

May 12, 2020

Glenn Walker PO Box
Brunswick County Water Systems
PO Box 249
Bolivia, NC 28422

RE: Project: 1,4-Dx-522 (Weekly)
Pace Project No.: 35548749

Dear Glenn PO Box:

Enclosed are the analytical results for sample(s) received by the laboratory on May 08, 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 - Ormond Beach

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

Sincerely,



Lisa Harvey
lisa.harvey@pacelabs.com
(386) 672-5668
Project Manager

Enclosures

cc: Billy Benton, BRUNSWICK COUNTY PUBLIC UTILITIES



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

CERTIFICATIONS

Project: 1,4-Dx-522 (Weekly)

Pace Project No.: 35548749

Pace Analytical Services Ormond Beach

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST

Alabama Certification #: 41320

Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079

Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity

Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383

Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity

Louisiana Environmental Certificate #: 05007

Maryland Certification: #346

Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074

Nebraska Certification: NE-OS-28-14

New Hampshire Certification #: 2958

New Jersey Certification #: FL022

New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710

North Dakota Certification #: R-216

Oklahoma Certification #: D9947

Pennsylvania Certification #: 68-00547

Puerto Rico Certification #: FL01264

South Carolina Certification: #96042001

Tennessee Certification #: TN02974

Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C

Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

SAMPLE SUMMARY

Project: 1,4-Dx-522 (Weekly)

Pace Project No.: 35548749

Lab ID	Sample ID	Matrix	Date Collected	Date Received
35548749001	5720 S01	Drinking Water	05/07/20 08:00	05/08/20 10:45
35548749002	5720 E01	Drinking Water	05/07/20 08:00	05/08/20 10:45

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

SAMPLE ANALYTE COUNT

Project: 1,4-Dx-522 (Weekly)

Pace Project No.: 35548749

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
35548749001	5720 S01	EPA 522	CB1	2	PASI-O
35548749002	5720 E01	EPA 522	CB1	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

ANALYTICAL RESULTS

Project: 1,4-Dx-522 (Weekly)

Pace Project No.: 35548749

Sample: 5720 S01		Lab ID: 35548749001		Collected: 05/07/20 08:00		Received: 05/08/20 10:45		Matrix: Drinking Water	
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane		Analytical Method: EPA 522 Preparation Method: EPA 522 Pace Analytical Services - Ormond Beach							
1,4-Dioxane (p-Dioxane)	0.61	ug/L	0.20	0.12	1	05/11/20 07:44	05/12/20 08:54	123-91-1	
Surrogates									
1,4-Dioxane-d8 (S)	83	%	70-130		1	05/11/20 07:44	05/12/20 08:54		

Sample: 5720 E01		Lab ID: 35548749002		Collected: 05/07/20 08:00		Received: 05/08/20 10:45		Matrix: Drinking Water	
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane		Analytical Method: EPA 522 Preparation Method: EPA 522 Pace Analytical Services - Ormond Beach							
1,4-Dioxane (p-Dioxane)	0.46	ug/L	0.20	0.12	1	05/11/20 07:44	05/12/20 09:10	123-91-1	
Surrogates									
1,4-Dioxane-d8 (S)	86	%	70-130		1	05/11/20 07:44	05/12/20 09:10		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA

Project: 1,4-Dx-522 (Weekly)

Pace Project No.: 35548749

QC Batch:	631785	Analysis Method:	EPA 522
QC Batch Method:	EPA 522	Analysis Description:	522 MSS 1,4 Dioxane
		Laboratory:	Pace Analytical Services - Ormond Beach

Associated Lab Samples: 35548749001, 35548749002

METHOD BLANK: 3435547 Matrix: Water

Associated Lab Samples: 35548749001, 35548749002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	0.12 U	0.20	0.12	05/12/20 06:30	
1,4-Dioxane-d8 (S)	%	96	70-130		05/12/20 06:30	

LABORATORY CONTROL SAMPLE & LCSD: 3435548

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	20	16.7	16.6	83	83	70-130	0	20	
1,4-Dioxane-d8 (S)	%				95	96	70-130			

LABORATORY CONTROL SAMPLE: 3435550

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	0.2	0.15 I	76	50-150	
1,4-Dioxane-d8 (S)	%			93	70-130	

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

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALIFIERS

Project: 1,4-Dx-522 (Weekly)

Pace Project No.: 35548749

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 adjusted reporting limit.

TNTC - Too Numerous To Count

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

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.

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.

ANALYTE QUALIFIERS

- | | |
|---|--|
| I | The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit. |
| U | Compound was analyzed for but not detected. |

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1,4-Dx-522 (Weekly)

Pace Project No.: 35548749

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
35548749001	5720 S01	EPA 522	631785	EPA 522	631904
35548749002	5720 E01	EPA 522	631785	EPA 522	631904

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

WO# : 35548749



CHAIN-OF-CUSTODY / Analytical Request Document

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

Section C

Required Client Information:
Company Brunswick County Water System
Address 3954 Clearwell Dr. NE
Leland, NC 28451
Email glenn.walker@brunswickcountync.gov
Phone 910-371-3490
Requested Due Date:
Report To: Glenn - Bottles
Copy To:
Company Name:
Address:
Purchase Order #:
Project Name: 1-4-Dx-522 (Weekly)
Project #:
Pace Project Manager: lisa.harvey@pacelabs.com
Pace Profile #: 9551-1

Invoice Information:
Attention:
Company Name:
Address:
Purchase Order #:
Project Name: 1-4-Dx-522 (Weekly)
Project #:
Pace Project Manager: lisa.harvey@pacelabs.com
Pace Profile #: 9551-1

Regulatory Agency:
State / Location: NC

Page : 1 Of 1

ITEM #	MATRIX Drinking Water Water Waste Water Product Soil/Solid Oil Wipe Air Other Tissue	CODE DW WT WW P SL OL WP AR OT TS	SAMPLE ID One Character per box. (A-Z, 0-9 / , -) Sample IDs must be unique	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	RELINQUISHED BY / AFFILIATION		DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS	
				START	END			DATE	TIME							DATE
				DATE	TIME	DATE	TIME	DATE	TIME	DATE	TIME	DATE	TIME			
1			5720S01	5-7-20	0800	5-7-20	0800	57	57	5-7-20	0800	✓	1,4-dioxane, method 522			Residual Chlorine (Y/N)
2			5720E01	5-7-20	0900	5-7-20	0800	26	26	5-7-20	0900	✓				
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
ADDITIONAL COMMENTS																
RELINQUISHED BY / AFFILIATION DATE																
5-7-20 10:00																
5-7-20																
5-8-20 10:05																
Y N V																

ADDITIONAL COMMENTS

RELINQUISHED BY / AFFILIATION
DATE
5-7-20 16:00
Signature: Phillip McCulloch

ACCEPTED BY / AFFILIATION
DATE
5-8-20 16:05
Signature: SCLW/1846

TEMP in C

Received on

Ice (Y/N)

Custody Sealed (Y/N)

Cooler (Y/N)

Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Phillip McCulloch
SIGNATURE of SAMPLER: Phillip McCulloch
DATE Signed: 5-7-20



Document Name:
Sample Condition Upon Receipt Form
Document No.:
F-FL-C-007 rev. 13

Document Revised:
May 30, 2018
Issuing Authority:
Pace Florida Quality Office

WO#: 35548749

Project #
Project Manager:
Client:

PM: LMH
Due Date: 05/20/20
CLIENT: BRUNCOWS

Date and Initials of person:

Examining contents: SPV

Label: J

Deliver: J

pH:

Thermometer Used: T338

Date: 5/8/20

Time: 1100

Initials: GER

State of Origin:

☐ For WV projects, all containers verified to $\leq 6^{\circ}\text{C}$

Cooler #1 Temp. $^{\circ}\text{C}$ 4.4 (Visual) -0.1 (Correction Factor) 4.3 (Actual)

Cooler #2 Temp. $^{\circ}\text{C}$ (Visual) (Correction Factor) (Actual)

Cooler #3 Temp. $^{\circ}\text{C}$ (Visual) (Correction Factor) (Actual)

Cooler #4 Temp. $^{\circ}\text{C}$ (Visual) (Correction Factor) (Actual)

Cooler #5 Temp. $^{\circ}\text{C}$ (Visual) (Correction Factor) (Actual)

Cooler #6 Temp. $^{\circ}\text{C}$ (Visual) (Correction Factor) (Actual)

☐ Samples on ice, cooling process has begun

☐ Samples on ice, cooling process has begun

☐ Samples on ice, cooling process has begun

☐ Samples on ice, cooling process has begun

☐ Samples on ice, cooling process has begun

☐ Samples on ice, cooling process has begun

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace

Shipping Method: ☐ First Overnight ☐ Priority Overnight ☒ Standard Overnight ☐ Ground ☐ International Priority

☐ Other

Billing: ☐ Recipient ☐ Sender ☒ Third Party ☐ Credit Card ☐ Unknown

Tracking # 3926 7226 950

Custody Seal on Cooler/Box Present: ☒ Yes ☐ No Seals intact: ☒ Yes ☐ No Ice: ☒ Wet ☐ Blue ☐ Dry ☐ None

Packing Material: ☒ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other

Samples shorted to lab (If Yes, complete) Shorted Date: Shorted Time: Qty:

Comments:

Chain of Custody Present	☒ Yes ☐ No ☐ N/A	Preservation Information: Preservative: _____ Lot #/Trace #: _____ Date: _____ Time: _____ Initials: _____
Chain of Custody Filled Out	☒ Yes ☐ No ☐ N/A	
Relinquished Signature & Sampler Name COC	☒ Yes ☐ No ☐ N/A	
Samples Arrived within Hold Time	☒ Yes ☐ No ☐ N/A	
Rush TAT requested on COC	☐ Yes ☒ No ☐ N/A	
Sufficient Volume	☒ Yes ☐ No ☐ N/A	
Correct Containers Used	☒ Yes ☐ No ☐ N/A	
Containers Intact	☒ Yes ☐ No ☐ N/A	
Sample Labels match COC (sample IDs & date/time of collection)	☐ Yes ☐ No ☐ N/A	
All containers needing acid/base preservation have been checked.	☒ Yes ☐ No ☐ N/A	
All Containers needing preservation are found to be in compliance with EPA recommendation:	☒ Yes ☐ No ☐ N/A	
Exceptions: VOA, Coliform, TOC, O&G, Carbamates		
Headspace in VOA Vials? (>6mm):	☐ Yes ☐ No ☒ N/A	
Trip Blank Present:	☐ Yes ☐ No ☒ N/A	

Client Notification/ Resolution:

Person Contacted: _____

Date/Time: _____

Comments/ Resolution (use back for additional comments):

Project Manager Review: _____

Date: _____ Page 10 of 10