



April 11, 2017

ATC Group Services
Attn: Mr. Robert Smith
46555 Humboldt, Suite 100
Novi, MI 48377

Project: School Drinking Water Testing

Dear Mr. Robert Smith,

Enclosed is a copy of the laboratory report for the following work order(s) received by Pace Analytical:

Work Order	Received	Description
1703426	03/23/2017	John R. King

This report relates only to the sample(s) as received. Test results are in compliance with the requirements of the National Environmental Laboratory Accreditation Program (NELAP) and/or one of the following certification programs:

ANAB DoD-ELAP/ISO17025 (#ADE-1542); Arkansas DEP (#88-0730/13-049-0); Georgia EPD (#026-999-161/1023062); Illinois DEP (#200026/003329); Kentucky DEP (AL123065/#0021); Michigan DPH (#0034); Minnesota DPH (#026-999-161/1023062); New York ELAP (#11776/53116); North Carolina DNRE (#659); Virginia DCLS (#460153/7952); Wisconsin DNR (#999472650); USDA Soil Import Permit (#P330-14-00305).

Any qualification or narration of results, including sample acceptance requirements and test exceptions to the above referenced programs, is presented in the Statement of Data Qualifications and Project Technical Narrative sections of this report. Estimates of analytical uncertainties and certification documents for the test results contained within this report are available upon request.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Gary L. Wood
Client Services Manager



PROJECT TECHNICAL NARRATIVE(s)

No Project Narrative is associated with this report.



STATEMENT OF DATA QUALIFICATIONS

All analyses have been validated and comply with our Quality Control Program.
No Qualification is required.



ANALYTICAL REPORT

Client: **ATC Group Services** Work Order: **1703426**
Project: School Drinking Water Testing Description: John R. King
Client Sample ID: **DWF-P-JRK-206 (L)** Sampled: 03/22/17 07:39
Lab Sample ID: **1703426-01** Sampled By: ATC
Matrix: Drinking Water Received: 03/23/17 17:00

Metals in Drinking Water by EPA 200 Series Methods

Analyte	Analytical Result	RL	Action Limit	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
Copper	0.60	0.010	1.3	mg/L	10	USEPA-200.8 Rev. 5.4	04/07/17 09:20	KLV	1702815
Lead	<0.0010	0.0010	0.015	mg/L	1	USEPA-200.8 Rev. 5.4	04/06/17 12:26	KLV	1702815



ANALYTICAL REPORT

Client:	ATC Group Services	Work Order:	1703426
Project:	School Drinking Water Testing	Description:	John R. King
Client Sample ID:	DWF-F-JRK-206 (L)	Sampled:	03/22/17 07:40
Lab Sample ID:	1703426-02	Sampled By:	ATC
Matrix:	Drinking Water	Received:	03/23/17 17:00

Metals in Drinking Water by EPA 200 Series Methods

Analyte	Analytical Result	RL	Action Limit	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
Copper	0.40	0.010	1.3	mg/L	10	USEPA-200.8 Rev. 5.4	04/07/17 09:22	KLV	1702815
Lead	<0.0010	0.0010	0.015	mg/L	1	USEPA-200.8 Rev. 5.4	04/06/17 12:29	KLV	1702815



ANALYTICAL REPORT

Client: **ATC Group Services** Work Order: **1703426**
Project: School Drinking Water Testing Description: John R. King
Client Sample ID: **DWF-P-JRK-206 (R)** Sampled: 03/22/17 07:41
Lab Sample ID: **1703426-03** Sampled By: ATC
Matrix: Drinking Water Received: 03/23/17 17:00

Metals in Drinking Water by EPA 200 Series Methods

Analyte	Analytical Result	RL	Action Limit	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
Copper	0.68	0.010	1.3	mg/L	10	USEPA-200.8 Rev. 5.4	04/07/17 09:25	KLV	1702815
Lead	<0.0010	0.0010	0.015	mg/L	1	USEPA-200.8 Rev. 5.4	04/06/17 12:31	KLV	1702815



ANALYTICAL REPORT

Client:	ATC Group Services	Work Order:	1703426
Project:	School Drinking Water Testing	Description:	John R. King
Client Sample ID:	DWF-F-JRK-206 (R)	Sampled:	03/22/17 07:43
Lab Sample ID:	1703426-04	Sampled By:	ATC
Matrix:	Drinking Water	Received:	03/23/17 17:00

Metals in Drinking Water by EPA 200 Series Methods

Analyte	Analytical Result	RL	Action Limit	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
Copper	0.41	0.010	1.3	mg/L	10	USEPA-200.8 Rev. 5.4	04/07/17 09:27	KLV	1702815
Lead	<0.0010	0.0010	0.015	mg/L	1	USEPA-200.8 Rev. 5.4	04/06/17 12:42	KLV	1702815



ANALYTICAL REPORT

Client: **ATC Group Services**
Project: School Drinking Water Testing
Client Sample ID: **SWF-P-JRK-PREK 113**
Lab Sample ID: **1703426-05**
Matrix: Drinking Water

Work Order: **1703426**
Description: John R. King
Sampled: 03/22/17 07:46
Sampled By: ATC
Received: 03/23/17 17:00

Metals in Drinking Water by EPA 200 Series Methods

Analyte	Analytical Result	RL	Action Limit	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
Copper	0.13	0.0050	1.3	mg/L	5	USEPA-200.8 Rev. 5.4	04/07/17 09:30	KLV	1702815
Lead	0.0039	0.0010	0.015	mg/L	1	USEPA-200.8 Rev. 5.4	04/06/17 12:44	KLV	1702815



ANALYTICAL REPORT

Client: **ATC Group Services** Work Order: **1703426**
Project: School Drinking Water Testing Description: John R. King
Client Sample ID: **SWF-F-JRK-PREK 113** Sampled: 03/22/17 07:47
Lab Sample ID: **1703426-06** Sampled By: ATC
Matrix: Drinking Water Received: 03/23/17 17:00

Metals in Drinking Water by EPA 200 Series Methods

Analyte	Analytical Result	RL	Action Limit	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
Copper	0.14	0.0050	1.3	mg/L	5	USEPA-200.8 Rev. 5.4	04/07/17 09:37	KLV	1702816
Lead	<0.0010	0.0010	0.015	mg/L	1	USEPA-200.8 Rev. 5.4	04/06/17 12:55	KLV	1702816



ANALYTICAL REPORT

Client: **ATC Group Services** Work Order: **1703426**
Project: School Drinking Water Testing Description: John R. King
Client Sample ID: **K-P-JRK-Kitchen** Sampled: 03/22/17 07:49
Lab Sample ID: **1703426-07** Sampled By: ATC
Matrix: Drinking Water Received: 03/23/17 17:00

Metals in Drinking Water by EPA 200 Series Methods

Analyte	Analytical Result	RL	Action Limit	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
Copper	0.13	0.0050	1.3	mg/L	5	USEPA-200.8 Rev. 5.4	04/07/17 09:47	KLV	1702816
Lead	0.0011	0.0010	0.015	mg/L	1	USEPA-200.8 Rev. 5.4	04/06/17 13:05	KLV	1702816



ANALYTICAL REPORT

Client:	ATC Group Services	Work Order:	1703426
Project:	School Drinking Water Testing	Description:	John R. King
Client Sample ID:	K-F-JRK-Kitchen	Sampled:	03/22/17 07:50
Lab Sample ID:	1703426-08	Sampled By:	ATC
Matrix:	Drinking Water	Received:	03/23/17 17:00

Metals in Drinking Water by EPA 200 Series Methods

Analyte	Analytical Result	RL	Action Limit	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
Copper	0.068	0.0010	1.3	mg/L	1	USEPA-200.8 Rev. 5.4	04/06/17 13:07	KLV	1702816
Lead	<0.0010	0.0010	0.015	mg/L	1	USEPA-200.8 Rev. 5.4	04/06/17 13:07	KLV	1702816



ANALYTICAL REPORT

Client: **ATC Group Services** Work Order: **1703426**
Project: School Drinking Water Testing Description: John R. King
Client Sample ID: **DWF-P-JRK-120 Band** Sampled: 03/22/17 07:58
Lab Sample ID: **1703426-09** Sampled By: ATC
Matrix: Drinking Water Received: 03/23/17 17:00

Metals in Drinking Water by EPA 200 Series Methods

Analyte	Analytical Result	RL	Action Limit	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
Copper	0.65	0.010	1.3	mg/L	10	USEPA-200.8 Rev. 5.4	04/07/17 09:49	KLV	1702816
Lead	0.0024	0.0010	0.015	mg/L	1	USEPA-200.8 Rev. 5.4	04/06/17 13:10	KLV	1702816



ANALYTICAL REPORT

Client:	ATC Group Services	Work Order:	1703426
Project:	School Drinking Water Testing	Description:	John R. King
Client Sample ID:	DWF-F-JRK-120 Band	Sampled:	03/22/17 07:59
Lab Sample ID:	1703426-10	Sampled By:	ATC
Matrix:	Drinking Water	Received:	03/23/17 17:00

Metals in Drinking Water by EPA 200 Series Methods

Analyte	Analytical Result	RL	Action Limit	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
Copper	0.16	0.0050	1.3	mg/L	5	USEPA-200.8 Rev. 5.4	04/07/17 09:52	KLV	1702816
Lead	<0.0010	0.0010	0.015	mg/L	1	USEPA-200.8 Rev. 5.4	04/06/17 13:12	KLV	1702816



QUALITY CONTROL REPORT

Metals in Drinking Water by EPA 200 Series Methods

QC Type	Sample Conc.	Spike Qty.	Result	Unit	Spike % Rec.	Control Limits	RPD	RPD Limits	RL
Analyte: Copper/USEPA-200.8 Rev. 5.4									
QC Batch: 1702815 (Metals Direct Analysis)						Analyzed: 04/06/2017		By: KLV	
Method Blank			<0.0010	mg/L					0.0010
Laboratory Control Sample		0.0400	0.0395	mg/L	99	85-115			0.0010
QC Batch: 1702816 (Metals Direct Analysis)						Analyzed: 04/06/2017		By: KLV	
Method Blank			<0.0010	mg/L					0.0010
Laboratory Control Sample		0.0400	0.0395	mg/L	99	85-115			0.0010
QC Batch: 1702816 (Metals Direct Analysis)						Analyzed: 04/07/2017		By: KLV	
1703426-06 [SWF-F-JRK-PREK 113]									
Matrix Spike	0.144	0.100	0.252	mg/L	108	70-130			0.0050
Matrix Spike Duplicate	0.144	0.100	0.253	mg/L	108	70-130	0.3	20	0.0050
Analyte: Lead/USEPA-200.8 Rev. 5.4									
QC Batch: 1702815 (Metals Direct Analysis)						Analyzed: 04/06/2017		By: KLV	
Method Blank			<0.0010	mg/L					0.0010
Laboratory Control Sample		0.0400	0.0391	mg/L	98	85-115			0.0010
QC Batch: 1702816 (Metals Direct Analysis)						Analyzed: 04/06/2017		By: KLV	
Method Blank			<0.0010	mg/L					0.0010
Laboratory Control Sample		0.0400	0.0391	mg/L	98	85-115			0.0010
1703426-06 [SWF-F-JRK-PREK 113]									
Matrix Spike	0.000238	0.0200	0.0201	mg/L	99	70-130			0.0010
Matrix Spike Duplicate	0.000238	0.0200	0.0198	mg/L	98	70-130	1	20	0.0010



PRETREATMENT SUMMARY PAGE

Client: **ATC Group Services**
Project: **School Drinking Water Testing**

Pretreatment	Lab Sample ID	Batch	By	Date & Time Prepared
USEPA 600/R-94/173	1703426-01	1702815	JBA	03/30/17 16:52
	1703426-02	1702815	JBA	03/30/17 16:52
	1703426-03	1702815	JBA	03/30/17 16:52
	1703426-04	1702815	JBA	03/30/17 16:52
	1703426-05	1702815	JBA	03/30/17 16:52
	1703426-06	1702816	JBA	03/30/17 16:53
	1703426-07	1702816	JBA	03/30/17 16:53
	1703426-08	1702816	JBA	03/30/17 16:53
	1703426-09	1702816	JBA	03/30/17 16:53
	1703426-10	1702816	JBA	03/30/17 16:53

E-17031220

CHAIN-OF-CUSTODY / Analytical Request Document
The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1
2159580

Section A ATC Group Services Required Client Information: Company: <u>ATC Group Services</u> Address: <u>4555 Humboldt Dr.</u> <u>Suite 100</u> Email To: <u>Robert.smith@atcassociates.com</u> Phone: <u>218-649-5140</u> Fax: <u>218-649-5147</u> Requested Due Date/TAT: _____		Section B Required Project Information: Report To: <u>Robert Smith</u> Copy To: _____ Purchase Order No.: _____ Project Name: _____ Project Number: _____	
Section C Invoice Information: Attention: <u>Robert Smith</u> Company Name: <u>ATC Group Services</u> Address: <u>4555 Humboldt Drive</u> Pace Quote Reference: _____ Pace Project Manager: _____ Pace Profile #: _____		REGULATORY AGENCY <input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input checked="" type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER _____ Site Location STATE: _____	

ITEM #	Section D Required Client Information	Matrix Codes MATRIX I CODE	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)		
			DATE	TIME			DATE	TIME	Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH			Na ₂ S ₂ O ₃	Methanol
1	DWF-P-SRK-200 (L)		3/22/17	7:39		1											
2	DWF-F-SRK-200 (L)		3/22/17	7:40		1											
3	DWF-P-SRK-200 (R)		3/22/17	7:41		1											
4	DWF-F-SRK-200 (R)		3/22/17	7:43		1											
5	DWF-P-SRK-PREK 113		3/22/17	7:44		1											
6	DWF-F-SRK-PREK 113		3/22/17	7:44		1											
7	K-P-SRK-KITZHEN		3/22/17	7:49		1											
8	K-F-SRK-KITZHEN		3/22/17	7:50		1											
9	DWF-P-SRK-120 BAND		3/22/17	7:58		1											
10	DWF-F-SRK-120 BAND		3/22/17	7:59		1											
11																	
12																	

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Kimberly Johnson/ATC	3/22/17	11:30	Dave	3-23-17	1200	
	Duncan	3-23-17	1700	D.D. DODD	3/23/17	1700	

ORIGINAL

SAMPLER NAME AND SIGNATURE	
PRINT Name of SAMPLER:	Kimberly Johnson
SIGNATURE of SAMPLER:	<i>Kimberly Johnson</i>
DATE Signed (MM/DD/YY):	3/22/17

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



SAMPLE RECEIVING / LOG-IN CHECKLIST

Client: <u>ATC</u>	Work Order #: <u>1703126</u>
Receipt Record Page/Line #: <u>43-35</u>	Project/Chemist: <u>[Signature]</u> Sample #: _____

Recorded by (initials/date): <u>JN 3/23/17</u>	<input type="checkbox"/> Cooler <input type="checkbox"/> Box <input type="checkbox"/> Other	Qty Received: <u>1</u>	<input checked="" type="checkbox"/> IR Gun (#202) <input type="checkbox"/> Digital Thermometer (#54) <input type="checkbox"/> Other (# _____)	<input type="checkbox"/> Thermometer Used <input type="checkbox"/> See Additional Cooler Information Form
--	---	------------------------	---	--

Cooler #	Time	Cooler #	Time	Cooler #	Time
<u>1771884</u>	<u>2009</u>				
Custody Seals: <input checked="" type="checkbox"/> None <input type="checkbox"/> Present / Intact <input type="checkbox"/> Present / Not Intact		Custody Seals: <input type="checkbox"/> None <input type="checkbox"/> Present / Intact <input type="checkbox"/> Present / Not Intact		Custody Seals: <input type="checkbox"/> None <input type="checkbox"/> Present / Intact <input type="checkbox"/> Present / Not Intact	
Coolant Type: <input type="checkbox"/> Loose Ice <input type="checkbox"/> Bagged Ice <input type="checkbox"/> Blue Ice <input checked="" type="checkbox"/> None		Coolant Type: <input type="checkbox"/> Loose Ice <input type="checkbox"/> Bagged Ice <input type="checkbox"/> Blue Ice <input type="checkbox"/> None		Coolant Type: <input type="checkbox"/> Loose Ice <input type="checkbox"/> Bagged Ice <input type="checkbox"/> Blue Ice <input type="checkbox"/> None	
Coolant Location: Dispersed / Top / Middle / Bottom		Coolant Location: Dispersed / Top / Middle / Bottom		Coolant Location: Dispersed / Top / Middle / Bottom	
Temp Blank Present: <input type="checkbox"/> Yes <input type="checkbox"/> No		Temp Blank Present: <input type="checkbox"/> Yes <input type="checkbox"/> No		Temp Blank Present: <input type="checkbox"/> Yes <input type="checkbox"/> No	
If Present, Temperature Blank Location is: <input type="checkbox"/> Representative <input type="checkbox"/> Not Representative		If Present, Temperature Blank Location is: <input type="checkbox"/> Representative <input type="checkbox"/> Not Representative		If Present, Temperature Blank Location is: <input type="checkbox"/> Representative <input type="checkbox"/> Not Representative	
Observed °C	Correction Factor °C	Actual °C	Observed °C	Correction Factor °C	Actual °C
Temp Blank:			Temp Blank:		
Sample 1: <u>15.7</u>	<u>0</u>	<u>15.7</u>	Sample 1:		
Sample 2: <u>17.8</u>	<u>0</u>	<u>17.8</u>	Sample 2:		
Sample 3: <u>17.1</u>	<u>0</u>	<u>17.1</u>	Sample 3:		
3 Sample Average °C: <u>16.9</u>		3 Sample Average °C: _____		3 Sample Average °C: _____	
<input type="checkbox"/> Cooler ID on COC? <input type="checkbox"/> VOC Trip Blank received?		<input type="checkbox"/> Cooler ID on COC? <input type="checkbox"/> VOC Trip Blank received?		<input type="checkbox"/> Cooler ID on COC? <input type="checkbox"/> VOC Trip Blank received?	

If any shaded areas checked, complete Sample Receiving Non-Conformance and/or Inventory Form

Paperwork Received

Yes No

Chain of Custody record(s)? If No, Initiated By _____

Received for Lab Signed/Date/Time?

Shipping document?

Other _____

COC Information

Pace COC Other _____

COC ID Numbers: 2159580

Check COC for Accuracy

Yes No

Analysis Requested?

Sample ID matches COC?

Sample Date and Time matches COC?

Container type completed on COC?

All container types indicated are received?

Sample Condition Summary

N/A	Yes	No	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Broken containers/lids?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Missing or incomplete labels?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Illegible information on labels?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Low volume received?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Inappropriate or non-Pace containers received?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VOC vials / TOX containers have headspace?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Extra sample locations / containers not listed on COC?

Check Sample Preservation

N/A Yes No

Temperature Blank OR average sample temperature, ≥6° C?

If either is ≥6° C, was thermal preservation required?

If "Yes", Project Chemist Approval Initials: _____

If "Yes" Completed Non Con Cooler - Cont Inventory Form?

Completed Sample Preservation Verification Form?

Samples chemically preserved correctly?

If "No", added orange tag?

Received pre-preserved VOC soils?

MeOH Na₂SO₄

Check for Short Hold-Time Prep/Analyses

Bacteriological

Air Bags

EnCores / Methanol Pre-Preserved

Formaldehyde/Aldehyde

Green-tagged containers

Yellow/White-tagged 1 L ambers (SV Prep-Lab)

AFTER HOURS ONLY:

COPIES OF COC TO LAB AREA(S)

NONE RECEIVED

RECEIVED, COCs TO LAB(S)

Notes

Trip Blank received Trip Blank not listed on COC

Cooler Received (Date/Time)	Paperwork Delivered (Date/Time)	≤1 Hour Goal Met?
<u>JN 3/23/17</u>	<u>3/23/17</u>	Yes / No



SAMPLE PRESERVATION VERIFICATION FORM

page 1 of 1

Client QTC	Work Order # 1703420
Receipt Log # 42-35	Completed By (Initials/Date) JN 3/23/17
Project Chemist <i>(Signature)</i>	

COC ID # 2159580				Adjusted by: _____ Date: _____				DO NOT ADJUST pH FOR THESE CONTAINER TYPES			
Container Type	5 / 23	4	13	6	15						
Tag Color	Lt. Blue	Blue	Brown	Red	Red Stripe						
Preservative	NaOH	H ₂ SO ₄	H ₂ SO ₄	HNO ₃	HNO ₃						
Expected pH	>12	<2	<2	<2	<2						
COC Line #1				✓							
COC Line #2				✓							
COC Line #3				✓							
COC Line #4				✓							
COC Line #5				✓							
COC Line #6				✓							
COC Line #7				✓							
COC Line #8				✓							
COC Line #9				✓							
COC Line #10				✓							
Comments											

pH Strip Reagent # / Lot #

7021862 / HC693124

Other _____

Aqueous Samples: For each sample and container type, check the box if pH is acceptable. If pH is not acceptable for any sample container, record pH in box, and note on Sample Receiving Checklist and on Sample Receiving Non-Conformance Form. If approved by Project Chemist, add acid or base to the sample to achieve the correct pH. Add up to, but do not exceed 2x the volume initially added at container prep (see table below for initial volumes used). Add orange pH tag to sample container and record information requested. Record adjusted pH on this form. Do not adjust pH for container types 6 and 15.

COC ID # _____				Adjusted by: _____ Date: _____				DO NOT ADJUST pH FOR THESE CONTAINER TYPES			
Container Type	5 / 23	4	13	6	15						
Tag Color	Lt. Blue	Blue	Brown	Red	Red Stripe						
Preservative	NaOH	H ₂ SO ₄	H ₂ SO ₄	HNO ₃	HNO ₃						
Expected pH	>12	<2	<2	<2	<2						
COC Line #1											
COC Line #2											
COC Line #3											
COC Line #4											
COC Line #5											
COC Line #6											
COC Line #7											
COC Line #8											
COC Line #9											
COC Line #10											
Comments											

Container Size (mL)	Original Vol. of Preservative (mL)
Container Type 5	NaOH
500	2.5
1000	5.0
Container Type 4	H ₂ SO ₄
125	0.5
250	1.0
500	2.0
1000	4.0
Container Type 13	H ₂ SO ₄
500	2.5