

November 11, 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.: 35590313

Dear Glenn PO Box:

Enclosed are the analytical results for sample(s) received by the laboratory on November 06, 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.: 35590313

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

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.: 35590313

Lab ID	Sample ID	Matrix	Date Collected	Date Received
35590313001	110520-S01	Water	11/05/20 10:30	11/06/20 10:50
35590313002	110520-E01	Drinking Water	11/05/20 10:30	11/06/20 10:50

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SAMPLE ANALYTE COUNT

Project: 1,4-Dx-522 (Weekly)
Pace Project No.: 35590313

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
35590313001	110520-S01	EPA 522	CTB	2	PASI-O
35590313002	110520-E01	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.: 35590313

Sample: 110520-S01		Lab ID: 35590313001		Collected: 11/05/20 10:30	Received: 11/06/20 10:50	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)	2.9	ug/L	0.20	0.12	1	11/09/20 16:46	11/10/20 17:27	123-91-1	
Surrogates									
1,4-Dioxane-d8 (S)	85	%	70-130		1	11/09/20 16:46	11/10/20 17:27		

Sample: 110520-E01		Lab ID: 35590313002		Collected: 11/05/20 10:30	Received: 11/06/20 10:50	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)	2.0	ug/L	0.21	0.12	1	11/09/20 16:46	11/10/20 17:43	123-91-1	
Surrogates									
1,4-Dioxane-d8 (S)	90	%	70-130		1	11/09/20 16:46	11/10/20 17:43		

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QUALITY CONTROL DATA

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

Pace Project No.: 35590313

QC Batch: 680162

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: 35590313001, 35590313002

METHOD BLANK: 3702248

Matrix: Water

Associated Lab Samples: 35590313001, 35590313002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	0.12 U	0.20	0.12	11/10/20 15:18	
1,4-Dioxane-d8 (S)	%	89	70-130		11/10/20 15:18	

LABORATORY CONTROL SAMPLE & LCSD: 3702249

3702996

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	20.3	17.1	18.1	84	90	70-130	6	20	
1,4-Dioxane-d8 (S)	%				90	86	70-130			

LABORATORY CONTROL SAMPLE: 3702250

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	0.2	0.24	118	50-150	
1,4-Dioxane-d8 (S)	%			87	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.: 35590313

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.

BATCH QUALIFIERS

Batch: 680703

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

ANALYTE QUALIFIERS

U Compound was analyzed for but not detected.

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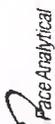
QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1,4-Dx-522 (Weekly)
Pace Project No.: 35590313

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
35590313001	110520-S01	EPA 522	680162	EPA 522	680703
35590313002	110520-E01	EPA 522	680162	EPA 522	680703

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WO# : 35590313

CHAIN-OF-CU:
The Chain-of-Custody

accurately.

Page: 1 Of 1

Section B

Required Client Information:

Company: Brunswick County Water Systems
Address: PO Box 249
Bolivia, NC 28422
Email To: Glenn Walker
Phone: 910-371-3490
Requested Due Date: W007

Invoice Information:

Report To: Glenn Walker
Copy To:
Purchase Order #:
Project Name: 1,4-Dx-522 (Weekly)
Project #:
Pace Project Manager: Lisa Harvey
Pace Profile #: 9551-1 (SO1) , -2 (EO1)

Regulatory Agency: NC
State / Location: NC

ITEM #	MATRIX CODE (see valid codes to left)	COLLECTED		DATE	TIME	DATE	TIME	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
		START	END											
1	WT G	11/5/2020	10:30am	11/5/2020	10:30am	1								line 1
2	DW G	11/5/2020	10:30am	11/5/2020	10:30am	1								line 2
3														
4														
5														
6														

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	<i>Thaddeus Hill</i>	10/29/2020		<i>CRS/PACE 11-6-20</i>	10/30		<i>Y N Y</i>

TEMP In C	
Received on	
ice (Y/N)	
Custody Sealed	
Cooler	
Samples Intact (Y/N)	

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: *Thaddeus Hill*
 SIGNATURE of SAMPLER: *Thaddeus Hill*
 Thaddeus Hill 11/5/2020

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



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# : 35590313
PM: LMH **Due Date: 11/18/20**
CLIENT: BRUNCOWS

(SCUR)

Project #
Project Manager:
Client:

Date and Initials of person:
Examining contents: CWS
Label: _____
Deliver: _____
pH: _____

Thermometer Used: T338 Date: 11-6-20 Time: 1112 Initials: KMF

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

- | | |
|---|--|
| Cooler #1 Temp.°C <u>1.8</u> (Visual) <u>+0.1</u> (Correction Factor) <u>1.7</u> (Actual) | <input type="checkbox"/> Samples on ice, cooling process has begun |
| Cooler #2 Temp.°C _____ (Visual) _____ (Correction Factor) _____ (Actual) | <input type="checkbox"/> Samples on ice, cooling process has begun |
| Cooler #3 Temp.°C _____ (Visual) _____ (Correction Factor) _____ (Actual) | <input type="checkbox"/> Samples on ice, cooling process has begun |
| Cooler #4 Temp.°C _____ (Visual) _____ (Correction Factor) _____ (Actual) | <input type="checkbox"/> Samples on ice, cooling process has begun |
| Cooler #5 Temp.°C _____ (Visual) _____ (Correction Factor) _____ (Actual) | <input type="checkbox"/> Samples on ice, cooling process has begun |
| Cooler #6 Temp.°C _____ (Visual) _____ (Correction Factor) _____ (Actual) | <input type="checkbox"/> 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 # 2985 9933 4974

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	<p>Preservation Information:</p> <p>Preservative: _____</p> <p>Lot #/Trace #: _____</p> <p>Date: _____ Time: _____</p> <p>Initials: _____</p>
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	
All Containers needing preservation are found to be in compliance with EPA recommendation:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Exceptions: VOA, Coliform, TOC, O&G, Carbamates		
Headspace in VOA Vials? (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	

Client Notification/ Resolution:
Person Contacted: _____ Date/Time: _____

Comments/ Resolution (use back for additional comments):

