



20-Apr-2023

Bruce Welch  
TETRATECH-CHICAGO  
1 South Wacker Drive  
37th Floor  
Chicago, IL 60606

Re: **Richmond Industrial Fire; ALS-100 Mod. 1**

Work Order: **23040743**

Dear Bruce,

ALS Environmental received 18 samples on 20-Apr-2023 06:45 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

QC sample results for this data met laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Laboratory Group. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 10.

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

Sincerely,

**Danielle Strasinger**

Electronically approved by: Rob Nieman

Danielle Strasinger  
Project Manager

## Report of Laboratory Analysis

ADDRESS 4388 Glendale Milford Rd Cincinnati, OH 45242- | PHONE (513) 733-5336 | FAX (513) 733-5347

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Environmental 

[www.alsglobal.com](http://www.alsglobal.com)

RIGHT SOLUTIONS RIGHT PARTNER

## ALS Environmental

Date: 20-Apr-23

**Client:** TETRATECH-CHICAGO  
**Project:** Richmond Industrial Fire; ALS-100 Mod. 1  
**Work Order:** 23040743

### Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
23040743-01	RIF-PA01-HV-20230419-a	Air		4/19/2023	4/20/2023 06:45	<input type="checkbox"/>
23040743-02	RIF-PA01-LV-20230419-a	Air		4/19/2023	4/20/2023 06:45	<input type="checkbox"/>
23040743-03	RIF-PA01-LV-20230419-b	Air		4/19/2023	4/20/2023 06:45	<input type="checkbox"/>
23040743-04	RIF-PA02-HV-20230419	Air		4/19/2023	4/20/2023 06:45	<input type="checkbox"/>
23040743-05	RIF-PA02-LV-20230419	Air		4/19/2023	4/20/2023 06:45	<input type="checkbox"/>
23040743-06	RIF-PA03-HV-20230419	Air		4/19/2023	4/20/2023 06:45	<input type="checkbox"/>
23040743-07	RIF-PA03-LV-20230419	Air		4/19/2023	4/20/2023 06:45	<input type="checkbox"/>
23040743-08	RIF-PA04-HV-20230419	Air		4/19/2023	4/20/2023 06:45	<input type="checkbox"/>
23040743-09	RIF-PA04-LV-20230419	Air		4/19/2023	4/20/2023 06:45	<input type="checkbox"/>
23040743-10	RIF-UW01-HV-20230419	Air		4/19/2023	4/20/2023 06:45	<input type="checkbox"/>
23040743-11	RIF-UW01-LV-20230419	Air		4/19/2023	4/20/2023 06:45	<input type="checkbox"/>
23040743-12	RIF-CA01-HV-20230419	Air		4/19/2023	4/20/2023 06:45	<input type="checkbox"/>
23040743-13	RIF-CA02-HV-20230419	Air		4/19/2023	4/20/2023 06:45	<input type="checkbox"/>
23040743-14	RIF-LB01-ABZ-20230419	Air		4/19/2023	4/20/2023 06:45	<input type="checkbox"/>
23040743-15	RIF-LB02-ABZ-20230419	Air		4/19/2023	4/20/2023 06:45	<input type="checkbox"/>
23040743-16	RIF-LB01-CBZ-20230419	Air		4/19/2023	4/20/2023 06:45	<input type="checkbox"/>
23040743-17	Equipment Blank-20230419	Air		4/19/2023	4/20/2023 06:45	<input type="checkbox"/>
23040743-18	Lot Blank-2023419	Air		4/19/2023	4/20/2023 06:45	<input type="checkbox"/>

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**Client:** TETRATECH-CHICAGO  
**Project:** Richmond Industrial Fire; ALS-100 Mod. 1  
**Work Order:** 23040743

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**Case Narrative**

Contact ALS for a complete list of accreditations. Accreditation does not constitute approval or endorsement by any accrediting body or agency of the federal government.

Sample collection is performed outside ALS and is the sole responsibility of the client. If sample collection or submission deviates from any method requirement results cannot be interpreted according to the method. Results apply only to portions of samples analyzed. Samples disposed after 60 day archive.

All analytical data (results) and technical content (comments) related to the preparation and analysis of the samples stated herein is the responsibility of the analyst. Raw data is reviewed and validated by a qualified peer analyst and imported into the Laboratory Information Management System (LIMS) where it is formatted by the cover letter signatory charged with compiling and sending the final LIMS generated report to the client.

Samples prepared and analyzed in accordance with NIOSH Method 7400 Issue 3 outlined in the NIOSH Manual of Analytical Methods (NMAM), and dated 6/14/2019. ALS adheres to all QA/QC guidelines set forth in this method. The QA/QC officer maintains all laboratory quality data.

ALS LIMS Method Code "PCM\_N7400" indicates samples analyzed using the counting criteria commonly referred to as the A rules detailed in Appendix B of the method. ALS LIMS Method Code "PCM\_N77152\_FIBER" indicates samples analyzed using the alternate counting rules commonly referred to as the B rules detailed in Appendix C of the method which originated from the NIOSH fibrous glass criteria document NIOSH 77-152 and were added to NIOSH Method 7400, Rev. 2 dated 8/15/87. ALS LIMS Method Codes bearing the suffix "\_IND" were overloaded and per client request were prepared via indirect method detailed in ASTM D5755 which incurs an additional fee and may introduce fiber breakage potentially increasing or decreasing fiber concentrations as compared to original air filters.

This method requires a minimum volume of 400 Liters on a single sample or on consecutive samples and submittal of 2 field blanks (or 10% of the total samples, whichever is greater) per set. NY ELAP requires a minimum sample volume of 900 liters. Results reported are not field blank corrected.

The limit of detection (LOD) for this method is 7 Fibers/mm<sup>2</sup> for a sample volume of 1200 Liters in an area free of interferences. Since client sample volumes and pass/fail criteria vary, results are reported in calculated fibers/mm<sup>2</sup> and fibers per filter. When air volumes (L) are supplied by the client via the chain of custody results are also reported in fibers/cc (fibers/mL).

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**Client:** TETRATECH-CHICAGO  
**Project:** Richmond Industrial Fire; ALS-100 Mod. 1  
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## Case Narrative

Asbestos fibers cannot be distinguished from other fibers by PCM. Counts and concentrations listed in this report include all fiber types and represent the maximum concentrations. Transmission electron microscopy (TEM) is required to positively identify and distinguish specific airborne fiber species.

### ALS PCM ANALYST CV/Sr VALUES;

>6<=24 fib/mm2: AS=0.25, PH=0.24, HS=0.53, MS=0.52, LAB=0.52

>24<=61 fib/mm2: AS=0.19, PH=0.24, HS=0.25, MS=0.25, LAB=0.24

>61<=121 fib/mm2: AS=0.12, PH=0.25, HS=0.12, MS=0.25, LAB=0.13

>121 fib/mm2: AS=0.25, PH=0.25, HS=0.12, MS=0.25, LAB=0.12

## ALS Environmental

Date: 20-Apr-23

**Client:** TETRATECH-CHICAGO  
**Project:** Richmond Industrial Fire; ALS-100 Mod. 1

**Work Order:** 23040743

**Lab ID:** 23040743-15A  
**Client Sample ID:** RIF-LB02-ABZ-20230419

**Collection Date:** 4/19/2023

**Matrix:** AIR

**AirVolume (L):** 983.15

Analyses	Result	Report Limit	Analytical Results
<b>FIBERS BY PCM NIOSH 7400 MOD.</b>		<b>N7400</b>	Analysis Date: 4/20/2023 Analyst: <b>PMH</b>
Number of fibers	4.5		
Number of fields	100		
Fiber/field	0.045		
Fibers/mm2	<7	7	
Fiber/filter	<2695	2695	
<b>Fiber/cc</b>	<b>&lt;0.0027</b>		

**Note:**

# ALS Environmental

Date: 20-Apr-23

**Client:** TETRATECH-CHICAGO

**Work Order:** 23040743

**Project:** Richmond Industrial Fire; ALS-100 Mod. 1

## QC BATCH REPORT

Batch ID: **R215604** Instrument ID **PCM1** Method: **N7400**

MBLK				Sample ID: <b>MBLANK-R215604</b>		Units:		Analysis Date: <b>4/20/2023</b>		
Client ID:				Run ID: <b>PCM1_230420A</b>		SeqNo: <b>3023009</b>		Prep Date: <b>4/20/2023</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Number of fibers	ND	0								
Number of fields	100	0								
Fiber/field	ND	0								
Fibers/mm2	ND	7.0								
Fiber/filter	ND	2,700								
Fiber/cc	ND	0								

DUP				Sample ID: <b>23040743-15A DUP</b>		Units:		Analysis Date: <b>4/20/2023</b>		
Client ID: <b>RIF-LB02-AB2-20230419</b>				Run ID: <b>PCM1_230420A</b>		SeqNo: <b>3023008</b>		Prep Date: <b>4/20/2023</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Number of fibers	4	0	0	0	0			0		
Number of fields	100	0	0	0	0			0		
Fiber/field	0.04	0	0	0	0			0		
Fibers/mm2	5.1	7.0	0	0	0			0		
Fiber/filter	1964	2,700	0	0	0			0		
Fiber/cc	0.002	0	0	0	0			0		

The following samples were analyzed in this batch:

23040743-15A

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** TETRATECH-CHICAGO  
**Project:** Richmond Industrial Fire; ALS-100 Mod. 1  
**WorkOrder:** 23040743

**QUALIFIERS,  
ACRONYMS, UNITS**

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

<u>Acronym</u>	<u>Description</u>
DUP	Method Duplicate
E	EPA Method
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SDL	Sample Detection Limit
SW	SW-846 Method

<u>Units Reported</u>	<u>Description</u>
count	
Fibers/cc	
Fibers/mm2	

## Sample Receipt Checklist

Client Name: **TETRATECH-CHICAGO**

Date/Time Received: **20-Apr-23 06:45**

Work Order: **23040743**

Received by: **PMH**

Checklist completed by **Danielle Strasinger**

20-Apr-23

Reviewed by: **Danielle Strasinger**

20-Apr-23

eSignature

Date

eSignature

Date

Matrices:

Carrier name: Client

Shipping container/cooler in good condition? Yes ☒ No ☐ Not Present ☐

Custody seals intact on shipping container/cooler? Yes ☐ No ☐ Not Present ☒

Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒

Chain of custody present? Yes ☒ No ☐

Chain of custody signed when relinquished and received? Yes ☒ No ☐

Chain of custody agrees with sample labels? Yes ☒ No ☐

Samples in proper container/bottle? Yes ☒ No ☐

Sample containers intact? Yes ☒ No ☐

Sufficient sample volume for indicated test? Yes ☒ No ☐

All samples received within holding time? Yes ☒ No ☐

Container/Temp Blank temperature in compliance? Yes ☒ No ☐

Sample(s) received on ice? Yes ☐ No ☒

Temperature(s)/Thermometer(s):

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage:

Water - VOA vials have zero headspace? Yes ☐ No ☐ No VOA vials submitted ☐

Water - pH acceptable upon receipt? Yes ☐ No ☐ N/A ☐

pH adjusted? Yes ☐ No ☐ N/A ☐

pH adjusted by:

Login Notes:

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Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:



# ANALYTICAL REQUEST FORM

**ALS Laboratory Group**  
ANALYTICAL CHEMISTRY & TESTING SERVICES



1. ☐ REGULAR Status

☒ RUSH Status Requested - ADDITIONAL CHARGE  
RESULTS REQUIRED BY 2 PM 4/20/2023  
DATE  
CONTACT ALS DATACHEM PRIOR TO SENDING SAMPLES

2. Date 04/19/2023 Purchase Order No. \_\_\_\_\_

3. Company Name Tetra Tech - Chicago

Address 15 Wacker Dr. - 37th Fl

Chicago, IL 60606

Person to Contact Bruce Welch

Telephone \_\_\_\_\_

Fax Telephone \_\_\_\_\_

E-mail Address \_\_\_\_\_

Billing Address \_\_\_\_\_

Same as above

4. Quote No. ALS-100 Mod.1

ALS Project Manager Danielle Strasinger

5. Sample Collection

Sampling Site Richmond Industrial Fire

Industrial Process \_\_\_\_\_

Date of Collection 04/19/2023

Time Collected \_\_\_\_\_

Date of Shipment \_\_\_\_\_

Chain of Custody No. \_\_\_\_\_

## 6. REQUEST FOR ANALYSES

Laboratory Use Only	Client Sample Number	Matrix*	Sample Volume	ANALYSES REQUESTED - Use method number if known	Units**
<u>01</u>	<u>RIF-PA01-HV-20230419-a</u>	<u>A</u>	<u>4617.46 L</u>	<u>NIOSH 7402</u>	
<u>02</u>	<u>RIF-PA01-LV-20230419-a</u>		<u>1365.06 L</u>		
<u>03</u>	<u>RIF-PA01-LV-20230419-b</u>		<u>1392.84 L</u>		
<u>04</u>	<u>RIF-PA02-HV-20230419</u>		<u>5360.23 L</u>		
<u>05</u>	<u>RIF-PA02-LV-20230419</u>		<u>1414.73 L</u>		
<u>06</u>	<u>RIF-PA03-HV-20230419</u>		<u>4536.42 L</u>		
<u>07</u>	<u>RIF-PA03-LV-20230419</u>		<u>1458.80 L</u>		
<u>08</u>	<u>RIF-PA04-HV-20230419</u>		<u>4379.48 L</u>		
<u>09</u>	<u>RIF-PA04-LV-20230419</u>		<u>1317.29 L</u>		
<u>10</u>	<u>RIF-WW01-HV-20230419</u>	<u>V</u>	<u>3783.81 L</u>		

\* Specify: Solid sorbent tube, e.g. Charcoal; Filter type; Impinger solution; Bulk sample; Blood; Urine; Tissue; Soil; Water; Other

\*\* 1. mg/sample 2. mg/m<sup>3</sup> 3. ppm 4. % 5. \_\_\_\_\_ (other) Please indicate one or more units in the column entitled Units\*\*

Comments \_\_\_\_\_

Possible Contamination and/or Chemical Hazards \_\_\_\_\_

Relinquished by Sydra Parker

Date/Time 4/20/23

Received by Danielle Hoxen

Date/Time 4/20/23 @ 6:45 AM

Relinquished by \_\_\_\_\_

Date/Time \_\_\_\_\_

Received by \_\_\_\_\_

Date/Time \_\_\_\_\_

Relinquished by \_\_\_\_\_

Date/Time \_\_\_\_\_

Received by \_\_\_\_\_

Date/Time \_\_\_\_\_

4388 Glendale Milford Rd, Cincinnati, OH 45242

800-280-8071 or 800-458-1943 / FAX: 513-733-5347

ALS Laboratory Group

# ANALYTICAL REQUEST FORM

**ALS Laboratory Group**

ANALYTICAL CHEMISTRY & TESTING SERVICES



1. ☐ REGULAR Status

☒ RUSH Status Requested - ADDITIONAL CHARGE

RESULTS REQUIRED BY 2 PM 04/20/2023

DATE

CONTACT ALS DATACHEM PRIOR TO SENDING SAMPLES

2. Date 04/19/2023 Purchase Order No. \_\_\_\_\_

3. Company Name Tetra Tech - Chicago

Address 1 S Wacker - 37th Fl

Chicago, IL 60606

Person to Contact Bruce Welch

Telephone \_\_\_\_\_

Fax Telephone \_\_\_\_\_

E-mail Address \_\_\_\_\_

Billing Address \_\_\_\_\_

Same as above

4. Quote No. ALS-100 Mod. 1

ALS Project Manager Danielle Strasinger

5. Sample Collection

Sampling Site Richmond Industrial Fire

Industrial Process \_\_\_\_\_

Date of Collection 04/19/2023

Time Collected \_\_\_\_\_

Date of Shipment \_\_\_\_\_

Chain of Custody No \_\_\_\_\_

## 6. REQUEST FOR ANALYSES

Laboratory Use Only	Client Sample Number	Matrix*	Sample Volume	ANALYSES REQUESTED - Use method number if known	Units**
<u>11 RIF</u>	<u>RIF-UN01-LV-20230419</u>	<u>A</u>	<u>1512.77 L</u>	<u>NIOSH 7402</u>	
<u>12 LSA</u>	<u>RIF-CA02-HV-20230419</u>	<u>1</u>	<u>4868.85 L</u>	<u>↓</u>	
<u>13 LSA</u>	<u>RIF-CA02-HV-20230419</u>		<u>4092.48 L</u>	<u>↓</u>	
<u>14 LSA</u>	<u>RIF-LB01-ABZ-20230419</u>		<u>986.05 L</u>	<u>↓</u>	
<u>15 LSA</u>	<u>RIF-LB02-ABZ-20230419</u>		<u>983.15 L</u>	<u>NIOSH 7400</u>	
<u>16 LSA</u>	<u>RIF-LB01-CB2-20230419</u>		<u>1000.99 L</u>	<u>NIOSH 7402</u>	
<u>17 LSA</u>	<u>Equipment Blank-20230419</u>			<u>↓</u>	
<u>18 LSA</u>	<u>Lot Blank-20230419</u>	<u>↓</u>			

\* Specify: Solid sorbent tube, e.g. Charcoal; Filter type; Impinger solution; Bulk sample; Blood; Urine; Tissue; Soil; Water; Other

\*\* 1. mg/sample 2. mg/m<sup>3</sup> 3. ppm 4. % 5. \_\_\_\_\_ (other) Please indicate one or more units in the column entitled Units\*\*

Comments \_\_\_\_\_

Possible Contamination and/or Chemical Hazards \_\_\_\_\_

Relinquished by Sydra Parker

Date/Time 4/20/23

Received by Danette Horner

Date/Time 4/20/23 @ 6:45 AM

Relinquished by \_\_\_\_\_

Date/Time \_\_\_\_\_

Received by \_\_\_\_\_

Date/Time \_\_\_\_\_

Relinquished by \_\_\_\_\_

Date/Time \_\_\_\_\_

Received by \_\_\_\_\_

Date/Time \_\_\_\_\_

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ALS Laboratory Group