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March 31, 2016

Ms. Kelley Keenan
Environmental Testing Solutions, Inc.
351 Depot Street
Asheville, NC 28801
USA

Dear Kelley,

Thank you for participating in the WP0216 Water Pollution Proficiency Testing Study. Enclosed is your final report, which has been carefully reviewed by the PT specialists at Phenova. This report presents some additional sections and features which will give you more information on the study data for the standards that were reported by your laboratory and more information regarding the overall performance of your laboratory in relation to other study participants.

The enclosed report is in two sections, the "Evaluation Report" and the "Statistical Report". The "Evaluation Report" contains the evaluation of your reported data as well the reported method, analysis date and analyst. The "Evaluation Report" is an updated and enhanced version of the reports you previously received at the conclusion of our PT studies. The "Statistical Report" contains your passing percentage as well as statistics from the study for the analytes reported by your laboratory.

For any analyte falling outside the established acceptance limits, our PT management staff would like to assist you in determining the most appropriate course of corrective action for your facility. Please contact us at any time if we may be of service to you.

Thank you again for participating in the WP0216 Water Pollution Proficiency Testing Study. We appreciate working with you and look forward to our next study. If you have any questions, please call us at 866-942-2978.

Report Definitions:

Assigned Value

The Assigned Value is determined from the study mean, gravimetric and volumetric true concentration of an analyte to be analyzed, calculation and/or an appropriate reference value as stipulated in the EPA National Standards for Water Proficiency Testing Studies Criteria Document (current version), the National Environmental Laboratory Accreditation Conference (NELAC) criteria (ref: NELAC FOT tables, NELAC PT Committee) and other documents distributed by accrediting agencies as applicable.

Evaluation Limits

Acceptance Limits are derived from fixed limits, coefficients, constants and calculations stipulated in the EPA National Standards for Water Proficiency Testing Studies Criteria Documents (current version), the National Environmental Laboratory Accreditation Conference (NELAC) criteria (ref: NELAC PT FOT tables, NELAC PT Committee) and other documents distributed by accrediting agencies as applicable.

Evaluation

<i>Acceptable</i>	The reported value falls within the Acceptance Limits.
<i>Not Acceptable</i>	The reported value falls outside the Acceptance Limits.
<i>No Evaluation</i>	The reported value is non-numeric and can not be evaluated.
<i>NR</i>	As required by the NELAC standards and requested by state authorities, any analyte purchased but not reported by your facility is listed as NR (Not Reported).

Study Mean and Standard Deviation

The mean and standard deviation are calculated from the study data using robust statistical calculations when possible. Other statistical calculations may be used if robust statistical calculations are not possible. The displayed values are independent of any statistical calculations required for the calculation of the analyte evaluation limits.

This report must not be reproduced except in full, without the written approval of Phenova.

This report must not be used to claim product certification, approval, or endorsement by the American Association for Laboratory Accreditation (A2LA) or any agency of the federal government.



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State Regulatory Agency Request(s):

Phenova has been authorized to send a copy of your WP0216 final results to the following state agencies:
KY, NC and SC

Other Regulatory Agency Request(s):

No requests were made to send a copy of your WP0216 final results to an agency.

Third Party Request(s):

No requests were made to send a copy of your WP0216 final results to a third party.

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Final Report - Water Pollution Proficiency Testing

Study: WP0216

Opening Date: February 8, 2016 - Closing Date: March 24, 2016

Laboratory: Environmental Testing Solutions, Inc.
351 Depot Street
Asheville, NC 28801
USA

Contact: Ms. Kelley Keenan
828-350-9364

EPA Lab ID: NC01230

Demand (PT-DEM-WP) Lot #: 8164-07

NELAC Code	Analyte	Analysis Date	Analyst	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
1530	BOD	2/18/2016	KEK	20135017	SM 5210 B-2001, Rev. 2011	mg/L	35.6	17	17.4 - 59.4	Not Acceptable
1555	CBOD	2/24/2016	KEK	20135017	SM 5210 B-2001, Rev. 2011	mg/L	35.6	18	13.1 - 59.4	Acceptable
1565	COD	2/18/2016	KEK	60003001	Hach 8000	mg/L	55.2	<50	37.8 - 70.3	Acceptable
2040	TOC					mg/L	21.8		17.7 - 26.0	NR

Minerals 1 (PT-MIN1-WP) Lot #: 8164-08

NELAC Code	Analyte	Analysis Date	Analyst	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
1505	Total Alkalinity(as CaCO ₃)	2/26/2016	KEK	20045414	SM 2320 B-1997, Rev. 2011	mg/L	378	356	321 - 435	Acceptable
1540	Bromide					mg/L	2.06		1.50 - 2.55	NR
1575	Chloride	2/26/2016	KEK	20079010	SM 4500-Cl C-1997, Rev. 2011	mg/L	174	167	154 - 195	Acceptable
1730	Fluoride					mg/L	1.12		0.864 - 1.36	NR
2000	Sulfate	3/17/2016	KEK	20132836	SM 4500-SO ₄ ⁻ E-1997, Rev.2011	mg/L	12.0	11	8.97 - 14.4	Acceptable

Additional State Specific Analytes

1813	Total Inorganic Carbon					mg/L	90.3		72.2 - 108	NR
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Minerals 2 - Hardness (PT-MIN2-WP) Lot #: 8164-102

NELAC Code	Analyte	Analysis Date	Analyst	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
1035	Calcium					mg/L	37.0		31.5 - 42.6	NR
1550	Calcium Hardness (as CaCO ₃)					mg/L	92.5		78.6 - 106	NR
1755	Total Hardness (as CaCO ₃)	3/4/2016	KEK	20047410	SM 2340 C-1997, Rev. 2011	mg/L	134	126	114 - 155	Acceptable
1085	Magnesium					mg/L	10.2		8.66 - 11.7	NR
1125	Potassium					mg/L	33.5		26.8 - 40.2	NR
1155	Sodium					mg/L	39.5		31.6 - 47.4	NR

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EPA Lab ID: NC01230

Specific Conductance (PT-COND-WP)										Lot #: 8164-72
NELAC Code	Analyte	Analysis Date	Analyst	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
1610	Specific Conductance (25°C)	2/19/2016	KEK	20048413	SM 2510 B-1997, Rev. 2011	µmhos/cm	725	720	653 - 798	Acceptable
Solids (PT-SOL-WP)										Lot #: 8164-09
NELAC Code	Analyte	Analysis Date	Analyst	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
1955	Total Dissolved Solids at 180° (TFR)	2/17/2016	KEK	20050424	SM 2540 C-1997, Rev. 2011	mg/L	496	582	447 - 546	Not Acceptable
1960	Non-Filterable Residue (TSS)	2/11/2016	KEK	20051018	SM 2540 D-1997, Rev. 2011	mg/L	84.9	84	69.6 - 94.4	Acceptable
1950	Total Solids					mg/L	581		523 - 639	NR
Nutrients 1 - Simple (PT-NUT1-WP)										Lot #: 8164-10
NELAC Code	Analyte	Analysis Date	Analyst	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
1515	Ammonia as N	3/17/2016	KEK	20109211	SM 4500-NH3 D-1997, Rev. 2011	mg/L	13.4	12.8	10.7 - 15.9	Acceptable
1810	Nitrate as N					mg/L	3.75		2.98 - 4.50	NR
1820	Nitrate and Nitrite as N					mg/L	3.75		3.04 - 4.42	NR
1870	Orthophosphate as P					mg/L	3.04		2.59 - 3.50	NR
Additional State Specific Analytes										
1712	Total Dissolved Phosphorus					mg/L	3.04		2.59 - 3.50	NR
1647	Dissolved Nitrogen					mg/L	17.1		14.3 - 19.9	NR
1827	Total Nitrogen					mg/L	17.1		14.3 - 19.9	NR
pH (PT-PH-WP)										Lot #: 8164-15
NELAC Code	Analyte	Analysis Date	Analyst	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
1900	pH	2/19/2016	KEK	20105015	SM 4500-H+ B-2000, Rev. 2011	S.U.	6.14	6.10	5.94 - 6.34	Acceptable

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EPA Lab ID: NC01230

Residual Chlorine Low Level (PT-CLLL-WP)										Lot #: 8164-94B
NELAC Code	Analyte	Analysis Date	Analyst	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
1940	Total Residual Chlorine	2/23/2016	KEK	60006522	Orion Electrode, 1977	µg/L	217	200	157 - 277	Acceptable
Settleable Solids (PT-SSOL-WP)										Lot #: 8164-17
NELAC Code	Analyte	Analysis Date	Analyst	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
1965	Settleable Solids	2/17/2016	KEK	20052011	SM 2540 F-1997, Rev. 2011	mL/L	31.0	32	25.4 - 39.3	Acceptable
Turbidity (PT-TURB-WP)										Lot #: 8164-20
NELAC Code	Analyte	Analysis Date	Analyst	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
2055	Turbidity	2/18/2016	KEK	20042619	SM 2130 B-2001, Rev. 2011	NTU	20.0	18	16.7 - 23.3	Acceptable



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PT Study Score Report

EPA ID: NC01230
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Study Number	Number of Reported Results	Number of Passing Results	Percent Passing
WP0216	15	13	86.7%

Report Definitions:

- Number of Reported Results*** The number of results reported which could be evaluated. Results receiving an evaluation of "NR" or "No Evaluation" are not included.
- Number of Passing Results*** The number of results reported receiving an evaluation of "Acceptable" or "Check for Error".
- Percent Passing*** The percentage of results reported receiving an evaluation of "Acceptable" or "Check for Error".

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Statistical Summary Report - Water Pollution Proficiency Testing

Opening Date: February 8, 2016 - Closing Date: March 24, 2016

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Contact: Ms. Kelley Keenan
828-350-9364

EPA Lab ID: NC01230

Demand (PT-DEM-WP) Lot #: 8164-07						
NELAC Code	Analyte	Units	Study Mean	Study Standard Deviation	Low Acceptance Limit %	High Acceptance Limit %
1530	BOD	mg/L	34.8	6.65	48.9	167
1555	CBOD	mg/L	34.6	3.71	36.8	167
1565	COD	mg/L	53.9	3.82	68.5	127
2040	TOC	mg/L	22.9	2.21	81.2	119
Minerals 1 (PT-MIN1-WP) Lot #: 8164-08						
NELAC Code	Analyte	Units	Study Mean	Study Standard Deviation	Low Acceptance Limit %	High Acceptance Limit %
1505	Total Alkalinity(as CaCO ₃)	mg/L	367	9.74	84.9	115
1540	Bromide	mg/L	2.07	0.287	72.8	124
1575	Chloride	mg/L	173	5.21	88.5	112
1730	Fluoride	mg/L	1.05	0.0806	77.1	121
2000	Sulfate	mg/L	11.8	0.627	74.8	120
Additional State Specific Analytes						
1813	Total Inorganic Carbon	mg/L	N/A	0.00	80.0	120
Minerals 2 - Hardness (PT-MIN2-WP) Lot #: 8164-102						
NELAC Code	Analyte	Units	Study Mean	Study Standard Deviation	Low Acceptance Limit %	High Acceptance Limit %
1035	Calcium	mg/L	35.4	1.90	85.1	115
1550	Calcium Hardness (as CaCO ₃)	mg/L	89.2	5.47	85.0	115
1755	Total Hardness (as CaCO ₃)	mg/L	130	6.65	85.1	116
1085	Magnesium	mg/L	9.96	0.536	84.9	115
1125	Potassium	mg/L	32.6	1.63	80.0	120
1155	Sodium	mg/L	38.5	2.54	80.0	120
Specific Conductance (PT-COND-WP) Lot #: 8164-72						
NELAC Code	Analyte	Units	Study Mean	Study Standard Deviation	Low Acceptance Limit %	High Acceptance Limit %
1610	Specific Conductance (25°C)	µmhos/cm	722	19.1	90.1	110
Solids (PT-SOL-WP) Lot #: 8164-09						
NELAC Code	Analyte	Units	Study Mean	Study Standard Deviation	Low Acceptance Limit %	High Acceptance Limit %
1955	Total Dissolved Solids at 180° (TFR)	mg/L	479	24.6	90.1	110
1960	Non-Filterable Residue (TSS)	mg/L	81.4	4.72	82.0	111
1950	Total Solids	mg/L	583	26.2	90.0	110

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Nutrients 1 - Simple (PT-NUT1-WP) Lot #: 8164-10						
NELAC Code	Analyte	Units	Study Mean	Study Standard Deviation	Low Acceptance Limit %	High Acceptance Limit %
1515	Ammonia as N	mg/L	13.1	0.966	79.9	119
1810	Nitrate as N	mg/L	3.68	0.256	79.5	120
1820	Nitrate and Nitrite as N	mg/L	3.68	0.261	81.1	118
1870	Orthophosphate as P	mg/L	3.12	0.156	85.2	115
Additional State Specific Analytes						
1712	Total Dissolved Phosphorus	mg/L	5.07	3.32	85.2	115
1647	Dissolved Nitrogen	mg/L	16.5	2.14	83.6	116
1827	Total Nitrogen	mg/L	16.8	1.12	83.6	116
pH (PT-PH-WP) Lot #: 8164-15						
NELAC Code	Analyte	Units	Study Mean	Study Standard Deviation	Low Acceptance Limit %	High Acceptance Limit %
1900	pH	S.U.	6.11	0.0333	96.7	103
Residual Chlorine Low Level (PT-CLLL-WP) Lot #: 8164-94B						
NELAC Code	Analyte	Units	Study Mean	Study Standard Deviation	Low Acceptance Limit %	High Acceptance Limit %
1940	Total Residual Chlorine	µg/L	215	15.4	72.4	128
Settleable Solids (PT-SSOL-WP) Lot #: 8164-17						
NELAC Code	Analyte	Units	Study Mean	Study Standard Deviation	Low Acceptance Limit %	High Acceptance Limit %
1965	Settleable Solids	mL/L	28.4	1.93	81.9	127
Turbidity (PT-TURB-WP) Lot #: 8164-20						
NELAC Code	Analyte	Units	Study Mean	Study Standard Deviation	Low Acceptance Limit %	High Acceptance Limit %
2055	Turbidity	NTU	18.8	1.10	83.5	117