

March 05, 2018

Glenn Walker
Brunswick County Water Systems
3954 Clearwell Dr. NE
Leland, NC 28451

RE: Project: 1,4-Dx-522
Pace Project No.: 35376197

Dear Glenn Walker:

Enclosed are the analytical results for sample(s) received by the laboratory on February 23, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
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CERTIFICATIONS

Project: 1,4-Dx-522

Pace Project No.: 35376197

Ormond Beach Certification IDs

8 East Tower Circle, Ormond Beach, FL 32174
Alabama Certification #: 41320
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
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
Nevada Certification: FL NELAC Reciprocity
New Jersey Certification #: FL022
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
North Carolina Certification #: 12710
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
Wyoming Certification: FL NELAC Reciprocity
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

Pace Project No.: 35376197

Lab ID	Sample ID	Matrix	Date Collected	Date Received
35376197001	SO1-Raw	Drinking Water	02/22/18 13:30	02/23/18 11:20
35376197002	E01-Finished	Drinking Water	02/22/18 13:30	02/23/18 11:20

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SAMPLE ANALYTE COUNT

Project: 1,4-Dx-522
Pace Project No.: 35376197

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
35376197001	SO1-Raw	EPA 522	WFH	2	PASI-O
35376197002	E01-Finished	EPA 522	WFH	2	PASI-O

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ANALYTICAL RESULTS

Project: 1,4-Dx-522

Pace Project No.: 35376197

Sample: SO1-Raw **Lab ID: 35376197001** Collected: 02/22/18 13:30 Received: 02/23/18 11:20 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									
1,4-Dioxane (p-Dioxane)	2.7	ug/L	0.070	0.028	1	02/28/18 00:23	02/28/18 20:45	123-91-1	
Surrogates									
1,4-Dioxane-d8 (S)	71	%	70-130		1	02/28/18 00:23	02/28/18 20:45		

Sample: E01-Finished **Lab ID: 35376197002** Collected: 02/22/18 13:30 Received: 02/23/18 11:20 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									
1,4-Dioxane (p-Dioxane)	2.5	ug/L	0.070	0.028	1	02/28/18 00:23	03/01/18 10:12	123-91-1	
Surrogates									
1,4-Dioxane-d8 (S)	73	%	70-130		1	02/28/18 00:23	03/01/18 10:12		

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QUALITY CONTROL DATA

Project: 1,4-Dx-522
Pace Project No.: 35376197

QC Batch: 429076 Analysis Method: EPA 522
QC Batch Method: EPA 522 Analysis Description: 522 MSS 1,4 Dioxane
Associated Lab Samples: 35376197001, 35376197002

METHOD BLANK: 2333576 Matrix: Water
Associated Lab Samples: 35376197001, 35376197002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	0.028 U	0.070	0.028	02/28/18 16:00	
1,4-Dioxane-d8 (S)	%	73	70-130		02/28/18 16:00	

LABORATORY CONTROL SAMPLE & LCSD: 2333577

Parameter	Units	2334399								Qualifiers
		Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	
1,4-Dioxane (p-Dioxane)	ug/L	10	7.4	7.2	74	72	50-150	3	20	
1,4-Dioxane-d8 (S)	%				67	66	70-130			J(S0)

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2333579 2333580

Parameter	Units	60264360002										
		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			8.9	8.3					7	20	
1,4-Dioxane-d8 (S)	%					77	72	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

Pace Project No.: 35376197

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.

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.

LABORATORIES

PASI-O Pace Analytical Services - Ormond Beach

ANALYTE QUALIFIERS

U Compound was analyzed for but not detected.

J(S0) Estimated Value. Surrogate recovery outside laboratory control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1,4-Dx-522
Pace Project No.: 35376197

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
35376197001	SO1-Raw	EPA 522	429076	EPA 522	429437
35376197002	E01-Finished	EPA 522	429076	EPA 522	429437

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Document Name:
Sample Condition Upon Receipt Form
Document No.:
F-FL-C-007 rev. 12

Document Revised:
August 2, 2017
Issuing Authority:
Pace Florida Quality Office

WO# : 35376197 (SCUR)

Project # _____
Project Manager PM: LMH **Due Date:** 03/09/18
Client: CLIENT: BRUNCOWS

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

Thermometer Used: T301 **Date:** 2/23/18 **Time:** 1120

State of Origin: _____

Cooler #1 Temp. °C: 1.9 (Visual) 0 (Correction Factor) 1.9 (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 # 2422 5602 6508

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 type="checkbox"/> Yes <input checked="" 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 type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Rush TAT requested on COC	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Sufficient Volume	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct Containers Used	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Sample Labels match COC (sample IDs & date/time of collection)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
All containers needing acid/base preservation have been checked.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	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 type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" 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:** _____