



Environmental and Laboratory Services

Dover Location:
90 1/2 West Blackwell St., Dover, NJ 07801
Phone: (973) 989-0010, Fax (973) 989-0156

Marlboro Location:
8A Railroad Ave, Marlboro, NJ 07746
Phone: (732) 308-3500, Fax (732) 308-3503

Date: October 22, 2020
Client: Waterford Elementary School
Address: 1106 Old White Horse Pike
Waterford, NJ 08089

PWSID#: NJ0435375
Project Location:

Analytical Results

Table with sample details: Sample Matrix (Drinking Water), Sample Location (POE:Tap in Treatment), Sampled By (C. LeFave), Sample Date/Time (9/21/2020 12:00), Lab Sample Number (20091427-001), Customer Sample Number.

Table with 10 columns: Parameters, Method, Results, Units, NJDEP Limit, Date Analyzed, Time Analyzed, Analyst, Reporting Limit, Dilution Factor. Rows include Gross Alpha, Ra-226, Ra-228, and Total Radium.

NJ Lab ID# 14013 (Dover)
NJ Lab ID# 13033 (Marlboro)

NJDEP Limit for free and/or total chlorine does not apply to non-chlorinated samples.
Any method followed by an asterisk (*) was analyzed by the Agra-Marlboro laboratory.
All other methods, unless otherwise specified, were analyzed by the Agra-Dover laboratory.

I certify that these samples were analyzed in accordance with procedures approved by the New Jersey Department of Environmental Protection.

Susan VanVeen
Susan VanVeen, Laboratory Manager

October 22, 2020

October 09, 2020

Subcontract
Agra Environmental
90 1/2 West Blackwell Street
Dover, NJ 07801

RE: Project: Waterford Elem/20091427
Pace Project No.: 30383501

Dear Subcontract:

Enclosed are the analytical results for sample(s) received by the laboratory on September 22, 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 - Greensburg

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

Sincerely,



Megan A. Rager
megan.rager@pacelabs.com
(724)850-5600
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Waterford Elem/20091427
Pace Project No.: 30383501

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Waterford Elem/20091427

Pace Project No.: 30383501

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30383501001	POE:Tap in Treatment WL002003	Drinking Water	09/21/20 12:00	09/22/20 08:30

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SAMPLE ANALYTE COUNT

Project: Waterford Elem/20091427

Pace Project No.: 30383501

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30383501001	POE:Tap in Treatment WL002003	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		ECLS-R-GA Rev8	ERT	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Waterford Elem/20091427

Pace Project No.: 30383501

Method: EPA 903.1

Description: 903.1 Radium 226

Client: Agra Environmental Laboratories

Date: October 09, 2020

General Information:

1 sample was analyzed for EPA 903.1 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Waterford Elem/20091427

Pace Project No.: 30383501

Method: EPA 904.0

Description: 904.0 Radium 228

Client: Agra Environmental Laboratories

Date: October 09, 2020

General Information:

1 sample was analyzed for EPA 904.0 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Waterford Elem/20091427
Pace Project No.: 30383501

Method: ECLS-R-GA Rev8
Description: ECLS-R-GA
Client: Agra Environmental Laboratories
Date: October 09, 2020

General Information:

1 sample was analyzed for ECLS-R-GA Rev8 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

- H1: Analysis conducted outside the EPA method holding time.
- POE: Tap in Treatment WL002003 (Lab ID: 30383501001)

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 414945

1c: The value reported as the MDC is actually the SDWA DL as required by the method.

Analysis completion date and time is 09/23/2020 @ 10:47 EST.

- BLANK (Lab ID: 2006834)
- Gross Alpha

2c: The value reported as the MDC is actually the SDWA DL as required by the method.

Analysis completion date and time is 09/23/2020 @ 10:50 EST.

- POE: Tap in Treatment WL002003 (Lab ID: 30383501001)
- Gross Alpha

3c: The value reported as the MDC is actually the SDWA DL as required by the method.

Analysis completion date and time is 09/24/2020 @ 08:08 EST.

- BLANK (Lab ID: 2006834)
- Gross Alpha

4c: The value reported as the MDC is actually the SDWA DL as required by the method.

Analysis completion date and time is 09/24/2020 @ 08:09 EST.

- POE: Tap in Treatment WL002003 (Lab ID: 30383501001)
- Gross Alpha

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Waterford Elem/20091427

Pace Project No.: 30383501

Sample: POE:Tap in Treatment **Lab ID:** 30383501001 Collected: 09/21/20 12:00 Received: 09/22/20 08:30 Matrix: Drinking Water
WL002003
PWS: NJ0435375 Site ID: WL002003 Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.131 ± 0.315 (0.609) C:NA T:85%	pCi/L	10/06/20 12:43	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.683 ± 0.412 (0.808) C:67% T:83%	pCi/L	10/07/20 10:37	15262-20-1	
Pace Analytical Services - Greensburg						
Gross Alpha	ECLS-R-GA Rev8	7.45 ± 2.45 (1.45) C:NA T:NA	pCi/L	09/23/20 09:00	12587-46-1	2c
Gross Alpha	ECLS-R-GA Rev8	1.03 ± 1.31 (1.43) C:NA T:NA	pCi/L	09/24/20 06:39	12587-46-1	4c,H1

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Waterford Elem/20091427

Pace Project No.: 30383501

QC Batch: 415431

Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1

Analysis Description: 903.1 Radium-226

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30383501001

METHOD BLANK: 2009031

Matrix: Water

Associated Lab Samples: 30383501001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.000 ± 0.280 (0.608) C:NA T:91%	pCi/L	10/06/20 12:13	

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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Waterford Elem/20091427

Pace Project No.: 30383501

QC Batch: 415432	Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0	Analysis Description: 904.0 Radium 228
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30383501001

METHOD BLANK: 2009032	Matrix: Water
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Associated Lab Samples: 30383501001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.604 ± 0.340 (0.605) C:70% T:93%	pCi/L	10/07/20 11:08	

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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QUALITY CONTROL - RADIOCHEMISTRY

Project: Waterford Elem/20091427

Pace Project No.: 30383501

QC Batch: 414945	Analysis Method: ECLS-R-GA Rev8
QC Batch Method: ECLS-R-GA Rev8	Analysis Description: ECLS-R-GA
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30383501001

METHOD BLANK: 2006834 Matrix: Water

Associated Lab Samples: 30383501001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Gross Alpha	0.187 ± 0.524 (0.691) C:NA T:NA	pCi/L	09/24/20 06:38	3c
Gross Alpha	3.32 ± 1.47 (0.670) C:NA T:NA	pCi/L	09/23/20 09:17	1c

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.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Waterford Elem/20091427

Pace Project No.: 30383501

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

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

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.

Act - Activity

Unc - Uncertainty: For Safe Drinking Water Act (SDWA) analyses, the reported Unc. is the calculated Count Uncertainty (95% confidence interval) using a coverage factor of 1.96. For all other matrices (non-SDWA), the reported Unc. is the calculated Expanded Uncertainty (aka Combined Standard Uncertainty, CSU), reported at the 95% confidence interval using a coverage factor of 1.96.

Gamma Spec: The Unc. reported for all gamma-spectroscopy analyses (EPA 901.1), is the calculated Expanded Uncertainty (CSU) at the 95.4% confidence interval, using a coverage factor of 2.0.

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

- | | |
|----|--|
| 1c | The value reported as the MDC is actually the SDWA DL as required by the method.
Analysis completion date and time is 09/23/2020 @ 10:47 EST. |
| 2c | The value reported as the MDC is actually the SDWA DL as required by the method.
Analysis completion date and time is 09/23/2020 @ 10:50 EST. |
| 3c | The value reported as the MDC is actually the SDWA DL as required by the method.
Analysis completion date and time is 09/24/2020 @ 08:08 EST. |
| 4c | The value reported as the MDC is actually the SDWA DL as required by the method.
Analysis completion date and time is 09/24/2020 @ 08:09 EST. |
| H1 | Analysis conducted outside the EPA method holding time. |

REPORT OF LABORATORY ANALYSIS

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NO#: 30383501



Page: _____ of _____

Section A
 Required Client Information:
 Company: Agra Environmental
 Address: 90 1/2 West Blackwell St.
 Dover, NJ 07801
 Email To: subcontract@agra.us
 Phone: 973-989-0010 Fax: 973-989-0156
 Requested Due Date/TAT: Standard

Section B
 Required Project Information:
 Report To: Joe White
 Copy To: subcontract@agra.us
 Purchase Order No.:
 Project Name: Waterford Elem/20091427
 Project Number: NJ0435375

Section C
 Invol. Accounting Department
 Company Name: Same as Section A
 Address:
 Pace Quote Reference:
 Pace Project Manager:
 Pace Profile #: AGRA

REGULATORY AGENCY
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER
 Site Location: NJ
 STATE: NJ

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WATER WT WASTE WATER WW PRODUCT P SOIL/SOLID SL OIL OL WIPE WP AIR AR OTHER OT TISSUE TS	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	Preservatives NaOH HCl HNO ₃ H ₂ SO ₄ Unpreserved	Analysis Test RA228, RA226 Gross Alpha ECLS-R-GA R8	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
			COMPOSITE START DATE TIME	COMPOSITE END/GRAB DATE TIME								
1	POE: Tap in Treatment WL002003		9/14/09	9/14/09	G	DW	3					001
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												

ADDITIONAL COMMENTS
 Please submit to EZSDWIS
 Direct ship to PACE PA Overnight (48 hour Gross Alpha)

RELINQUISHED BY / AFFILIATION
 DATE TIME
 9-22-2009 0830 N/A N N Y

ACCEPTED BY / AFFILIATION
 DATE TIME
 Ben Thompson

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: C. LeFave
 SIGNATURE of SAMPLER:
 DATE Signed (MM/DD/YYYY):

Temp in °C
Received on Ice (Y/N)
Cooler (Y/N)
Sturdy Sealed (Y/N)
Samples Intact (Y/N)

Pittsburgh Lab Sample Condition Upon Receipt



Client Name: Agfa

Project # #-30383501

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: 1Z844 26V 15 9880 6084

Label	<u>BLM</u>
LIMS Login	<u>BLM</u>

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Thermometer Used N/A Type of Ice: Wet Blue None

Cooler Temperature Observed Temp N/A °C Correction Factor: _____ °C Final Temp: _____ °C

Temp should be above freezing to 6°C

pH paper Lot#	Date and Initials of person examining contents: <u>BLM 9-22-2020</u>
<u>1000401</u>	

Comments:

	Yes	No	N/A	
Chain of Custody Present:	/			1.
Chain of Custody Filled Out:	/			2.
Chain of Custody Relinquished:	/			3.
Sampler Name & Signature on COC:		/		4. <u>no signature</u>
Sample Labels match COC:	/			5.
-Includes date/time/ID Matrix: <u>DW</u>				
Samples Arrived within Hold Time:	/			6.
Short Hold Time Analysis (<72hr remaining):	/			7.
Rush Turn Around Time Requested:		/		8.
Sufficient Volume:	/			9.
Correct Containers Used:	/			10.
-Pace Containers Used:		/		
Containers Intact:	/			11.
Orthophosphate field filtered			/	12.
Hex Cr Aqueous sample field filtered			/	13.
Organic Samples checked for dechlorination:			/	14.
Filtered volume received for Dissolved tests			/	15.
All containers have been checked for preservation.	/			16.
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix				<u>PhC2</u>
All containers meet method preservation requirements.	/			Initial when completed <u>BLM</u> Date/time of preservation
				Lot # of added preservative
Headspace in VOA Vials (>6mm):			/	17.
Trip Blank Present:			/	18.
Trip Blank Custody Seals Present			/	
Rad Samples Screened < 0.5 mrem/hr	/			Initial when completed: <u>BLM</u> Date: <u>9-22-2020</u>

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____

Comments/ Resolution: _____

A check in this box indicates that additional information has been stored in ereports.

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)

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.