

September 09, 2021

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

RE: Project: 1,4-DX-522 (Weekly)
Pace Project No.: 35660620

Dear Glenn PO Box:

Enclosed are the analytical results for sample(s) received by the laboratory on September 03, 2021. 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,



Bill White
bill.white@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.: 35660620

Pace Analytical Services Ormond Beach

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST

Alabama Certification #: 41320

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

Maine Certification #: FL01264

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

Ohio DEP 87780

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

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SAMPLE SUMMARY

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

Pace Project No.: 35660620

Lab ID	Sample ID	Matrix	Date Collected	Date Received
35660620001	090221-SO1	Water	09/02/21 10:10	09/03/21 11:36
35660620002	090221-EO1	Water	09/02/21 10:10	09/03/21 11:36

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SAMPLE ANALYTE COUNT

Project: 1,4-DX-522 (Weekly)
Pace Project No.: 35660620

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
35660620001	090221-SO1	EPA 522	CTB	2	PASI-O
35660620002	090221-EO1	EPA 522	CTB	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach

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ANALYTICAL RESULTS

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

Pace Project No.: 35660620

Sample: 090221-SO1									
Lab ID: 35660620001									
Collected: 09/02/21 10:10 Received: 09/03/21 11:36 Matrix: 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)	0.44	ug/L	0.20	0.12	1	09/08/21 15:00	09/09/21 12:04	123-91-1	
Surrogates									
1,4-Dioxane-d8 (S)	94	%	70-130		1	09/08/21 15:00	09/09/21 12:04		

Sample: 090221-EO1									
Lab ID: 35660620002									
Collected: 09/02/21 10:10 Received: 09/03/21 11:36 Matrix: 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)	0.49	ug/L	0.20	0.12	1	09/08/21 15:00	09/09/21 12:20	123-91-1	
Surrogates									
1,4-Dioxane-d8 (S)	98	%	70-130		1	09/08/21 15:00	09/09/21 12:20		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 1,4-DX-522 (Weekly)
Pace Project No.: 35660620

QC Batch: 760107	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: 35660620001, 35660620002

METHOD BLANK: 4154124 Matrix: Water
Associated Lab Samples: 35660620001, 35660620002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	0.12 U	0.20	0.12	09/09/21 15:16	
1,4-Dioxane-d8 (S)	%	108	70-130		09/09/21 15:16	

LABORATORY CONTROL SAMPLE & LCSD: 4154125 4154126

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	2	1.8	2.1	92	105	70-130	13	20	
1,4-Dioxane-d8 (S)	%				103	117	70-130			

LABORATORY CONTROL SAMPLE: 4154127

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	0.2	0.19 I	97	50-150	
1,4-Dioxane-d8 (S)	%			103	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.

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QUALIFIERS

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

Pace Project No.: 35660620

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.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

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

TNI - The NELAC Institute.

BATCH QUALIFIERS

Batch: 760307

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

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.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1,4-DX-522 (Weekly)
Pace Project No.: 35660620

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
35660620001	090221-SO1	EPA 522	760107	EPA 522	760307
35660620002	090221-EO1	EPA 522	760107	EPA 522	760307

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WO#: 35660620

35660620

CHAIN-OF-CUSTODY / Analytical Request
The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fir

1

Section A		Section B		Section C	
Required Client Information:		Required Project Information:		Invoice Information:	
Company: Brunswick County Water Systems	Report To: Glenn Walker	Company Name: See Section A	Attention: Accounts Payable	Company Name: See Section A	Accounts Payable
Address: PO Box 249	Copy To:	Purchase Order #:		Regulatory Agency	
Bolivia, NC 28422		Project Name: 1,4-Dx-522 (Weekly)		NC	
Email To: Glenn Walker		Project #: W007		State / Location	
Phone: 910-371-3490	Fax:	Matrix Code (see valid codes to left)		NC	
Requested Due Date: W007		SAMPLE TYPE (G=GRAB C=COMP)		Requested Analysis Filtered (Y/N)	

ITEM #	MATRIX CODE (A-Z, 0-9 / , -) One Character per box. Sample ids must be unique	COLLECTED		DATE	TIME	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
		START	END								
1	DA0221 -S01	9-2-21 10:30am	9-2-21 10:30am	9-2-21	10:30am	9-2-21	10:30am	TESTIMONY PACE	9/3/21	11:52	Y
2	DA0221 -E01	9-2-21 10:30am	9-2-21 10:30am	9-2-21	10:30am	9-2-21	10:30am	TESTIMONY PACE	9/3/21	11:52	Y
3											
4											
5											
6											

RELINQUISHED BY / AFFILIATION		DATE	TIME
[Signature]		9/1/20	6:00am
SAMPLER NAME AND SIGNATURE		DATE	TIME
PRINT Name of SAMPLER: Billy Barton		9-2-21	11:52
SIGNATURE of SAMPLER: [Signature]		9-2-21	11:52

SO1 is Raw Water (WT)
EO1 is Potable DWTR (DW)

TEMP in C: T-309
Received on: 9/3/21
Custody Sealed (Y/N): Y
Cooler (Y/N): Y
Intact (Y/N): Y



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

Sample Condition Upon Receipt Form (SCUR)
WO#: 35660620

Project #
Project Manager:
Client:

PM: WBW
Due Date: 09/16/21
CLIENT: BRUNCOWS

Date and Initials of person:
Examining contents: TW
Label: TW
Deliver: TW
pH: TW

Thermometer Used: T-389 Date: 9/13/21 Time: 36 Initials: KMF

State of Origin: _____ For WV projects, all containers verified to ≤6 °C

Cooler #1 Temp. °C 2.1 (Visual) +0.0 (Correction Factor) 2.1 (Actual) Samples on ice, cooling process has begun
Cooler #2 Temp. °C _____ (Visual) _____ (Correction Factor) _____ (Actual) Samples on ice, cooling process has begun
Cooler #3 Temp. °C _____ (Visual) _____ (Correction Factor) _____ (Actual) Samples on ice, cooling process has begun
Cooler #4 Temp. °C _____ (Visual) _____ (Correction Factor) _____ (Actual) Samples on ice, cooling process has begun
Cooler #5 Temp. °C _____ (Visual) _____ (Correction Factor) _____ (Actual) Samples on ice, cooling process has begun
Cooler #6 Temp. °C _____ (Visual) _____ (Correction Factor) _____ (Actual) Samples on ice, cooling process has begun

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____
Shipping Method: First Overnight Priority Overnight Standard Overnight Ground International Priority
 Other _____

Billing: Recipient Sender Third Party Credit Card Unknown

Tracking # _____

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

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution (use back for additional comments): _____

Project Manager Review: _____ Date: _____

Pace Container Order #705216

Addresses		Ship To	Return To:
Order By :			
Company	Brunswick County Water System	Company	Pace Analytical Ormond Beach
Contact	- Bottles, Glenn	Contact	Harvey, Lisa
Email	glenn.walker@brunswickcountync.gov	Email	lisa.harvey@pacelabs.com
Address	3954 Clearwell Dr. NE	Address	8 East Tower Circle
Address 2		Address 2	
City	Leland	City	Ormond Beach
State	NC Zip 28451	State	FL Zip 32174
Phone	910-371-3490	Phone	(386) 672-5668

Info							
Project Name	1,4-Dx-522 (Weekly)	Due Date	11/11/2020	Profile	9551-1	Quote	
Project Manager	Harvey, Llsa	Return Date		Carrier	FedEx Ground	Location	NC

Trip Blanks

Include Trip Blanks

Bottle Labels

Blank

Pre-Printed No Sample IDs

Pre-Printed With Sample IDs

Bottles

Boxed Cases

Individually Wrapped

Grouped By Sample ID/Matrix

Return Shipping Labels

No Shipper

With Shipper

Misc

Sampling Instructions

Custody Seal

Temp. Blanks

Coolers

Syringes

Extra Bubble Wrap

Short Hold/Rush Stickers

DI Water

USDA Regulated Soils

COC Options

Number of Blanks

Pre-Printed

# of Samples	Matrix	Test	Container	Total	# of	Lot #	Notes
2	WT	1,4-dioxane, method 522	1-1L Amber Glass, Sodlum sulfite & Na bisulfate	2	0		

Hazard Shipping Placard In Place : NO

*Sample receiving hours are Mon-Fri 8:00am-6:00pm and Sat 10:00am-6:00pm unless special arrangements are made with your project manager.

*Pace Analytical reserves the right to return hazardous, toxic, or radioactive samples to you.

*Pace Analytical reserves the right to charge for unused bottles, as well as cost associated with sample storage/disposal.

*Payment term are net 30 days.

*Please include the proposal number on the chain of custody to insure proper billing.

LAB USE:

Ship Date :

Prepared By:

Verified By:

Tracking Num:

Sample

weekly sampling; 2-locations per week; ; Special COC attached; ;

CLIENT USE (Optional):

Date Rec'd:

Received By:

Verified By:

Internal

download special COC