/20 08:50
10524847003	**LIB-IA-2**	Air	07/13/20 15:50	07/15/20 08:50
10524847004	**LIB-IA-3**	Air	07/13/20 15:50	07/15/20 08:50

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SAMPLE ANALYTE COUNT

Project: 58207149 New London Library Va
Pace Project No.: 10524847

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10524847001	**LIB-OA-1**	TO-15	MJL	5	PASI-M
10524847002	**LIB-IA-1**	TO-15	MJL	5	PASI-M
10524847003	**LIB-IA-2**	TO-15	MJL	5	PASI-M
10524847004	**LIB-IA-3**	TO-15	MJL	5	PASI-M

PASI-M = Pace Analytical Services - Minneapolis

Pace Analytical Services, LLC
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(612)607-1700

SUMMARY OF DETECTION

Project: 58207149 New London Library Va
Pace Project No.: 10524847

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10524847002	**LIB-IA-1**					
TO-15	Tetrachloroethene	5.2	ug/m3	0.99	07/17/20 16:15	
TO-15	Trichloroethene	4.7	ug/m3	0.79	07/17/20 16:15	
10524847003	**LIB-IA-2**					
TO-15	Trichloroethene	5.5	ug/m3	0.81	07/17/20 16:43	
TO-15	Tetrachloroethene	2.5	ug/m3	1.0	07/17/20 16:43	
10524847004	**LIB-IA-3**					
TO-15	Tetrachloroethene	1.1	ug/m3	1.0	07/17/20 17:39	
TO-15	Trichloroethene	1.9	ug/m3	0.80	07/17/20 17:39	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 58207149 New London Library Va
Pace Project No.: 10524847

Sample: LIB-OA-1 **Lab ID: 10524847001** Collected: 07/13/20 15:55 Received: 07/15/20 08:50 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15 Pace Analytical Services - Minneapolis								
cis-1,2-Dichloroethene	**<0.23**	ug/m3	1.2	0.23	1.44		07/17/20 15:18	156-59-2	
trans-1,2-Dichloroethene	**<0.24**	ug/m3	1.2	0.24	1.44		07/17/20 15:18	156-60-5	
Tetrachloroethene	**<0.41**	ug/m3	0.99	0.41	1.44		07/17/20 15:18	127-18-4	
Trichloroethene	**<0.25**	ug/m3	0.79	0.25	1.44		07/17/20 15:18	79-01-6	
Vinyl chloride	**<0.15**	ug/m3	0.37	0.15	1.44		07/17/20 15:18	75-01-4	

Sample: LIB-IA-1 **Lab ID: 10524847002** Collected: 07/13/20 15:50 Received: 07/15/20 08:50 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15 Pace Analytical Services - Minneapolis								
cis-1,2-Dichloroethene	**<0.23**	ug/m3	1.2	0.23	1.44		07/17/20 16:15	156-59-2	
trans-1,2-Dichloroethene	**<0.24**	ug/m3	1.2	0.24	1.44		07/17/20 16:15	156-60-5	
Tetrachloroethene	**5.2**	ug/m3	0.99	0.41	1.44		07/17/20 16:15	127-18-4	
Trichloroethene	**4.7**	ug/m3	0.79	0.25	1.44		07/17/20 16:15	79-01-6	
Vinyl chloride	**<0.15**	ug/m3	0.37	0.15	1.44		07/17/20 16:15	75-01-4	

Sample: LIB-IA-2 **Lab ID: 10524847003** Collected: 07/13/20 15:50 Received: 07/15/20 08:50 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15 Pace Analytical Services - Minneapolis								
Vinyl chloride	**<0.15**	ug/m3	0.39	0.15	1.49		07/17/20 16:43	75-01-4	
cis-1,2-Dichloroethene	**<0.24**	ug/m3	1.2	0.24	1.49		07/17/20 16:43	156-59-2	
Trichloroethene	**5.5**	ug/m3	0.81	0.26	1.49		07/17/20 16:43	79-01-6	
Tetrachloroethene	**2.5**	ug/m3	1.0	0.43	1.49		07/17/20 16:43	127-18-4	
trans-1,2-Dichloroethene	**<0.25**	ug/m3	1.2	0.25	1.49		07/17/20 16:43	156-60-5	

Sample: LIB-IA-3 **Lab ID: 10524847004** Collected: 07/13/20 15:50 Received: 07/15/20 08:50 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15 Pace Analytical Services - Minneapolis								
cis-1,2-Dichloroethene	**<0.24**	ug/m3	1.2	0.24	1.46		07/17/20 17:39	156-59-2	
trans-1,2-Dichloroethene	**<0.25**	ug/m3	1.2	0.25	1.46		07/17/20 17:39	156-60-5	
Tetrachloroethene	**1.1**	ug/m3	1.0	0.42	1.46		07/17/20 17:39	127-18-4	
Trichloroethene	**1.9**	ug/m3	0.80	0.26	1.46		07/17/20 17:39	79-01-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 58207149 New London Library Va
Pace Project No.: 10524847

Sample: LIB-IA-3 **Lab ID: 10524847004** Collected: 07/13/20 15:50 Received: 07/15/20 08:50 Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15 Pace Analytical Services - Minneapolis								
Vinyl chloride	**<0.15**	ug/m3	0.38	0.15	1.46		07/17/20 17:39	75-01-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 58207149 New London Library Va
Pace Project No.: 10524847

QC Batch: 687504
QC Batch Method: TO-15
Analysis Method: TO-15
Analysis Description: TO15 MSV AIR Low Level
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10524847001, 10524847002, 10524847003, 10524847004

METHOD BLANK: 3676619 Matrix: Air
Associated Lab Samples: 10524847001, 10524847002, 10524847003, 10524847004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
cis-1,2-Dichloroethene	ug/m3	<0.16	0.81	07/17/20 12:29	
Tetrachloroethene	ug/m3	<0.29	0.69	07/17/20 12:29	
trans-1,2-Dichloroethene	ug/m3	<0.17	0.81	07/17/20 12:29	
Trichloroethene	ug/m3	<0.18	0.55	07/17/20 12:29	
Vinyl chloride	ug/m3	<0.10	0.26	07/17/20 12:29	

LABORATORY CONTROL SAMPLE: 3676620

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
cis-1,2-Dichloroethene	ug/m3	41.6	44.2	106	70-132	
Tetrachloroethene	ug/m3	71	76.5	108	70-136	
trans-1,2-Dichloroethene	ug/m3	42.2	44.6	106	70-132	
Trichloroethene	ug/m3	56.3	61.9	110	70-132	
Vinyl chloride	ug/m3	26.7	28.8	108	68-141	

SAMPLE DUPLICATE: 3678094

Parameter	Units	10524847001 Result	Dup Result	RPD	Max RPD	Qualifiers
cis-1,2-Dichloroethene	ug/m3	<0.23	<0.23		25	
Tetrachloroethene	ug/m3	<0.41	<0.41		25	
trans-1,2-Dichloroethene	ug/m3	<0.24	<0.24		25	
Trichloroethene	ug/m3	<0.25	<0.25		25	
Vinyl chloride	ug/m3	<0.15	<0.15		25	

SAMPLE DUPLICATE: 3678095

Parameter	Units	10524847003 Result	Dup Result	RPD	Max RPD	Qualifiers
cis-1,2-Dichloroethene	ug/m3	<0.24	<0.24		25	
Tetrachloroethene	ug/m3	2.5	2.4	3	25	
trans-1,2-Dichloroethene	ug/m3	<0.25	<0.25		25	
Trichloroethene	ug/m3	5.5	5.3	3	25	
Vinyl chloride	ug/m3	<0.15	<0.15		25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: 58207149 New London Library Va
Pace Project No.: 10524847

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

Pace Analytical Services, LLC
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Minneapolis, MN 55414
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 58207149 New London Library Va
Pace Project No.: 10524847

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10524847001	**LIB-OA-1**	TO-15	687504		
10524847002	**LIB-IA-1**	TO-15	687504		
10524847003	**LIB-IA-2**	TO-15	687504		
10524847004	**LIB-IA-3**	TO-15	687504		

Pace Analytical®
www.pacelabs.com

AIR: CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

41331

Page: 1 of 1

Section A Required Client Information:

Company: Terracon
Address: 9856 South 57th Street, Franklin, WI
Email To: Scott A Hodgson
Phone: Fax:
Requested Due Date/TAT: 5-day TAT

Section B Required Project Information:

Report To: Scott A Hodgson
Copy To:
Purchase Order No.:
Project Name: New London Library Vapor
Project Number: 58207149

Section C Invoice Information:

Attention:
Company Name: SAME
Address:
Pace Quote Reference:
Pace Project Manager/Sales Rep.
Pace Profile #: 26060

Program: ☐ UST ☐ Superfund ☐ Emissions ☐ Clean Air Act ☐ Voluntary Clean Up ☐ Dry Clean ☐ RCRA ☐ Other

Location of Sampling by State:

Reporting Units: ug/m³ ___ mg/m³ ___ PPBV ___ PPMV ___ Other ___

Report Level II.___ III.___ IV.___ Other___

'Section D Required Client Information

Valid Media Codes

MEDIA	CODE
Tedlar Bag	TB
1 Liter Summa Can	1LC
6 Liter Summa Can	6LC
Low Volume Puff	LVP
High Volume Puff	HVP
Other	PM10

ITEM #	AIR SAMPLE ID (Sample IDs MUST BE UNIQUE)	MEDIA CODE	PID Reading (Client only)	COLLECTED COMPOSITE - START DATE	COLLECTED COMPOSITE - START TIME	COLLECTED COMPOSITE - END/GRAB DATE	COLLECTED COMPOSITE - END/GRAB TIME	Canister Pressure (Initial Field - in Hg)	Canister Pressure (Final Field - in Hg)	Summa Can Number	Flow Control Number	Method: PM10	3C - Fixed Gas (%)	TO-3 BTEX	TO-3M (Methane)	TO-14	TO-15 Full List VOCs	TO-15 Short List BTEX	TO-15 Short List Chlorinated	TO-15 Short List (other)	Pace Lab ID
1	LIB-OA-1	6L		7/13/2020	1555	7/13/2020	800	-30	-2	3911	24799							X			001
2	LIB-IA-1	6L			1550		808	-29	-2	1694	02811							X			002
3	LIB-IA-2	6L			1550		806	-30	-3	0394	00026							X			003
4	LIB-IA-3	6L			1550		805	-28	-2	1524	18999							X			004
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

Comments: PCE - related Short list

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
	7/14/20	1446	Pace	7/14/20	1440
Pace	7/14/20	1700	Pace	7/15/20	8:50

SAMPLE CONDITIONS

Temp in °C	Received on Ice	Custody Sealed Cooler	Samples Intact
21.5	(Y)/N	(Y)/N	Y/(N)
—	(Y)/N	(Y)/N	Y/(N)
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Ryan Johnson
SIGNATURE of SAMPLER:
DATE Signed (MM / DD / YY): 07/13/2020

WO# : 10524847

10524847

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414 Air Technical Phone: 612.607.6386

Pace Analytical®	Document Name: **Sample Condition Upon Receipt (SCUR) - Air**	Document Revised: 24Mar2020 **Page 1 of 1**
	Document No.: **ENV-FRM-MIN4-0113 Rev.00**	Pace Analytical Services - **Minneapolis**

Air Sample Condition Upon Receipt

Client Name: Terracon-WI

Project #: **WO#: 10524847**

PM: KNH **Due Date: 07/22/20**

CLIENT: Terracon-WI

Courier: ☐Fed Ex ☐UPS ☐USPS ☐Client ☐Pace ☐SpeeDee ☒Commercial **See Exception** ☐

Tracking Number: 2501902-1

Custody Seal on Cooler/Box Present? ☐Yes ☒No **Seals Intact?** ☐Yes ☐No

Packing Material: ☐Bubble Wrap ☐Bubble Bags ☒Foam ☐None ☐Tin Can ☐Other:_____ **Temp Blank rec:** ☐Yes ☒No

Temp. (TO17 and TO13 samples only) (°C): — **Corrected Temp (°C):** —

Thermometer Used: ☐G87A9170600254 ☐G87A9155100842

Temp should be above freezing to 6°C **Correction Factor:** — **Date & Initials of Person Examining Contents:** 7-15-20 MI

Type of ice Received ☐Blue ☐Wet ☒None

				Comments:
Chain of Custody Present?	☒Yes	☐No		1.
Chain of Custody Filled Out?	☒Yes	☐No		2.
Chain of Custody Relinquished?	☒Yes	☐No		3.
Sampler Name and/or Signature on COC?	☒Yes	☐No	☐N/A	4.
Samples Arrived within Hold Time?	☒Yes	☐No		5.
Short Hold Time Analysis (<72 hr)?	☐Yes	☒No		6.
Rush Turn Around Time Requested?	☐Yes	☒No		7.
Sufficient Volume?	☒Yes	☐No		8.
Correct Containers Used? **(Tedlar bags not acceptable container for TO-14, TO-15 or APH)** -Pace Containers Used?	☒Yes ☒Yes	☐No ☐No		9.
Containers Intact? **(visual inspection, no leaks when pressurized)**	☒Yes	☐No		10.
Media: Air Can Airbag Filter TDT Passive				11. Individually Certified Cans Y N (list which samples) Sample 3 is can 349, not 394.
Is sufficient information available to reconcile samples to the COC?	☒Yes	☐No		12.
Do cans need to be pressurized? **(DO NOT PRESSURIZE 3C or ASTM 1946!!!)**	☐Yes	☐No		13.

Gauge # ☒10AIR26 ☐10AIR34 ☐10AIR35 ☐4097

Canisters					Canisters				
Sample Number	Can ID	Flow Controller	Initial Pressure	Final Pressure	Sample Number	Can ID	Flow Controller	Initial Pressure	Final Pressure
OA-1	3911	2479	-2	+5					
IA-1	1694	281	-2	↓					
IA-2	349	26	-3	↓					
IA-3	1524	1899	-2.5	↓					

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐Yes ☐No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review: Kristen Hoffberg **Date:** 7/15/2020

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)