



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
1703424	03/23/2017	Thirkell

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,

A handwritten signature in blue ink, appearing to read "Gary L. Wood", written over a light blue rectangular background.

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: **1703424**
Project: School Drinking Water Testing Description: Thirkell
Client Sample ID: **DWF-P-THIRK-Hall @ Gym (L)** Sampled: 03/23/17 06:05
Lab Sample ID: **1703424-01** 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	0.034	0.0010	1.3	mg/L	1	USEPA-200.8 Rev. 5.4	04/06/17 11:42	KLV	1702815
Lead	0.033	0.0010	0.015	mg/L	1	USEPA-200.8 Rev. 5.4	04/06/17 11:42	KLV	1702815



ANALYTICAL REPORT

Client: **ATC Group Services**
Project: School Drinking Water Testing
Client Sample ID: **DWF-F-THIRK-Hall @ Gym (L)**
Lab Sample ID: **1703424-02**
Matrix: Drinking Water

Work Order: **1703424**
Description: Thirkell
Sampled: 03/23/17 06:06
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	0.0035	0.0010	1.3	mg/L	1	USEPA-200.8 Rev. 5.4	04/06/17 11:52	KLV	1702815
Lead	0.0073	0.0010	0.015	mg/L	1	USEPA-200.8 Rev. 5.4	04/06/17 11:52	KLV	1702815



ANALYTICAL REPORT

Client: **ATC Group Services** Work Order: **1703424**
Project: School Drinking Water Testing Description: Thirkell
Client Sample ID: **DWF-P-THIRK-Hall @ Gym (R)** Sampled: 03/23/17 06:08
Lab Sample ID: **1703424-03** 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	0.20	0.0050	1.3	mg/L	5	USEPA-200.8 Rev. 5.4	04/07/17 09:12	KLV	1702815
Lead	0.036	0.0010	0.015	mg/L	1	USEPA-200.8 Rev. 5.4	04/06/17 11:55	KLV	1702815



ANALYTICAL REPORT

Client: **ATC Group Services**
Project: School Drinking Water Testing
Client Sample ID: **DWF-F-THIRK-Hall @ Gym (R)**
Lab Sample ID: **1703424-04**
Matrix: Drinking Water

Work Order: **1703424**
Description: Thirkell
Sampled: 03/23/17 06:09
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	0.0084	0.0010	1.3	mg/L	1	USEPA-200.8 Rev. 5.4	04/06/17 11:57	KLV	1702815
Lead	0.0070	0.0010	0.015	mg/L	1	USEPA-200.8 Rev. 5.4	04/06/17 11:57	KLV	1702815

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
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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
1703424-01 [DWF-P-THIRK-Hall @ Gym (L)]									
Matrix Spike	0.0343	0.0200	0.0532	mg/L	95	70-130			0.0010
Matrix Spike Duplicate	0.0343	0.0200	0.0544	mg/L	101	70-130	2	20	0.0010

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
1703424-01 [DWF-P-THIRK-Hall @ Gym (L)]									
Matrix Spike	0.0334	0.0200	0.0527	mg/L	96	70-130			0.0010
Matrix Spike Duplicate	0.0334	0.0200	0.0532	mg/L	99	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	1703424-01	1702815	JBA	03/30/17 16:52
	1703424-02	1702815	JBA	03/30/17 16:52
	1703424-03	1702815	JBA	03/30/17 16:52
	1703424-04	1702815	JBA	03/30/17 16:52

E: 1703424

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:

Company:	ATC GROUP SERVICES	Report To:	ROBERT SMITH
Address:	4555 HUMBOLDT DRIVE	Copy To:	
SUITE 100		Purchase Order No.:	
Email To:	robert.smith@atcassociates.com	Project Name:	
Phone:	248-449-5140	Project Number:	
Fax:	248-449-5147	Requested Due Date/AT:	

Section B
Required Project Information:

Attention:	ROBERT SMITH
Company Name:	ATC GROUP SERVICES
Address:	4555 HUMBOLDT DRIVE
City/State:	
Reference:	
Pace Project Manager:	
Pace Profile #:	

Page: 1 of 1

2159575

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: _____

Requested Analysis Filtered (Y/N)

ITEM #	Section D Required Client Information	Matrix Codes MATRIX L CODE	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Analysis Test ↓	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
			DATE	TIME							
1	DW-F-THIRK-HALL @ GYM (L)	DW	3/23/17	6:05	1	Unpreserved		LEAD			(412-34) PART 4
2	DW-F-THIRK-HALL @ GYM (L)	DW		6:06	1	H ₂ SO ₄		COPPER			
3	DW-F-THIRK-HALL @ GYM (R)	DW		6:08	1	HNO ₃					
4	DW-F-THIRK-HALL @ GYM (R)	DW		6:09	1	HCl					
5						NaOH					
6						Na ₂ S ₂ O ₃					
7						Methanol					
8						Other					
9											
10											
11											
12											

ADDITIONAL COMMENTS

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
KIMBERLY JOHNSON/ATC	3/23/17	8:40	Kimberly Johnson	3/23/17	12:00	
Duncanson	3/23/17	17:00	Paul Duncanson	3/23/17	17:00	

ORIGINAL

SAMPLER NAME AND SIGNATURE	
PRINT Name of SAMPLER:	KIMBERLY JOHNSON
SIGNATURE of SAMPLER:	Kimberly Johnson
DATE Signed (MM/DD/YY):	3/23/17

SAMPLE RECEIVING / LOG-IN CHECKLIST

Pace Analytical

Client: <u>ATC</u>	Work Order #: <u>1703424</u>
Receipt Record Page/Line #: <u>42-34</u>	Project Chemist: <u>[Signature]</u>
New / Add To	Sample #s

Recorded by (Initials/date): <u>DN 3-23-17</u>	<input checked="" 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"/> Thermometer Used <input type="checkbox"/> Digital Thermometer (#54) <input type="checkbox"/> Other (#)	<input type="checkbox"/> See Additional Cooler Information Form
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Cooler #	Time	Custody Seals:	Coolant Type:	Coolant Location:	Temp Blank Present:	If Present, Temperature Blank Location is:	Observed °C	Correction Factor °C	Actual °C	Temp Blank:	Sample 1:	Sample 2:	Sample 3:	3 Sample Average °C:	Cooler ID on COC?	VOC Trip Blank received?
<u>171884</u>	<u>3009</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Present / Intact <input type="checkbox"/> Present / Not Intact	<input type="checkbox"/> Loose Ice <input type="checkbox"/> Bagged Ice <input type="checkbox"/> Blue Ice <input checked="" type="checkbox"/> None	Dispersed / Top / Middle / Bottom	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Representative <input type="checkbox"/> Not Representative	<u>15.7</u>	<u>0</u>	<u>15.7</u>		<u>15.7</u>	<u>17.8</u>	<u>17.1</u>	<u>16.9</u>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/> None <input type="checkbox"/> Present / Intact <input type="checkbox"/> Present / Not Intact	<input type="checkbox"/> Loose Ice <input type="checkbox"/> Bagged Ice <input type="checkbox"/> Blue Ice <input type="checkbox"/> None	Dispersed / Top / Middle / Bottom	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Representative <input type="checkbox"/> Not Representative									<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/> None <input type="checkbox"/> Present / Intact <input type="checkbox"/> Present / Not Intact	<input type="checkbox"/> Loose Ice <input type="checkbox"/> Bagged Ice <input type="checkbox"/> Blue Ice <input type="checkbox"/> None	Dispersed / Top / Middle / Bottom	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Representative <input type="checkbox"/> Not Representative									<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/> None <input type="checkbox"/> Present / Intact <input type="checkbox"/> Present / Not Intact	<input type="checkbox"/> Loose Ice <input type="checkbox"/> Bagged Ice <input type="checkbox"/> Blue Ice <input type="checkbox"/> None	Dispersed / Top / Middle / Bottom	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Representative <input type="checkbox"/> Not Representative									<input type="checkbox"/>	<input type="checkbox"/>

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

Paperwork Received Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Chain of Custody record(s)? If No, Initiated By _____ <input checked="" type="checkbox"/> Received for Lab Signed/Date/Time? <input type="checkbox"/> Shipping document? <input type="checkbox"/> Other _____ COC Information <input checked="" type="checkbox"/> Pace COC <input type="checkbox"/> Other _____ COC ID Numbers: <u>2159575</u>	Check Sample Preservation N/A <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> <input type="checkbox"/> Temperature Blank OR average sample temperature, ≥ 26° C? <input checked="" type="checkbox"/> If either is ≥ 26° C, was thermal preservation required? If "Yes", Project Chemist Approval Initials: _____ If "Yes" Completed Non Con Cooler - Cont Inventory Form? <input type="checkbox"/> Completed Sample Preservation Verification Form? <input checked="" type="checkbox"/> Samples chemically preserved correctly? If "No", added orange tag? <input checked="" type="checkbox"/> Received pre-preserved VOC soils? <input type="checkbox"/> MeOH <input type="checkbox"/> Na ₂ SO ₄
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Check COC for Accuracy Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> <input type="checkbox"/> Analysis Requested? <input checked="" type="checkbox"/> Sample ID matches COC? <input checked="" type="checkbox"/> Sample Date and Time matches COC? <input type="checkbox"/> Container type completed on COC? <input type="checkbox"/> All container types indicated are received?	Check for Short Hold-Time Prep/Analyses <input type="checkbox"/> Bacteriological <input type="checkbox"/> Air Bags <input type="checkbox"/> EnCores / Methanol Pre-Preserved <input type="checkbox"/> Formaldehyde/Aldehyde <input type="checkbox"/> Green-tagged containers <input type="checkbox"/> Yellow/White-tagged 1 L ambers (SV Prep-Lab)
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Sample Condition Summary N/A <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> <input checked="" type="checkbox"/> Broken containers/lids? <input checked="" type="checkbox"/> Missing or incomplete labels? <input checked="" type="checkbox"/> Illegible information on labels? <input checked="" type="checkbox"/> Low volume received? <input type="checkbox"/> Inappropriate or non-Pace containers received? <input type="checkbox"/> VOC vials / TOX containers have headspace? <input type="checkbox"/> Extra sample locations / containers not listed on COC?	Notes <input type="checkbox"/> Trip Blank received <input type="checkbox"/> Trip Blank not listed on COC Cooler Received (Date/Time): <u>DN 3/23/17</u> Paperwork Delivered (Date/Time): <u>3/23/17</u> ≤ 1 Hour Goal Met? <u>Yes / No</u>
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SAMPLE PRESERVATION VERIFICATION FORM

page 1 of 1

Client: <u>ATC</u>	Work Order #: <u>1703424</u>
Receipt Log #: <u>42-34</u>	Completed By (initials/date): <u>SN 3/23/17</u>
Project Chemist: _____	

COC ID #: <u>2159575</u>				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											

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.

Comments: _____

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											

Container Size (mL)	Original Vol. of Preservative (mL)
Container Type 5 NaOH	
500	2.5
1000	5.0
Container Type 4 H₂SO₄	
125	0.5
250	1.0
500	2.0
1000	4.0
Container Type 13 H₂SO₄	
500	2.5

Comments: _____