

February 07, 2014

Alan Johnson
City Of Danville Water Treatment Plant
279 Park Avenue
Danville, VA 24541

RE: Project: Metals 200.8
Pace Project No.: 92188999

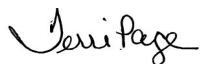
Dear Alan Johnson:

Enclosed are the analytical results for sample(s) received by the laboratory on February 06, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

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

Sincerely,



Terri Page
terri.page@pacelabs.com
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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

Project: Metals 200.8

Pace Project No.: 92188999

Ormond Beach Certification IDs

8 East Tower Circle, Ormond Beach, FL 32174
Alabama Certification #: 41320
Arizona Certification #: AZ0735
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
Massachusetts Certification #: M-FL1264
Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity
Montana Certification #: Cert 0074
Nebraska Certification: NE-OS-28-14
Nevada Certification: FL NELAC Reciprocity
New Hampshire Certification #: 2958
New Jersey Certification #: FL765
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
North Carolina Certification #: 12710
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
Washington Certification #: C955
West Virginia Certification #: 9962C
Wisconsin Certification #: 399079670
Wyoming (EPA Region 8): FL NELAC Reciprocity

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Pace Analytical Services, Inc.
205 East Meadow Road - Suite A
Eden, NC 27288
(336)623-8921

Pace Analytical Services, Inc.
2225 Riverside Dr.
Asheville, NC 28804
(828)254-7176

Pace Analytical Services, Inc.
9800 Kinsey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

SAMPLE ANALYTE COUNT

Project: Metals 200.8
Pace Project No.: 92188999

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92188999001	Ballow Park	EPA 200.8	HEA	7	PASI-O

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ANALYTICAL RESULTS

Project: Metals 200.8

Pace Project No.: 92188999

Sample: Ballow Park		Lab ID: 92188999001		Collected: 02/06/14 14:00		Received: 02/06/14 16:17		Matrix: Water	
Parameters		Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8							
Arsenic	ND ug/L	1.0	1	02/07/14 11:45	02/07/14 17:08	7440-38-2			
Cadmium	ND ug/L	0.10	1	02/07/14 11:45	02/07/14 17:08	7440-43-9			
Chromium	ND ug/L	1.0	1	02/07/14 11:45	02/07/14 17:08	7440-47-3			
Copper	15.0 ug/L	1.0	1	02/07/14 11:45	02/07/14 17:08	7440-50-8			
Lead	4.4 ug/L	1.0	1	02/07/14 11:45	02/07/14 17:08	7439-92-1			
Selenium	ND ug/L	1.0	1	02/07/14 11:45	02/07/14 17:08	7782-49-2			
Zinc	29.9 ug/L	5.0	1	02/07/14 11:45	02/07/14 17:08	7440-66-6			

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QUALITY CONTROL DATA

Project: Metals 200.8

Pace Project No.: 92188999

QC Batch: MPRP/16964

Analysis Method: EPA 200.8

QC Batch Method: EPA 200.8

Analysis Description: 200.8 MET

Associated Lab Samples: 92188999001

METHOD BLANK: 825133

Matrix: Water

Associated Lab Samples: 92188999001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	ug/L	ND	1.0	02/07/14 15:50	
Cadmium	ug/L	ND	0.10	02/07/14 15:50	
Chromium	ug/L	ND	1.0	02/07/14 15:50	
Copper	ug/L	ND	1.0	02/07/14 15:50	
Lead	ug/L	ND	1.0	02/07/14 15:50	
Selenium	ug/L	ND	1.0	02/07/14 15:50	
Zinc	ug/L	ND	5.0	02/07/14 15:50	

LABORATORY CONTROL SAMPLE: 825134

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	50	49.7	99	85-115	
Cadmium	ug/L	5	4.9	98	85-115	
Chromium	ug/L	50	48.1	96	85-115	
Copper	ug/L	50	50.7	101	85-115	
Lead	ug/L	50	49.9	100	85-115	
Selenium	ug/L	50	51.7	103	85-115	
Zinc	ug/L	250	251	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 825135

825136

Parameter	Units	92189013002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Arsenic	ug/L	ND	50	50	47.1	47.7	92	93	70-130	1	
Cadmium	ug/L	ND	5	5	4.7	4.7	95	94	70-130	1	
Chromium	ug/L	ND	50	50	48.6	49.7	93	95	70-130	2	
Copper	ug/L	1.6	50	50	49.9	51.0	95	97	70-130	2	
Lead	ug/L	ND	50	50	49.7	50.0	97	98	70-130	.6	
Selenium	ug/L	ND	50	50	46.1	47.2	91	94	70-130	2	
Zinc	ug/L	5.0	250	250	235	240	92	94	70-130	2	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 825137

825138

Parameter	Units	92188909003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Arsenic	ug/L	ND	50	50	49.5	49.6	99	99	70-130	.3	
Cadmium	ug/L	ND	5	5	4.7	4.7	94	94	70-130	.2	
Chromium	ug/L	1.2	50	50	49.8	49.5	97	97	70-130	.7	

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QUALITY CONTROL DATA

Project: Metals 200.8

Pace Project No.: 92188999

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 825137 825138											
Parameter	Units	92188909003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Copper	ug/L	1.3	50	50	50.5	51.0	98	99	70-130	.9	
Lead	ug/L	ND	50	50	48.4	48.2	97	96	70-130	.4	
Selenium	ug/L	ND	50	50	50.4	50.3	100	100	70-130	.08	
Zinc	ug/L	ND	250	250	246	247	97	98	70-130	.6	

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QUALIFIERS

Project: Metals 200.8

Pace Project No.: 92188999

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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.

Acid preservation may not be appropriate for 2-Chloroethylvinyl ether, Styrene, and Vinyl chloride.

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

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Metals 200.8

Pace Project No.: 92188999

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92188999001	Ballow Park	EPA 200.8	MPRP/16964	EPA 200.8	ICPM/6854

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Danville WTP	Report To:	Alan Johnson	Attention:	
Address:	279 Park Ave	Copy To:		Company Name:	
Email To:	John SAE ci. danville. va.us	Purchase Order No.:		Address:	
Phone:	434-799-6473	Project Name:		Pace Quote Reference:	
Requested Due Date/TAT:		Project Number:		Pace Project Manager:	
				Pace Profile #:	

Section D Required Client Information		Section E Requested Analysis Filtered (Y/N)	
Matrix Codes MATRIX / CODE	MATRIX CODE	Y	N
Drinking Water Water Waste Water Product Soil/Solid Oil Wipe Air Tissue Other	DW WT WW P SL OL WP AR TS OT		
SAMPLE ID (A-Z, 0-9 / . -) Sample IDs MUST BE UNIQUE		Residual Chlorine (Y/N)	
1 Ballou Park (EP)			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

Section F Requested Analysis Filtered (Y/N)		Section G Requested Analysis Filtered (Y/N)	
Y	N	Y	N
Analysis Test	Analysis Test	Analysis Test	Analysis Test
Unpreserved	Unpreserved	Unpreserved	Unpreserved
H ₂ SO ₄	H ₂ SO ₄	H ₂ SO ₄	H ₂ SO ₄
HNO ₃	HNO ₃	HNO ₃	HNO ₃
HCl	HCl	HCl	HCl
NaOH	NaOH	NaOH	NaOH
Na ₂ S ₂ O ₃	Na ₂ S ₂ O ₃	Na ₂ S ₂ O ₃	Na ₂ S ₂ O ₃
Methanol	Methanol	Methanol	Methanol
Other	Other	Other	Other
# OF CONTAINERS		# OF CONTAINERS	
1	1	1	1
SAMPLE TEMP AT COLLECTION		SAMPLE TEMP AT COLLECTION	
26/14 1400	26/14 1400	26/14 1400	26/14 1400
COLLECTED		COLLECTED	
COMPOSITE START	COMPOSITE END/GRAB	COMPOSITE START	COMPOSITE END/GRAB
SAMPLE TYPE (G=GRAB C=COMP)		SAMPLE TYPE (G=GRAB C=COMP)	
G	G	G	G
MATRIX CODE (see valid codes to left)		MATRIX CODE (see valid codes to left)	
DN	DN	DN	DN
RELINQUISHED BY / AFFILIATION		RELINQUISHED BY / AFFILIATION	
David Stiles	David Stiles	David Stiles	David Stiles
2/6/14	2/6/14	2/6/14	2/6/14
1532	1532	1532	1532
DATE		DATE	
2/6/14	2/6/14	2/6/14	2/6/14
TIME		TIME	
1532	1532	1532	1532
ACCEPTED BY / AFFILIATION		ACCEPTED BY / AFFILIATION	
David Stiles	David Stiles	David Stiles	David Stiles
2/6/14	2/6/14	2/6/14	2/6/14
DATE		DATE	
2/6/14	2/6/14	2/6/14	2/6/14
TIME		TIME	
1532	1532	1532	1532
SAMPLE CONDITIONS		SAMPLE CONDITIONS	
Temp in °C	Temp in °C	Temp in °C	Temp in °C
2.0	2.0	2.0	2.0
Received on		Received on	
2/6/14	2/6/14	2/6/14	2/6/14
Custody		Custody	
N	N	N	N
Sealed Cooler		Sealed Cooler	
N	N	N	N
Samples Intact		Samples Intact	
Y	Y	Y	Y

Johns D. E., Danville, Va. U.S.

[illegible]

SAMPLER NAME AND SIGNATURE PRINT Name of SAMPLER: <u>David Giles</u> SIGNATURE of SAMPLER: <u>D. Giles</u>		DATE Signed (MM/DD/YY): <u>2/6/14</u>	
Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

	Document Name: Sample Condition Upon Receipt (SCUR)	Document Revised: March 13, 2013
	Document No.: F-EDN-CS-003-rev.09	Page 1 of 2
		Issuing Authorities: Pace Eden Quality Office

Client Name: Danville WTP

Where Received: ☐ Huntersville ☐ Asheville ☒ Eden ☐ Raleigh

Courier (circle): Fed Ex UPS USPS Client Commercial Pace Other _____

Custody Seal on Cooler/Box Present: ☐ yes ☐ no Seals Intact: ☐ yes ☐ no

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

Thermometer Used: IR Gun ED007

Type of Ice: Wet Blue None ☒ Samples on ice, cooling process has begun

Temp Correction Factor: Add Subtract 0.1 °C

Corrected Cooler Temp.: 2.0 °C Biological Tissue is Frozen: Yes No N/A

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 2/6/14

		Comments:
Chain of Custody Present:	☒ Yes ☐ No ☐ N/A	1.
Chain of Custody Filled Out:	☒ Yes ☐ No ☐ N/A	2.
Chain of Custody Relinquished:	☒ Yes ☐ No ☐ N/A	3.
Sampler Name & Signature on COC:	☒ Yes ☐ No ☐ N/A	4.
Samples Arrived within Hold Time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time Analysis (<72hr):	☒ Yes ☐ No ☐ N/A	6.
Rush Turn Around Time Requested:	☒ Yes ☐ No ☐ N/A	7.
Sufficient Volume:	☒ Yes ☐ No ☐ N/A	8.
Correct Containers Used:	☒ Yes ☐ No ☐ N/A	9.
-Pace Containers Used:	☒ Yes ☐ No ☐ N/A	
Containers Intact:	☒ Yes ☐ No ☐ N/A	10.
Filtered volume received for Dissolved tests	☐ Yes ☐ No ☒ N/A	11.
Sample Labels match COC:	☐ Yes ☐ No ☐ N/A	12.
-Includes date/time/ID/Analysis Matrix:	<u>0~</u>	
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☒ Yes ☐ No ☐ N/A	C
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐ Yes ☐ No	Initial when completed
Samples checked for dechlorination:	☐ Yes ☐ No ☒ N/A	14.
Headspace in VOA Vials (>6mm):	☐ Yes ☐ No ☒ N/A	15.
Trip Blank Present:	☐ Yes ☐ No ☒ N/A	16.
Trip Blank Custody Seals Present	☐ Yes ☐ No ☒ N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Field Data Required? Y / N

Comments/ Resolution: _____

SCURF Review: <u>JP</u>	Date: <u>2/6/14</u>
SRF Review: _____	Date: _____

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

Place label here
OR
Handwrite project number (if no label available)

	Document Name: Sample Condition Upon Receipt (SCUR)	Document Revised: March 13, 2013
	Document No.: F-EDN-CS-003-rev.09	Page 1 of 2
		Issuing Authorities: Pace Eden Quality Office

Client Name: Danville WTP

Where Received: ☐ Huntersville ☐ Asheville ☒ Eden ☐ Raleigh

Courier (circle): Fed Ex ☐ UPS ☐ USPS ☒ Client ☐ Commercial ☐ Pace Other ☐

Custody Seal on Cooler/Box Present: ☐ yes ☐ no Seals Intact: ☐ yes ☐ no

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

Thermometer Used: IR Gun ED007

Type of Ice: Wet ☐ Blue ☒ None

☒ Samples on ice, cooling process has begun

Temp Correction Factor: Add/ Subtract 0.1 C

Corrected Cooler Temp.: 2.0 C

Biological Tissue is Frozen: Yes No N/A

Date and Initials of person examining contents: 2/6/14

Temp should be above freezing to 6°C

Comments:

Chain of Custody Present:	☒ Yes ☐ No ☐ N/A	1.
Chain of Custody Filled Out:	☒ Yes ☐ No ☐ N/A	2.
Chain of Custody Relinquished:	☐ Yes ☐ No ☐ N/A	3.
Sampler Name & Signature on COC:	☐ Yes ☐ No ☐ N/A	4.
Samples Arrived within Hold Time:	☒ Yes ☐ No ☐ N/A	5.
Short Hold Time Analysis (<72hr):	☒ Yes ☐ No ☐ N/A	6.
Rush Turn Around Time Requested:	☒ Yes ☐ No ☐ N/A	7.
Sufficient Volume:	☒ Yes ☐ No ☐ N/A	8.
Correct Containers Used:	☒ Yes ☐ No ☐ N/A	9.
-Pace Containers Used:	☒ Yes ☐ No ☐ N/A	
Containers Intact:	☒ Yes ☐ No ☐ N/A	10.
Filtered volume received for Dissolved tests	☐ Yes ☐ No ☒ N/A	11.
Sample Labels match COC:	☐ Yes ☐ No ☐ N/A	12.
-Includes date/time/ID/Analysis Matrix:	<u>0.1</u>	
All containers needing preservation have been checked.	☒ Yes ☐ No ☐ N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☒ Yes ☐ No ☐ N/A	C
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐ Yes ☐ No	Initial when completed
Samples checked for dechlorination:	☐ Yes ☐ No ☒ N/A	14.
Headspace in VOA Vials (>6mm):	☐ Yes ☐ No ☒ N/A	15.
Trip Blank Present:	☐ Yes ☐ No ☒ N/A	16.
Trip Blank Custody Seals Present	☐ Yes ☐ No ☒ N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

SCURF Review:	<u>BLE</u>	Date:	<u>2/7/14</u>
SRF Review:	<u>BLE</u>	Date:	<u>2/7/14</u>

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

Place label here
OR
Handwrite project number (if no label available)