

June 19, 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.: 35556253

Dear Glenn PO Box:

Enclosed are the analytical results for sample(s) received by the laboratory on June 12, 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,
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CERTIFICATIONS

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

Pace Project No.: 35556253

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

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SAMPLE SUMMARY

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

Pace Project No.: 35556253

Lab ID	Sample ID	Matrix	Date Collected	Date Received
35556253001	061120-S01	Drinking Water	06/11/20 07:10	06/12/20 10:15
35556253002	061120-E01	Drinking Water	06/11/20 07:10	06/12/20 10:15

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SAMPLE ANALYTE COUNT

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

Pace Project No.: 35556253

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
35556253001	061120-S01	EPA 522	TM2	2	PASI-O
35556253002	061120-E01	EPA 522	TM2	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.: 35556253

Sample: 061120-S01		Lab ID: 35556253001		Collected: 06/11/20 07:10		Received: 06/12/20 10:15		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)	0.15	I ug/L	0.21	0.13	1	06/18/20 12:29	06/19/20 13:15	123-91-1	
Surrogates									
1,4-Dioxane-d8 (S)	78	%	70-130		1	06/18/20 12:29	06/19/20 13:15		

Sample: 061120-E01		Lab ID: 35556253002		Collected: 06/11/20 07:10		Received: 06/12/20 10:15		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)	0.17	I ug/L	0.20	0.12	1	06/18/20 12:29	06/19/20 13:31	123-91-1	
Surrogates									
1,4-Dioxane-d8 (S)	83	%	70-130		1	06/18/20 12:29	06/19/20 13:31		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

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

Pace Project No.: 35556253

QC Batch:	641881	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: 35556253001, 35556253002

METHOD BLANK: 3490825 Matrix: Water

Associated Lab Samples: 35556253001, 35556253002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	0.12 U	0.20	0.12	06/19/20 09:43	
1,4-Dioxane-d8 (S)	%	93	70-130		06/19/20 09:43	

LABORATORY CONTROL SAMPLE: 3490826

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	20	18.4	92	70-130	
1,4-Dioxane-d8 (S)	%			97	70-130	

LABORATORY CONTROL SAMPLE: 3490827

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	0.2	0.17 I	87	50-150	
1,4-Dioxane-d8 (S)	%			92	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3490828 3490829

Parameter	Units	60339872005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,4-Dioxane (p-Dioxane)	ug/L	0.36	21.3	19.1	19.7	17.2	91	88	70-130	13	20	
1,4-Dioxane-d8 (S)	%						92	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.: 35556253

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

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

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

Pace Project No.: 35556253

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
35556253001	061120-S01	EPA 522	641881	EPA 522	642260
35556253002	061120-E01	EPA 522	641881	EPA 522	642260

REPORT OF LABORATORY ANALYSIS

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W0#: 355556253



355556253

CHAIN-OF-CUSTODY / Analytical Request Document

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

Required Client Information: Company: Brunswick County Water System Address: 3954 Cleanwell Dr. NE Leland, NC 28451 Email: glenn.walker@brunswickcountync.gov Phone: 910-371-3490 Requested Due Date:		Required Project Information: Report To: Glenn - Bottles Copy To: Purchase Order #: 1.4-Dx-522 (Weekly) Project Name: Project #:		Section C Invoice Information: Attention: Company Name: Address: Pace Quote: Pace Project Manager: lisa.harvey@paceclabs.com Pace Profile #: 9551-1		Page: 1 Of 1	
Regulatory Agency		State / Location		NC			

ITEM #	MATRIX Drinking Water Waste Water Product Oil Wipe Air Other Tissue	CODE DW WT P SL OL WP AR OT TS	SAMPLE ID One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives								Analyses Test Y/N	1,4-dioxane, method 522	Requested Analysis Filtered (Y/N)												Residual Chlorine (Y/N)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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ADDITIONAL COMMENTS		RELINQUISHED BY / AFFILIATION		DATE		TIME		ACCEPTED BY / AFFILIATION		DATE		TIME		SAMPLE CONDITIONS	
1.4-Dx-522 (Weekly)		SKW/pqcc		6/11/20		6:00		SKW/pqcc		6/12/20		10:05		4.1	

SAMPLER NAME AND SIGNATURE		DATE Signed: 6/11/20	
PRINT Name of SAMPLER: Billy Benton			
SIGNATURE of SAMPLER:			

	Document Name: Sample Condition Upon Receipt Form	Document Revised: May 30, 2018
	Document No.: F-FL-C-007 rev. 13	Issuing Authority: Pace Florida Quality Office

Sample Condition Upon Receipt Form (SCUR)

Project #
Project Manager:
Client:

WO# : 35556253

PM: LMH **Due Date: 06/24/20**
CLIENT: BRUNCOWS

Date and Initials of person:

Examining contents: SKW
Label: _____
Deliver: ✓
pH: _____

Thermometer Used: T-349

Date: 6/12/20

Time: 1031

Initials: AS

State of Origin: _____

☐ For WV projects, all containers verified to ≤6 °C

Cooler #1 Temp. °C 4.10 (Visual) 4.1 (Correction Factor) 4.1 (Actual)
Cooler #2 Temp. °C _____ (Visual) _____ (Correction Factor) _____ (Actual)
Cooler #3 Temp. °C _____ (Visual) _____ (Correction Factor) _____ (Actual)
Cooler #4 Temp. °C _____ (Visual) _____ (Correction Factor) _____ (Actual)
Cooler #5 Temp. °C _____ (Visual) _____ (Correction Factor) _____ (Actual)
Cooler #6 Temp. °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 ☐ Other _____

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

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

Tracking # 3937 6332 5914

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: _____