Bo Li, Ph. D.
6 Garfield Way
Newark, DE 19713
Nov 5th, 2014

Smita Sumbaly
Chemist, QA/QC Specialist
Weston Solutions, Inc.
1090 King Georges Post Road
Edison, NJ 08837

Subject: RFP 303 Package for TEM NIOSH 7402 and PCM NIOSH 7400 Analyses

Dear Smita Sumbaly:

Pease find included the hardcopy data package for RFP# 303 requested for analysis by both TEM NIOSH 7402 and PCM NIOSH 7400. This is the first part of the package of the above said analysis. Samples received on Oct. 30th and after are not include. Please let me know should you have any concerns.

Best wishes,

Bo Li, Ph. D.
Laboratory Manager

Batta Data Package Checklist

Company:	Batta Laboratories, Inc.	**EPA ID#:**	DE 004
EPA CASE#:	RFP 303	**LAB PROJ#:**	L6888J
EPA SDG#:	N/A	**Date Received:**	MULTIPLE
Total Units:	12	**Revision #:**	INITIAL

Data Package Type: ☐ Particle Size ☐ Moisture ☐ PLM ☒ PCM ☒ TEM

Sample Matrix: ☐ Bulk ☐ Soil ☒ Air ☐ Water

X	COC	X	Prep Sheet	N/A	EDD
X	QA Data	X	Bench Sheet	N/A	MISC.

Case Narrative:

This data package is pertinent to 12 sample units under the EPA order RFP# 303 through Weston Solutions, Inc. Date of sample receiving and sample conditions, together with sample matrix information were documented on the client provided COC(s) and/or custody forms. These samples were submitted for analysis by the NIOSH 7400 (PCM) and NIOSH 7402 (TEM) methods. This data package only contains samples analyzed in Oct. 2014 that include samples collected both in Sept. 2014 and Oct. 2014. The batch collected on Oct. 30, 2014 is not included, and will be submitted later.

This data package contains the analyses by the NIOSH 7400 PCM and NIOSH 7402 TEM methods. Please refer to the Counting Rules, Data Validation and Calculation section of this package for information on limit of detection and on how results were calculated and reported.

The detection limit of NIOSH 7400 method is 5.5 fibers or roughly 7 f/mm^2. Although the detection limit by the NIOSH 7400 method is 1 fiber above 95% of expected mean blank value, lab uses 0.5 fiber to calculate the fiber concentration when there is no fibers detected during the analysis for the fact that 0.5 fiber is the very basic fiber counting unit. Please refer to the data valudiaotn section for further information on how the reulsts were calculated based on initial PCM counts.

The data package contains a hardcopy report, and is organized with sections in the following manner: Batta Check List (w/ case narratives), Summary Report of Analysis, Field COC, Miscellaneous, Data Validation and Calculation, Reanalysis, Calibrations and Routines, and Analytical Benchsheets.

Please direct all technical inquiries to: Bo Li, Ph. D., Batta Laboratories, Inc., Delaware Industrial Park, 6 Garfield Way, Newark, DE 19713; or at E-mail: bo.li@battaenv.com.

Signature:		**Title:**	Manager
Print Name:	Bo Li	**Date:**	11/05/2014

SUMMARY REPORT OF ANALYSIS

BY

NIOSH 7400, ISSUE 2: 15 AUGUST, 1994
NIOSH 7402, ISSUE 2: 15 AUGUST, 1994

Summary Report for PCM Analysis*

Start Time	End Time	Total Minutes	Flow Rate	Volume	Fibers	Fields	F/mm2	F/cc	8Hr TWA	Lab Sample#	Client Sample#
N/A	NA	0	0	0	0.5	100	0.637	N/A	N/A	802404	FB-100214-01
N/A	NA	0	0	0	0	100	0.000	N/A	N/A	802405	LOTB-100214-001
N/A	NA	240	2.5905	621.72	4.5	100	5.732	<0.004	<0.002	802406	P0001-AS04-093014
N/A	NA	321	2.6865	620.58	1	100	1.274	<0.004	<0.003	802407	P0001-AS05-093014
N/A	NA	232	2.6135	606.33	7.5	100	9.554	0.006	0.003	802406	P0001-AS06-093014
N/A	NA	240	2.4995	599.88	3.5	100	4.459	<0.004	<0.002	802409	P0001-AS07-100214
N/A	NA	242	2.4795	600.04	4	100	5.096	<0.004	<0.002	802410	P0001-AS08-100214
N/A	NA	245	2.714	664.93	8	100	10.191	0.006	0.003	802411	P0001-AS09-100214
N/A	NA	0	0	0.00	0	100	0.000	N/A	N/A	803185	FB-101314-001
N/A	NA	223	2.461	548.80	2	100	2.548	<0.005	<0.002	803186	PAS01-101314
N/A	NA	0	0	0.00	2	100	2.548	N/A	N/A	803546	FB-102314-001
N/A	NA	235	2.11	496.09	4	100	5.096	<0.005	<0.002	803547	PAS01-102314

*Note: Samples in the summary include only those analyzed in Oct., 2014. Samples that were received in the later part of Oct. may not be included in this summary.

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E.P.A. LAB ID # DE 004

A.I.H.A. /NLLAP #100448

NVLAP #101032

CERTIFICATE OF PCM ANALYSIS

Test Method: NIOSH 7400, Issue 2: 15 August 1994

Report Date: 10/6/2014

Sampling Data

BLI Project#: L6888J

Project Name: WESTON SOLUTIONS-RFP NO. 303-EP-S2-14-01

Date Sampled: 10/2/14

Sampled By: CLIENT

Date Analyzed: 10/4/14

Analytical Parameters

Effective Filter Area (mm ^{2}): 385

Graticule Field Area(mm ^{2}): 0.00785

Lab Sample #	Client Sample #	Sample Type	Sample Volume(L)	Fields	Fibers	Detection Limit(F/cc)	Test Results F/mm ^{2}	Test Results F/cc
802404	FB-100214-001	FB	0	100	<5.5	N/A	<7.0	N/A
802405	LOTB-100214-001	LB	0	100	<5.5	N/A	<7.0	N/A
802406	P0001-AS04-0930	FS	621.7	100	<5.5	0.004	<7.0	<0.004
802407	P0001-AS05-0930	FS	620.6	100	<5.5	0.004	<7.0	<0.004
802408	P0001-AS06-0930	FS	606.3	100	7.5	0.004	9.6	0.006
802409	P0001-AS07-1002	FS	599.9	100	<5.5	0.004	<7.0	<0.004

ANALYST: A. YOHN

REVIEWED BY:

* Sample results listed above are not blank-corrected.
* Results pertain only to the items tested.
* This report does not constitute endorsement by AIHA and/or any other U.S. government agencies.
* Named analyst may not be sole analyst. Refer to Chain of Custody for additional analysts.
* Sample volumes are calculated from data supplied by the client. Batta Laboratories, Inc. does not accept liability for results expressed in fibers per cubic centimeter. Furthermore, Batta Laboratories assumes no responsibility for the accuracy of results reflected by the use of improper collection techniques or equipment.
* Current YTD intralaboratory Sr value is 0.22. This value may change slightly over time.

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CERTIFICATE OF PCM ANALYSIS

Test Method: NIOSH 7400, Issue 2: 15 August 1994

Report Date: 10/6/2014

Sampling Data

BLI Project#: L6888J
Project Name: WESTON SOLUTIONS-RFP NO. 303-EP-S2-14-01

Date Sampled: 10/2/14
Sampled By: CLIENT
Date Analyzed: 10/4/14

Analytical Parameters

Effective Filter Area (mm ^{2}): 385

Graticule Field Area(mm ^{2}): 0.00785

Lab Sample #	Client Sample #	Sample Type	Sample Volume(L)	Fields	Fibers	Detection Limit(F/cc)	Test Results F/mm ^{2}	Test Results F/cc
802410	P0001-AS08-1002	FS	600	100	<5.5	0.004	<7.0	<0.004
802411	P0001-AS09-1002	FS	664.9	100	8	0.004	10.2	0.006

ANALYST: A. YOHN

REVIEWED BY:

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NVLAP #101032

CERTIFICATE OF PCM ANALYSIS

Test Method: NIOSH 7400, Issue 2: 15 August 1994

Report Date: 11/5/2014

Sampling Data

BLI Project#: L6888J
Project Name: WESTON SOLUTIONS-RFP NO. 303-EP-S2-14-01

Date Sampled: 10/13/14
Sampled By: CLIENT
Date Analyzed: 10/16/14

Analytical Parameters

Effective Filter Area (mm ^{2}): 385

Graticule Field Area(mm ^{2}): 0.00785

Lab Sample #	Client Sample #	Sample Type	Sample Volume(L)	Fields	Fibers	Detection Limit(F/cc)	Test Results F/mm ^{2}	Test Results F/cc
803185	FB-101314-001	FB	0	100	<5.5	N/A	<7.0	N/A
803186	PAS01-101314	FS	548.8	100	<5.5	0.005	<7.0	<0.005

ANALYST: JUDY XU

REVIEWED BY:

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NVLAP #101032

CERTIFICATE OF PCM ANALYSIS

Test Method: NIOSH 7400, Issue 2: 15 August 1994

Report Date: 10/28/2014

Sampling Data

BLI Project#: L6888J

Project Name: WESTON SOLUTIONS-RFP NO. 303-EP-S2-14-01

Date Sampled: 10/23/14

Sampled By: CLIENT

Date Analyzed: 10/27/14

Analytical Parameters

Effective Filter Area (mm ^{2}): 385

Graticule Field Area(mm ^{2}): 0.00785

Lab Sample #	Client Sample #	Sample Type	Sample Volume(L)	Fields	Fibers	Detection Limit(F/cc)	Test Results F/mm ^{2}	Test Results F/cc
803546	FB-102314-001	FB	0	100	<5.5	N/A	<7.0	N/A
803547	PAS01-102314	FS	496.1	100	<5.5	0.005	<7.0	<0.005

ANALYST: JUDY XU

REVIEWED BY:

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NVLAP #101032

SAMPLE SUMMARY REPORT

Revision#:

COC#: MULTIPLE

Batch # : MULTIPLE Test Method: NIOSH 7402 (Issue 2: 15 August 1994) Prep Method: NIOSH 7402 (Issue 2: 15 August 1994)

General Information

Instruments: Scope Model: JEM-100CX-II Magnification: 19,000 Operational Condition: Normal
Analyzer: Kevex Det. Area: 10 mm² Det. Window: 0.000 mm

BLI Project #: L6888J
Project Name: WESTON SOLUTIONS, INC. - RFP# 303 **Sampling Location:** PR OLEFINS REMOVAL/SITE 0001-0005
Date Sampled: MULTIPLE **Sampled by:** CLIENT **Date Received:** MULTIPLE **Report Date:** MULTIPLE

Analytical Data

Note: Results provided in this summary report do not have to agree with those obtained from the EPA NADES EDD report.

Primary Filter Area (mm²): 385 **2nd Filter Area (mm²):** N/A **Media:** MCE **Grid Area (mm²):** 0.0094
Date Prepped: MULTIPLE **Prepped By:** JX/ARY **Date Analyzed:** MULTIPLE **Analyzed By:** JX/ARY

Sample ID and Prep Information					Analytical Data				Results		
Lab Sample Number	Field Sample Number	Sample QA Type-Prep Type	Dilution Factor	Air Volume (L) / PCM Fields / PCM Fibers	# of Grid Openings / Area Analyzed (mm²) / Total # of TEM PCME Fibers	Total # of Asb. by TEM / Asb. Fiber Ratio / f/cc by PCM	Asbestos Mineral Type Detected	Target Sensitivity (f/cc)	Reported Sensitivity (f/cc)	Reported Air Concentration (f/cc)	Reported Filter Density (f/mm²)
602412	FB-100214-001	FIELD BLANK DIRECT	1	0 / 100 / 0.5	40 / 0.3760 / 0.0	0.0 / 0.000 / N/A	NON-DETECTED	0.00500	N/A	N/A	< 7.00637
602413	LDT8-100214-001	LDT BLANK DIRECT	1	0 / 100 / 0	40 / 0.3760 / 0.0	0 / 0.000 / N/A	NON-DETECTED	0.00500	N/A	N/A	< 7.00637
602414	P0001-AS04-093014	FIELD SAMPLE DIRECT	1	621.72 / 100 / 4.5	40 / 0.3760 / 0.0	0 / 0.000 / < 0.004	NON-DETECTED	0.00500	0.00165	< 0.00434	< 7.00637
602415	P0001-AS05-093014	FIELD SAMPLE DIRECT	1	620.58 / 100 / 1	40 / 0.3760 / 0.0	0 / 0.000 / < 0.004	NON-DETECTED	0.00500	0.00165	< 0.00435	< 7.00637
602416	P0001-AS06-093014	FIELD SAMPLE DIRECT	1	606.33 / 100 / 7.5	40 / 0.3760 / 0.0	0 / 0.000 / 0.006	NON-DETECTED	0.00500	0.00169	< 0.00445	< 7.00637
602417	P0001-AS07-100214	FIELD SAMPLE DIRECT	1	599.88 / 100 / 3.5	40 / 0.3760 / 0.0	0 / 0.000 / < 0.004	NON-DETECTED	0.00500	0.00171	< 0.00450	< 7.00637
602418	P0001-AS06-100214	FIELD SAMPLE DIRECT	1	600.04 / 100 / 4	40 / 0.3760 / 0.0	0 / 0.000 / < 0.004	NON-DETECTED	0.00500	0.00171	< 0.00450	< 7.00637
602419	P0001-AS09-100214	FIELD SAMPLE DIRECT	1	664.93 / 100 / 8	40 / 0.3760 / 0.0	0 / 0.000 / 0.006	NON-DETECTED	0.00500	0.00154	< 0.00406	< 7.00637
603187	FB-101314-001	FIELD BLANK DIRECT	1	0 / 100 / 0	40 / 0.3760 / 0.0	0 / 0.000 / N/A	NON-DETECTED	0.00500	N/A	N/A	< 7.00637
603188	PAS01-101314	FIELD SAMPLE DIRECT	1	548.8 / 100 / 2	40 / 0.3760 / 6.5	0 / 0.077 / < 0.005	NON-DETECTED	0.00500	0.00187	< 0.00492	< 7.00637

Note: Reported Sensitivity is calculated based on the actual number of asbestos fibers detected in TEM. Asb. (asbestos) Fiber Ratio is the ratio of the number of asbestos over the total number of fibers detected in TEM.

Analyst(s): J. XU

Reviewed By:

*NOTE:

1. LA: Libby Amphibole; AC: Actinolite; TR: Tremolite; CH: Chrysotile; CR: Crocidolite; AN: Anthophyllite; AM: Amosite
2. Indirect sample prep is based on ISO 13794:1999(E): Ambient air-Determination of asbestos fibers-Indirect-transfer transmission electron microscopy method. Refer to sample prep sheets for dilution details.
3. Some samples may be analyzed and/or prepped by multiple instruments, analysts, or on multiple dates. Please refer to the sample prep sheets and analytical benchsheets for details.
4. This summary report may not included all information submitted by clients. Furthermore, Batta will not be responsible for results that are due to improper sample collection and inaccurate data provided by clients.
5. This summery report precedes all electronic versions of any kinds, including copies in full or in part.
6. This summary report does not constitute endorsement by NVLAP and/or any other U.S. government agencies. The test data pertain only to the items tested. No assumptions or conclusions should be made to materials or samples not analyzed.

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E.P.A. LAB ID# DE004

A.I.H.A./NLLAP #100448

NVLAP #101032

SAMPLE SUMMARY REPORT

Revision#:

COC#: MULTIPLE

Batch # : MULTIPLE Test Method: NIOSH 7402 (Issue 2: 15 August 1994) Prep Method: NIOSH 7402 (Issue 2: 15 August 1994)

General Information

Instruments: Scope Model: JEM-100CXII Magnification: 19,000 Operational Condition: Normal
Analyzer: Kevex Det. Area: 10 mm² Det. Window: 0.008 mm

BLI Project #: L6888J

Project Name: WESTON SOLUTIONS, INC. - RFP# 303 **Sampling Location:** PR OLEFINS REMOVAL/SITE 0001-0005

Date Sampled: MULTIPLE **Sampled by:** CLIENT **Date Received:** MULTIPLE **Report Date:** MULTIPLE

Analytical Data

Note: Results provided in this summary report do not have to agree with those obtained from the EPA NADES EDD report.

Primary Filter Area (mm²): 385 **2nd Filter Area (mm²):** N/A **Media:** MCE **Grid Area (mm²):** 0.0094

Date Prepped: MULTIPLE **Prepped By:** JX/ARY **Date Analyzed:** MULTIPLE **Analyzed By:** JX/ARY

Sample ID and Prep Information				Analytical Data					Results			
Lab Sample Number	Field Sample Number	Sample QA Type-Prep Type	Dilution Factor	Air Volume (L) / PCM Fields / PCM Fibers	# of Grid Openings / Area Analyzed (mm²) / Total # of TEM PCME Fibers	Total # of Asb. by TEM / Asb. Fiber Ratio / f/cc by PCM	Asbestos Mineral Type Detected	Target Sensitivity (f/cc)	Reported Sensitivity (f/cc)	Reported Air Concentration (f/cc)	Reported Filter Density (f/mm²)
803548	FB-102314-001	FIELD BLANK DIRECT	1	0 / 100 / 2	40 / 0.3760 / 0.0	0.0 / 0.000 / N/A	NDN-DETECTED	0.00500	N/A	N/A	< 7.00637
803549	PAS01-102314	FIELD SAMPLE DIRECT	1	496.09 / 100 / 4	40 / 0.3760 / 0.5	0 / 1.000 / < 0.005	NON-DETECTED	0.00500	0.00206	< 0.00544	< 7.00637

Note: Reported Sensitivity is calculated based on the actual number of asbestos fibers detected in TEM. Asb. (asbestos) Fiber Ratio is the ratio of the number of asbestos over the total number of fibers detected in TEM.

Analyst(s): J. XU

Reviewed By:

*NOTE:

1. LA: Libby Amphibole; AC: Actinolite; TR: Tremolite; CH: Chrysotile; CR: Crocidolite; AN: Anthophyllite; AM: Amosite
2. Indirect sample prep is based on ISO 13794:1999(E): Ambient air-Determination of asbestos fibers-Indirect-transfer transmission electron microscopy method. Refer to sample prep sheets for dilution details.
3. Some samples may be analyzed and/or prepped by multiple instruments, analysts, or on multiple dates. Please refer to the sample prep sheets and analytical benchsheets for details.
4. This summary report may not included all information submitted by clients. Furthermore, Batta will not be responsible for results that are due to improper sample collection and inaccurate data provided by clients.
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A.I.H.A./NLLAP #100448

NVLAP® NVLAP #101032

CERTIFICATE OF TEM ANALYSIS

NIOSH 7402, Asbestos by TEM

Report Date: 10/6/2014

Sampling Data

BLI Project #: L6888J
Project Name: Weston Solutions
Date Sampled: 9/30 & 10/2/2014
Sampling Location: SITE 0001-0005
Sampled By: CLIENT
Date Received: 10/3/14

Analytical Data

Effective Filter Area (mm^2): 385
Media: MCE
Pore Size (µm): 0.45
Grid Area (mm^2): 0.0094
Date Prepped: 10/4/14
Prepped By: JX/AY
Date Analyzed: 10/4/2014
Analyzed By: AY

Client-Supplied Data					Analytical Data				Results	
Lab Sample #	Client Sample #	Sample Type	Sample Location	Sample Volume (L)	PCM (fibers/cc)	PCM (f/mm^2)	TEM Total Fibers (f/cc)	Limit of Detection (f/cc)	Reported Result * (f/cc)	Asbestos Types Detected
802412	FB-100214-001	FIELD BLANK	N/A	0	N/A	0.64	N/A	N/A	N/A	None Detected
802413	LOTB-100214-001	LOT BLANK	N/A	0	N/A	0.00	N/A	N/A	N/A	None Detected
802414	P0001-AS04-093014	FIELD SAMPLE	N/A	621.72	0.004	5.73	0.000	0.004	< 0.004	None Detected
802415	P0001-AS05-093014	FIELD SAMPLE	N/A	620.58	0.001	1.27	0.000	0.004	< 0.004	None Detected
802416	P0001-AS06-093014	FIELD SAMPLE	N/A	606.33	0.006	9.55	0.000	0.004	< 0.004	None Detected
802417	P0001-AS07-100214	FIELD SAMPLE	N/A	599.88	0.003	4.46	0.000	0.004	< 0.004	None Detected
802418	P0001-AS08-100214	FIELD SAMPLE	N/A	600.04	0.003	5.10	0.000	0.004	< 0.004	None Detected
602419	P0001-AS09-100214	FIELD SAMPLE	N/A	664.93	0.006	10.19	0.000	0.004	< 0.004	None Detected

** Reported result is expressed as f/cc Asbestos in the Visible Range.*

**This sample batch contains sample(s) that have volumes below 400L. According to NIOSH 7402, samples with volumes under 400L should not be analyzed by this method.

AY
PCM Analyst

AY
TEM Analyst

Reviewed By:

Results pertain only to the items tested. Lab is not responsible for results expressed in f/cc, which are calculated from volumes supplied by the client. This report may not be duplicated in part without written permission from BATTA Laboratories.

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A.I.H.A./NLLAP #100448

NVLAP #101032

CERTIFICATE OF TEM ANALYSIS

NIOSH 7402, Asbestos by TEM

Report Date: 10/17/2014

Sampling Data

BLI Project #: L6888J
Project Name: WESTON SOLUTIONS - PR OLEFINS REMOVAL **Sampling Location:** SITE# 0001-0005
Date Sampled: 10/13/2014 **Sampled By:** CLIENT **Date Received:** 10/15/14

Analytical Data

Effective Filter Area (mm^2): 385 **Media:** MCE **Pore Size (µm):** 0.80 **Grid Area (mm^2):** 0.0090
Date Prepped: 10/16/14 **Prepped By:** JX **Date Analyzed:** 10/16/2014 **Analyzed By:** JX

Client-Supplied Data					Analytical Data				Results	
Lab Sample #	Client Sample #	Sample Type	Sample Location	Sample Volume (L)	PCM (fibers/cc)	PCM (f/mm²)	TEM Total Fibers (f/cc)	Limit of Detection (f/cc)	Reported Result * (f/cc)	Asbestos Types Detected
803187	FB-101314-001	AIR	NA	0	N/A	0.00	N/A	N/A	N/A	None Detected
803188	PAS01-101314	AIR	NA	548.8	0.002	2.55	0.013	0.005	< 0.005	None Detected

** Reported result is expressed as f/cc Asbestos in the Visible Range.*

**This sample batch contains sample(s) that have volumes below 400L. According to NIOSH 7402, samples with volumes under 400L should not be analyzed by this method.

JX
PCM Analyst

J. XU
TEM Analyst

Reviewed By:

Results pertain only to the items tested. Lab is not responsible for results expressed in f/cc, which are calculated from volumes supplied by the client. This report may not be duplicated in part without written permission from BATTA Laboratories.

Dedicated to a Cleaner Environment Since 1982

BATTA LABORATORIES, INC.
A Certified MBE Company

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E.P.A. LAB ID# DE004

A.I.H.A./NLLAP #100448

NVLAP® NVLAP #101032

CERTIFICATE OF TEM ANALYSIS

NIOSH 7402, Asbestos by TEM

Report Date: 10/28/2014

Sampling Data

BLI Project #: L6888J
Project Name: WESTON SOLUTION-RR OLEFINS REMOVAL **Sampling Location:** RR OLEFINS REMOVAL
Date Sampled: 10/23/2014 **Sampled By:** CLIENT **Date Received:** 10/24/14

Analytical Data

Effective Filter Area (mm^2): 385 **Media:** MCE **Pore Size (µm):** 0.80 **Grid Area (mm^2):** 0.0090
Date Prepped: 10/27/14 **Prepped By:** JX **Date Analyzed:** 10/27/2014 **Analyzed By:** JX

Client-Supplied Data					Analytical Data				Results	
Lab Sample #	Client Sample #	Sample Type	Sample Location	Sample Volume (L)	PCM (fibers/cc)	PCM (f/mm^2)	TEM Total Fibers (f/cc)	Limit of Detection (f/cc)	Reported Result * (f/cc)	Asbestos Types Detected
803548	FB-102314-001	TEM	NA	0	N/A	2.55	N/A	N/A	N/A	None Detected
803549	PAS01-102314	TEM	NA	496.09	0.004	5.10	0.001	0.005	< 0.005	None Detected

** Reported result is expressed as f/cc Asbestos in the Visible Range.*

**This sample batch contains sample(s) that have volumes below 400L. According to NIOSH 7402, samples with volumes under 400L should not be analyzed by this method.

JX
PCM Analyst

J. XU
TEM Analyst

Reviewed By:

Results pertain only to the items tested. Lab is not responsible for results expressed in f/cc, which are calculated from volumes supplied by the client. This report may not be duplicated in part without written permission from BATTA Laboratories.

FIELD COC

USEPA
DateShipped: 10/2/2014
CarrierName: FedEx
AirbillNo: 8000 9357 9235

CHAIN OF CUSTODY RECORD
Site #: 0001-0005
Contact Name: Smita Sumbaly
Contact Phone: 732-585-4410

No: 2-100214-00010005-0001
Cooler #: 001
Lab: Batta environmental Associates, Inc.
Lab Phone: 302-737-3376

Lab #	Sample #	Location	Analyses	Matrix	Collected	Sample Time	Numb Cont	Volume	Vol Units	Total_Time	Avg_Flow	Flow_Units
80242	FB-100214-001	DustTrak	Asbestos (PCM&TEM)	Air	10/2/2014	14:55	1		Liters			L/min
413	LOTB-100214-001	DustTrak	Asbestos (PCM&TEM)	Air	10/2/2014	14:50	1		Liters			L/min
414	P0001-AS04-093014	DustTrak 1	Asbestos (PCM&TEM)	Air	9/30/2014	14:30	1	621.72	Liters	240	2.5905	L/min
415	P0001-AS05-093014	DustTrak 2	Asbestos (PCM&TEM)	Air	9/30/2014	14:21	1	620.58	Liters	231	2.6865	L/min
416	P0001-A606-093014	DustTrak 3	Asbestos (PCM&TEM)	Air	9/30/2014	14:22	1	606.33	Liters	232	2.6135	L/min
417	P0001-AS07-100214	DustTrak 1	Asbestos (PCM&TEM)	Air	10/2/2014	14:30	1	599.88	Liters	240	2.4995	L/min
418	P0001-AS08-100214	DustTrak 2	Asbestos (PCM&TEM)	Air	10/2/2014	14:32	1	600.04	Liters	242	2.4795	L/min
419	P0001-AS09-100214	DustTrak 3	Asbestos (PCM&TEM)	Air	10/2/2014	14:35	1	664.93	Liters	245	2.714	L/min

Special Instructions: Total Sampling time units in minutes.
Turnaround time 72 hrs.
Provide TWA calculations.
RFP#: 303

TEM QC.

SAMPLES TRANSFERRED FROM

CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
All Transf	Carlos Hurst	10/2/14	Bonnie Hzi	10/3/14	1000						

RFP# 303: TEM by NIOSH 7402 and PCM by NIOSH 7400

BATT LABORATORIES, INC.

USEPA
DateShipped: 10/13/2014
CarrierName: FedEx
AirbillNo: 800093579268

CHAIN OF CUSTODY RECORD
PR Olefins Removal
Contact Name: Smita Sumbaly
Contact Phone: 732-585-4410

No: 2-101314-00010005-0001
Cooler #: 001
Lab: Batta environmental Associates, Inc.
Lab Phone: 302-737-3376

Lab #	Sample #	Location	Analyses	Matrix	Collected	Sample Time	Numb Cont	Volume	Vol Units	Total_Time	Avg_Flow	Flow_Units
803187	FB-101314-001	DustTraksArea	Asbestos (PCM&TEM)	Air	10/13/2014	14:31	1		Liters			L/min
↓ 188	PAS01-101314	DustTraksArea	Asbestos (PCM&TEM)	Air	10/13/2014	14:31	1	548.8	Liters	223	2.461	L/min

Special Instructions: Total Sampling time units in minutes.
Turnaround time 72 hrs.
Provide TWA calculations.
RFP#: 303

TEM ~~PCM~~ COC

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
All transf	Angel Allred	10-13-14	Bonnie Mei BATTA LABORATORIES	10/15/14 @ 1020	ACCEPTABLE

RFP# 303: TEM by NIOSH 7402 and PCM by NIOSH 7400

BATT LABORATORIES, INC.

USEPA
DateShipped: 10/23/2014
CarrierName: FedEx
AirbillNo: 800093579279

CHAIN OF CUSTODY RECORD
PR Olefins Removal
Contact Name: Smita Sumbaly
Contact Phone: 732-585-4410

No: 2-102314-00010005-0001
Cooler #: 001
Lab: Batta environmental Associates, Inc.
Lab Phone: 302-737-3376

Lab #	Sample #	Location	Analyses	Matrix	Collected	Sample Time	Numb Cont	Volume	Vol Units	Total_Time	Avg_Flow	Flow_Units
503548	FB-102314-001	DustTraksArea	Asbestos (PCM&TEM)	Air	10/23/2014	13:45	1		Liters			L/min
503549	PAS01-102314	DustTraksArea	Asbestos (PCM&TEM)	Air	10/23/2014	13:45	1	496.09	Liters	235	2.111	L/min

Special Instructions: Total Sampling time units in minutes.
Turnaround time 72 hrs.
Provide TWA calculations.
RFP#: 303

TEM WOC.

SAMPLES TRANSFERRED FROM

CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
All transf		10-23-14		10/24/14 1030	Good

RFP# 303: TEM by NIOSH 7402 and PCM by NIOSH 7400

BATT LABORATORIES, INC.

USEPA
DateShipped: 10/2/2014
CarrierName: FedEx
AirbillNo: 8000 9357 9235

CHAIN OF CUSTODY RECORD
Site #: 0001-0005
Contact Name: Smita Sumbaly
Contact Phone: 732-585-4410

No: 2-100214-00010005-0001
Cooler #: 001
Lab: Batta environmental Associates, Inc.
Lab Phone: 302-737-3376
10/4/14

Lab #	Sample #	Location	Analyses	Matrix	Collected	Sample Time	Numb Cont	Volume	Vol Units	Total_Time	Avg_Flow	Flow_Units	
802404	FB-100214-001	DustTrak	Asbestos (PCM&TEM)	Air	10/2/2014	14:55	1		Liters			L/min 0.5/100	
405	LOTB-100214-001	DustTrak	Asbestos (PCM&TEM)	Air	10/2/2014	14:50	1		Liters			L/min 0/100	
406	P0001-AS04-093014	DustTrak 1	Asbestos (PCM&TEM)	Air	9/30/2014	14:30	1	621.72	Liters	240	2.5905	L/min 4.5/100	<0.004
407	P0001-AS05-093014	DustTrak 2	Asbestos (PCM&TEM)	Air	9/30/2014	14:21	1	620.58	Liters	231	2.6865	L/min 1/100	<0.004
408	P0001-AS06-093014	DustTrak 3	Asbestos (PCM&TEM)	Air	9/30/2014	14:22	1	606.33	Liters	232	2.6135	L/min 7.5/100	0.006
409	P0001-AS07-100214	DustTrak 1	Asbestos (PCM&TEM)	Air	10/2/2014	14:30	1	599.88	Liters	240	2.4995	L/min 3.5/100	<0.004
410	P0001-AS08-100214	DustTrak 2	Asbestos (PCM&TEM)	Air	10/2/2014	14:32	1	600.04	Liters	242	2.4795	L/min 4/100	<0.004
~~411~~ 411	P0001-AS09-100214	DustTrak 3	Asbestos (PCM&TEM)	Air	10/2/2014	14:35	1	664.93	Liters	245	2.714	L/min 8/100	0.006
BM 10/3/14													

TWA
DustTrak 1 <0.004
" 2 <0.004
" 3 0.006

Special Instructions: Total Sampling time units in minutes.
Turnaround time 72 hrs.
Provide TWA calculations. per COC
RFP#: 303

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
All Transit	Carlos Hurst	10/2/14	Bonnie Mei	10/3/14	1000						

RFP# 303: TEM by NIOSH 7402 and PCM by NIOSH 7400

BATT LABORATORIES, INC.

USEPA

DateShipped: 10/13/2014
CarrierName: FedEx
AirbillNo: 800093579268

CHAIN OF CUSTODY RECORD

PR Olefins Removal
Contact Name: Smita Sumbaly
Contact Phone: 732-585-4410

No: 2-101314-00010005-0001

Cooler #: 001
Lab: Batta environmental Associates, Inc.
Lab Phone: 302-737-3376

Lab #	Sample #	Location	Analyses	Matrix	Collected	Sample Time	Numb Cont	Volume	Vol Units	Total_Time	Avg_Flow	Flow_Units
803185	FB-101314-001	DustTraksArea	Asbestos (PCM&TEM)	Air	10/13/2014	14:31	1		Liters			L/min 0/100
↓ 186	PAS01-101314	DustTraksArea	Asbestos (PCM&TEM)	Air	10/13/2014	14:31	1	548.8	Liters	223	2.461	L/min 2/100 <0.05

Special Instructions: Total Sampling time units in minutes.
Turnaround time 72 hrs.
Provide TWA calculations.
RFP#: 303

PCM COC

SAMPLES TRANSFERRED FROM

CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
All transf	Angel Allred	10-13-14	Bonnie Mu BATTA LABORATORIES	10/13/14 @ 1020	ACCEPTABLE

RFP# 303: TEM by NIOSH 7402 and PCM by NIOSH 7400

BATT LABORATORIES, INC.

USEPA
DateShipped: 10/23/2014
CarrierName: FedEx
AirbillNo: 800093579279

CHAIN OF CUSTODY RECORD
PR Olefins Removal
Contact Name: Smita Sumbaly
Contact Phone: 732-585-4410

No: 2-102314-00010005-0001
Cooler #: 001
Lab: Batta environmental Associates, Inc.
Lab Phone: 302-737-3376

Lab #	Sample #	Location	Analyses	Matrix	Collected	Sample Time	Numb Cont	Volume	Vol Units	Total_Time	Avg_Flow	Flow_Units
803546	FB-102314-001	DustTraksArea	Asbestos (PCM&TEM)	Air	10/23/2014	13:45	1		Liters		2/min	L/min
803547	PAS01-102314	DustTraksArea	Asbestos (PCM&TEM)	Air	10/23/2014	13:45	1	496.09	Liters	235	2.111 4/min	L/min
												~~<0.01~~ Cmp 10/28/14
												<0.005
												<0.002 TWA

Special Instructions: Total Sampling time units in minutes.
Turnaround time 72 hrs.
Provide TWA calculations.
RFP#: 303

PCM VOC

SAMPLES TRANSFERRED FROM

CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
All transf		10-23-14		10/24/14 1030	Good

RFP# 303: TEM by NIOSH 7402 and PCM by NIOSH 7400

BATT LABORATORIES, INC.

Lab Prep Sheet

TEM SAMPLE PREP SHEET

Batch#/Proj#: L6888J
Total # of Samples: 8
Sample #: 802404-411
Prep Date: 10/3-10/4/14
TEM File#: 5405
Prep By: JX/ AY

Prep Type (Check One): Direct: [x] Indirect: [ ] Dilution Series: [ ]

Lab Blank (Check): [x]
Effective Filter Area (mm^2): 385
Filter Blank Processed (Y/N): n/a
Lot Blank: [ ]
HCl tested (Y/N): n/a
Method Blank: [ ]

Prep Method (Check One): AHERA: [ ] NIOSH 7402: [x] ISO 13794: [ ]
ASTM: [ ] ISO 10312: [ ]
Libby-08: [ ] EPA 100.2: [ ] Other Methods (specify below):

Total Grids Prepped per Sample: 3
G.O. Size Used (mm^2): 0.0094
Grid Box# and Loc# Assigned: 3091 A → & I

TEM 802412 ↓ 2419

Sample #	Comments	Sample #		Comments
802404				
802405				
802406				
802407				
802408				
802409				
802410				
802411				
Blank				

Is the grid/filter prep acceptable according to the method? Yes: [✓] No: [ ]

Note: Otherwise specified, each aliquot (ml) in a serial dilution shown in the comment column starts with a 100 ml solution. 15/100 or 15 means 15 ml taken from a 100 ml solution, and so forth.

ISO 10312 - ISO 10312:1995(E) Direct Transfer Method; ISO 13794 - ISO 13794:1999(E) Indirect Transfer Method; and ASTM: Dust or Microvac Sample Indirect Prep Method; EPA 100.2 - EPA600/R-94/134 (100.2)

TEM SAMPLE PREP SHEET

Batch#/Proj#: L 6888 T
Total # of Samples: 2
Sample #: 2
Prep Date: 10/16/14
TEM File#: 5423
Prep By: JX

Prep Type (Check One): Direct: [X] Indirect: [✓] Dilution Series: [ ]

Lab Blank (Check): [X]

Effective Filter Area (mm^2): N/A

Lot Blank: [ ]

Method Blank: [✓]

Prep Method (Check One): AHERA: [ ] NIOSH 7402: [ ] ISO 13794: [ ]
ASTM: [ ] ISO 10312: [ ]
Libby-08: [ ] EPA 100.2: [ ] Other Methods (specify below):

Total Grids Prepped per Sample: 3
G.O. Size Used (mm^2):
Grid Box# and Loc# Assigned: 3695 F1 & G2

Sample #	Comments	Sample #		Comments
80317				
80318X				

Is the grid/filter prep acceptable according to the method? Yes [x] No: [ ]

Note: Otherwise specified, each aliquot (ml) in a serial dilution shown in the comment column starts with a 100 ml solution. 15/100 or 15 means 15 ml taken from a 100 ml solution, and so forth.

ISO 10312 - ISO 10312:1995(E) Direct Transfer Method; ISO 13794 - ISO 13794:1999(E) Indirect Transfer Method; and ASTM: Dust or Microvac Sample Indirect Prep Method; EPA 100.2 - EPA600/R-94/134 (100.2)

TEM SAMPLE PREP SHEET

Batch#/Proj#: L6888J
Total # of Samples: See below
Sample #: See below
Prep Date: 10/27/2014
TEM File#: 5432
Prep By: JX JX

Prep Type (Check One): Direct: [X] Indirect: [ ] Dilution Series: [ ]

Lab Blank (Check): [X]

Effective Filter Area (mm^2): N/A

Lot Blank: [ ]

Method Blank: [ ]

Prep Method (Check One): AHERA: [ ] NIOSH 7402: [x] ISO 13794: [ ]
ASTM: [ ] ISO 10312: [ ]
Libby-08: [ ] EPA 100.2: [ ] Other Methods (specify below):

Total Grids Prepped per Sample: 3
G.O. Size Used (mm^2): 0.0131
Grid Box# and Loc# Assigned: 3262S-T &

Sample #	Comments	Sample #		Comments
803548				
803549				

Is the grid/filter prep acceptable according to the method? Yes [x] No: [ ]

Note: Otherwise specified, each aliquot (ml) in a serial dilution shown in the comment column starts with a 100 ml solution. 15/100 or 15 means 15 ml taken from a 100 ml solution, and so forth.

ISO 10312 - ISO 10312:1995(E) Direct Transfer Method; ISO 13794 - ISO 13794:1999(E) Indirect Transfer Method; and ASTM: Dust or Microvac Sample Indirect Prep Method; EPA 100.2 - EPA600/R-94/134 (100.2)

Analytical Method, Counting Rules and Data Validation: Part I

Note: Please use the following data validation rules to replace the rules in all previous packages for NIOSH 7402 analysis. The reported fiber density has been changed to the equivalent or calibrated PCM fiber density in consistent with the concentration reported as f/cc. The fiber density reported in the previous reports is the total TEM fiber density, and was calculated differently from what is shown below. All reports previously issued were revised and included in the miscellaneous section of this data package.

Analytical Method: NIOSH 7402 – Asbestos by TEM, Issue 2, August 15, 1994.

Calculation of Analytical Sensitivity (S) Expressed in Fibers/cc or Structures/cc:

S = 1 Fiber or Structure x Total Effective Filter Area / (No. of Grids Openings Analyzed x Averaged Grid Opening Area x Air Volume in cc).

Example: For an air cassettes of 385 mm^2 effective area with volume of 3596.4 liters, the analytical sensitivity after 40 grid openings were analyzed for each opening that has an average area of 0.0094 mm^2 is:

S = 1 fiber x 385 mm^2 / (40 x 0.0094 mm^2 x 3596.4 liter x 1000 cc/liter)

= 0.00028 fibers/cc or 0.00028 f/cc.

Calculation of Asbestos Fiber Density (D) Expressed in Fibers/ mm^2 or Structures/ mm^2:

D = Asbestos Fiber Fraction x PCM Fiber Density, where the asbestos fiber fraction is obtained by solving the following:

Asbestos fiber fraction = (No. of Fibers or Structures Detected / Total PCME Fibers).

Example: If only one (1) asbestos fiber out of 4 total fibers that were detected during the above analysis, the fiber density on the filter is:

D = (1/4) x PCM fiber density in f/mm^2 = 7.96178 f/mm^2,

Where PCM fiber density can be obtained from the previous PCM report or by solving the following:

PCM fiber density = No. of Fibers/(No. of Fields x 0.00785)

Calculation of Fiber Concentration (C) in the Air Expressed in Structures/cc:

C = (No. of Fibers or Structures Detected / Total PCME Fibers) x Fiber Concentration by PCM. PCME: PCM equivalent (fibers).

Example: For the above analysis, if there was only one (1) asbestos structure detected over a total of 4 PCME fibers detected, and if the initial PCM result of this sample is 0.0034 f/cc, the air concentration by TEM is:

C =(1/4) x 0.0034 f/cc = 0.00085 f/cc.

Reporting Limit: the reporting limit in this report is based on 0.5 asbestos fiber detected (the very basic unit by the NIOSH 7402 counting method). If none is detected (i.e. total fibers equal zero), the PCM fiber detection limit is used for total fibers, which is 5.5 fibers. In this case, the asbestos ratio is then 0.5/5.5 (i.e. 0.091). For the above sample, the reporting limit is (0.5/4) x 0.003 f/cc, or 0.00038 f/cc. If there was not asbestos detected, the sample would be reported with the reporting limit (both in f/cc and f/mm^2) preceded with the qualifier "<".

Notes for using the TEM benchseet data: "fb, fs" denotes for asbestos fibers detected; "Fb, Fs" denotes for total fibers detected regardless of fiber identification.

Analytical Method, Counting Rules and Data Validation: Part II

METHOD: NIOSH 7400 Issue 2: 15 August 1994

Counting Rules:

Fiber length: >5 µm
Width: >0.25 µm
Aspect Ratio: ≥3:1

Data Validation and Calculation:

Effective Filter Area (i.e. Primary Filter Area in NADES Sheets): 385 mm^2
Calibrated Graticule Area (FOV in NADES Sheets): 0.00785 mm^2

Calculation Formula:

Fiber Density (fibers/mm^2 or f/mm^2) = number of fibers counted/(number of FOVs x area of FOV;

Or,

f/mm^2 = number of fibers/(0.00785 x number of FOVs) .....1)

Note: blank counts were not subtracted from the counts of each field sample.

Fiber Concentration (fibers/cm^3 or f/cc):

f/cc = (fiber density x filter area) / (volume in liter x 1000) .....2)

Example:

Lab Sample No. 802408;
EPA or Weston Sample No. P0001-AS06-093014
Air Volume: 606.33 liter
Fiber Counts: 7.5
No. of FOV: 100

According to equation 1), the fiber density is:

f/mm^2 = fiber counts/(0.00785 x no. of FOV) = 75/(0.00785x100) = 9.6 (f/mm^2)

According to equation 2), the fiber concentration is:

f/cc = fiber density x filter area / (1000 x volume) = 9.6 x 385 /(1000 x 606.33) = 0.006 (f/cc)

How detection limit is calculated (see NADES sheet for explanation):

The detection limit is based on 5.5 fibers detected on a filter, which means any counts below 5.5 fibers will be reported as though 5.5 fibers were detected.

For instance, if the actual count is 1 fiber over 100 fields of view or graticule areas, the fiber density will be reported as 5.5/(0.00785x100) or 7.0064 (i.e. 7.0) f/mm2 with the qualifier "<", and the concentration reported as 0.00074 f/cc or 0.001 f/cc with the qualifier "<".

REANALYSIS AND BLANK ANALYSIS

Summary for TEM Analysis:

Target Rate of QA Analysis: 10%
Total Analyses: 24 (over 12 samples)
# of Reanalysis: 4
% of Total QA Analysis: 17

QA analysis comment: exceeding the method requirement

Reanalysis Summary Table

Lab Sample#	Method of Analysis	Original Analysis (# of Fibers)	Reanalysis	QA Type	R-value	Analyst	QA Comment
802417	NIOSH 7402	0	0	Different Analyst	0.00	ARY vs JX	Pass
803188	NIOSH 7402	6.5	6.5	Different Analyst	0.00	ARY vs JX	Pass
802406	NIOSH 7400	4.5	3.5	Same Analyst	0.25	JX vs JX	Pass
803186	NIOSH 7400	2	3	Same Analyst	-0.40	JX vs JX	Pass

CALIBRATIONS AND ROUTINES

batta LABORATORIES

Calibration Sheet of the Walton-Beckett Graticule Area And the Mechanical Counter

Date: 10/12/2014

Scope ID#: #1, #3 **Calibrated By:** JX JX

Micrometer Made: Olympus **Line Spacing:** 0.01 mm

# of lines observed: 10

Calculation: see below

Formula: **Graticule Area = $\pi x R^2/4$ Where R is the measured diameter of the graticule.**

Diameter R = 10 x 0.01 mm = 0.1 mm; Then Area = 3.14159x0.01x0.25=0.00785 (mm2)

Is the graticule area within range (0.007390 - 0.008332)?

Yes X

No

Mechanical Counter Accuracy (100% Accurate)

Pass Test? **Yes** X

No

Positioin1	Position2	Position3	
100	100	100	Target
100	100	100	Actual
100	100	100	Accuracy

BATTA

TEM Routine Alignment & Calibration Form

Month & Year: Oct-14

		Daily	Daily	Monthly					Monthly		Quart	Quaterly		Monthly	QA Status
									Last Performed On:			Last Performed On:			
									09/27/14		07/29/14	09/18/14		09/27/14	
Date	Analyst Initials	Gun Align & Cu kα Check	Cu/Al Calibration	Camera Constant	Spot Size	EDX Mn Resolution	EDX Mg/Si Resolution	EDX Na Detection	20,000x Mag Cal	10,000x Mag Cal	Plasma Asher	EDX 2063a k-Factors	EDX Albite k-Factors	Chrysotile Beam Dose	
10/1	JX	X	X												PASS
10/2	JX	X	X												
10/3	JX	X	X												
10/4	ARY	X	X												PASS
10/5															PASS
10/6	JX	X	X												PASS
10/7	JX	X	X												PASS
10/8	JX	X	X												PASS
10/9	JX	X	X												
10/10	JX	X	X												
10/11															PASS
10/12															PASS
10/13	JX	X	X												PASS
10/14	JX/ARY	X	X												PASS
10/15	JX	X	X												PASS
10/16	JX/ARY	X	X												
10/17	JX	X	X												
10/18															PASS
10/19	ARY	X	X												PASS
10/20	JX	X	X												PASS
10/21	JX	X	X												PASS
10/22	JX/ARY	X	X												PASS
10/23	JX	X	X												
10/24	JX	X	X												
10/25															PASS
10/26															PASS
10/27	JX/BL	X	X	X							X				PASS
10/28	JX	X	X												PASS
10/29	JX/BL	X	X		X	X	X	X	X	X				X	PASS
10/30	JX	X	X												
10/31	JX	X	X												

Cu/Al Calibration should have a print-out once per month.
Please note only attach this hardcopy with the monthly summaries.
Report problems to the Lab Manager or QA Officer.

Analyst Initials: JX

QA Officer Initials:

Comments

Analytical Benchsheets

BATTA

TEM NIOSH 7402 Analytical Countsheet

TEM File #	5405 a	BLI Project#	L6888J Field ID# FB-100214-001
BL Sample #	802404 (S-81012)	TEM Sample#	1
Grid #1 Box #	3691	Grid #1 Location	~~A-1~~ A amidolum
Grid #2 Box #	0	Grid #2 Location	#VALUE!
Grid #3 Box #	0	Grid #3 Location	#VALUE!
Volume (liters)	0	Openings Analyzed	40
Grid Open.Area (mm²)	0.0094	Area Analyzed (mm²)	0.376
TEM Mag	19,000x	Acc.Voltage	100kV

GRID QUALITY EVALUATION - AHERA CRITERIA - Check off if criteria is met

Grid Replica Coverage >50% ✓ Fraction of Intact Replica >50% ✓ Folded/Overlapping Replica <50% ✓ Undissolved Filter Area <10% ✓ <5% Have Holes ✓

Grid# (ex: 1, 2 or 3)	Grid Square Location (ex: E-6)	Structure Length & Width *Length must be >5.0um Width must be at least u.25 um* (ex: 5.5 / 0.30)	SAED Pattern Identification (Chrys or Amph)	SAED Micrograph (Plate #)	Identification By EDXA (Asbestos Type)	Fiber Counts: Asbestos	Fiber Counts: Non-Asbestos
1	A1	ND					
	A3						
	A5						
	A7						
	C1						
	C3						
	C5						
	C7						
	C9						
	E1						
	E3						
	E6						
	E8						
	E10						
10/4/14 2	B1						
	B3						
	B5						
	B7						
	B9						
	D1						
	D3						
	D5						
	D7						
	D9						
	E1						
	E3						
	E5						
	E7						
10/4/14 3	E9						
3	A1						
	A3						
	A5						
	A7						
	C1						
	C3						
	C5						
	C7						
	C9						
	E2						
	E4						

TEM Analyst [illegible] Date of Analysis 10/4/2014

NSD = No Structures Detected
*B = Bundle *F = Fiber
*C = Cluster *M = Matrix

f_b, f_s = 0 F_b, F_s = 0 Page# 1

BATTA

TEM NIOSH 7402 Analytical Countsheet

TEM File #	5405 b	BLI Project#	L6886J Field ID# LOTB-100214-001
BL Sample #	802405	TEM Sample#	
Grid #1 Box #	0	Grid #1 Location	13
Grid #2 Box #	0	Grid #2 Location	#VALUE!
Grid #3 Box #	0	Grid #3 Location	#VALUE!
Volume (liters)	0	Openings Analyzed	40
Grid Open.Area (mm²)	0.0094	Area Analyzed (mm²)	0.376
TEM Mag	19,000x	Acc.Voltage	100kV

GRID QUALITY EVALUATION - AHERA CRITERIA - Check if criteria met

Undissolved Filter Area <10% ✓

Grid Replica Coverage >50% ✓ Fraction of Intact Replica >50% ✓ Folded/Overlapping Replica <50% ✓ <5% Have Holes ✓

Grid# (ex: 1, 2 or 3)	Grid Square Location (ex: E-6)	Structure Length & Width *Length must be >5.0um Width must be at least 0.25 um* (ex: 5.5 / 0.30)	SAED Pattern Identification (Chrys or Amph)	SAED Micrograph (Plate #)	Identification By EDXA (Asbestos Type)	Fiber Counts Asbestos	Fiber Counts Non-Asbestos
1	A1	ND					
	A3						
	A5						
	C2						
	C4						
	C6						
	C8						
	C10						
	F1						
	F3						
	F5						
	F7						
	F9						
2	B1						
	B4						
	B7						
	B10						
	D1						
	D3						
	D6						
	D8						
	D10						
	G1						
	G4						
	G6						
	G8						
	G10						
3	B2						
	B4						
	B8						
	B10						
	D2						
	D6						
	D8						
	D10						
	H4						
	H7						
	H9						
	J2						
	J5						

TEM Analyst [signature] Date of Analysis 10/4/2014

NSD = No Structures Detected
*B = Bundle *F = Fiber
*C = Cluster *M = Matrix

f_b, f_s = 0 F_b, F_s = 0 Page# 2

BATTA

TEM NIOSH 7402 Analytical Countsheet

TEM File #	5405 c	BLI Project#	L6888J Field ID# P0001-AS04-093014
BL Sample #	802406 (A2U4U4)	TEM Sample#	
Grid #1 Box #	0	Grid #1 Location	
Grid #2 Box #	0	Grid #2 Location	#VALUE!
Grid #3 Box #	0	Grid #3 Location	#VALUE!
Volume (liters)	622	Openings Analyzed	40
Grid Open.Area (mm²)	0.0094	Area Analyzed (mm²)	0.376
TEM Mag	19,000x	Acc.Voltage	100kV

GRID QUALITY EVALUATION - AHERA CRITERIA - Check off if criteria is met.

Undissolved Filter Area <10% ✓

Grid Replica Coverage >50% ✓ Fraction of Intact Replica >50% ✓ Folded/Overlapping Replica <50% ✓ <5% Have Holes ✓

Grid# (ex: 1, 2 or 3)	Grid Square Location (ex: E-6)	Structure Length & Width *Length must be >5.0um Width must be at least 0.25 um* (ex: 5.5 / 0.30)	SAED Pattern Identification (Chrys or Amph)	SAED Micrograph (Plate #)	Identification By EDXA (Asbestos Type)	Fiber Counts: Asbestos	Fiber Counts: Non-Asbestos
1	A1	ND					
	A3						
	A5						
	A9						
	D1						
	D3						
	D7						
	D9						
	E1						
	E3						
	E5						
	E7						
	E9						
2	A6						
	A8						
	B10						
	C9						
	D8						
	D10						
	D1						
	E2						
	E1						
	E3						
	G7						
	G5						
3	B1						
	B3						
	B5						
	B7						
	B9						
	D2						
	D4						
	D6						
	D8						
	F1						
	F3						
	F6						
	F8						
	H1						
	H7						

TEM Analyst [signature] Date of Analysis 10/4/2014

NSD = No Structures Detected
*B = Bundle *F = Fiber
*C = Cluster *M = Matrix

f_b, f_s = 0 F_b, F_s = 0 Page# 3

BATTA

TEM NIOSH 7402 Analytical Countsheet

TEM File #	5405 d	BLI Project#	L69683 Field ID# P0001-AS05-093014
BL Sample #	802407 ([illegible])	TEM Sample#	
Grid #1 Box #	0	Grid #1 Location	D
Grid #2 Box #	0	Grid #2 Location	#VALUE!
Grid #3 Box #	0	Grid #3 Location	#VALUE!
Volume (liters)	624	Openings Analyzed	40
Grid Open.Area (mm²)	0.0094	Area Analyzed (mm²)	0.376
TEM Mag	19,000x	Acc.Voltage	100kV

GRID QUALITY EVALUATION - AHERA CRITERIA Check off if criteria met

Undissolved Filter Area <10% ✓

Grid Replica Coverage >50% ✓ Fraction of Intact Replica >50% ✓ Folded/Overlapping Replica <50% ✓ <5% Have Holes ✓

Grid# (ex: 1, 2 or 3)	Grid Square Location (ex: E-6)	Structure Length & Width *Length must be >5.0um Width must be at least 0.25 um* (ex: 5.5 / 0.30)	SAED Pattern Identification (Chrys or Amph)	SAED Micrograph (Plate #)	Identification By EDXA (Asbestos Type)	Fiber Counts Asbestos	Fiber Counts Non-Asbestos
1	A2	(NO)					
	A4						
	A6						
	A8						
	C1						
	C3						
	C5						
	C7						
	C9						
	E2						
	E4						
	E6						
	E8						
	E10						
2	B2						
	B4						
	B6						
	B8						
	E1						
	E3						
	E5						
	E7						
	G1						
	G3						
	G5						
	G7						
	G9						
3	B2						
	B4						
	B6						
	B8						
	D2						
	D4						
	D6						
	D8						
	F2						
	F4						
	F6						
	F8						
	G5						

TEM Analyst [signature] Date of Analysis 10/4/2014

NSD = No Structures Detected
*B = Bundle *F = Fiber
*C = Cluster *M = Matrix

f_b, f_s = 0 F_b, F_s = 0 Page# 4

BATTA

TEM NIOSH 7402 Analytical Countsheet

TEM File #	5405 e	BLI Project#	L6888-J Field ID# P0001-AS06-093014
BL Sample #	802408 (802411)	TEM Sample#	[redacted]
Grid #1 Box #	0	Grid #1 Location	E
Grid #2 Box #	0	Grid #2 Location	#VALUE!
Grid #3 Box #	0	Grid #3 Location	#VALUE!
Volume (liters)	605	Openings Analyzed	40
Grid Open.Area (mm²)	0.0094	Area Analyzed (mm²)	0.376
TEM Mag	19,000x	Acc.Voltage	100kV

GRID QUALITY EVALUATION - AHERA CRITERIA - Check off if criteria is met

Undissolved Filter Area <10% ✓

Grid Replica Coverage >50% ✓ Fraction of Intact Replica >50% ✓ Folded/Overlapping Replica <50% ✓ <5% Have Holes ✓

Grid# (ex: 1, 2 or 3)	Grid Square Location (ex: E-6)	Structure Length & Width *Length must be >5.0um Width must be at least 0.25 um* (ex: 5.5 / 0.30)	SAED Pattern Identification (Chrys or Amph)	SAED Micrograph (Plate #)	Identification By EDXA (Asbestos Type)	Fiber Counts Asbestos	Fiber Counts Non-Asbestos
1	A1						
	A3						
	A5						
	A7						
	A9						
	C3						
	C5						
	C7						
	C9						
	E3						
	E8						
	G5						
	G7						
	G9						
2	A1						
	A3						
	A5						
	A9						
	C1						
	C3						
	C5						
	C7						
	C9						
	E1						
	E3						
	E5						
	E7						
	E9						
	G2						
	G4						
	G6						
	G8						
	G10						
3	A7						
	B6						
	C9						
	D7						
	D9						
	E7						
	E9						

TEM Analyst [signature] Date of Analysis 10/4/2014

NSD = No Structures Detected
*B = Bundle *F = Fiber
*C = Cluster *M = Matrix

f_b, f_s = 0 F_b, F_s= 0 Page# 5

BATTA

TEM NIOSH 7402 Analytical Countsheet

TEM File #	5405 f	BLI Project#	L68883 Field ID# P0001-AS07-100214
BL Sample #	802409 (891-CP7)	TEM Sample#	
Grid #1 Box #	0	Grid #1 Location	E
Grid #2 Box #	0	Grid #2 Location	#VALUE!
Grid #3 Box #	0	Grid #3 Location	#VALUE!
Volume (liters)	600	Openings Analyzed	40
Grid Open.Area (mm²)	0.0094	Area Analyzed (mm²)	0.3760
TEM Mag	19,000x	Acc.Voltage	100kV

GRID QUALITY EVALUATION - AHERA CRITERIA - Check off if criteria is met. Undissolved Filter Area <10% ✓

Grid Replica Coverage >50% ✓ Fraction of Intact Replica >50% ✓ Folded/Overlapping Replica <50% ✓ <5% Have Holes ✓

Grid# (ex: 1, 2 or 3)	Grid Square Location (ex: E-6)	Structure Length & Width *Length must be >5.0um Width must be at least 0.25 um* (ex: 5.5 / 0.30)	SAED Pattern Identification (Chrys or Amph)	SAED Micrograph (Plate #)	Identification By EDXA (Asbestos Type)	Fiber Counts Asbestos	Fiber Counts Non-Asbestos
1	A1	ND					
	A3						
	A5						
	A7						
	A9						
	C2						
	C4						
	C7						
	C9						
	E2						
	E6						
	E8						
	E10						
2	B1						
	B3						
	B5						
	B8						
	B10						
	D1						
	D3						
	D5						
	D7						
	D9						
	F1						
	~~F3~~						
	F5						
	F7						
	F9						
3	B1						
	B3						
	B6						
	B9						
	D1						
	D4						
	D7						
	F3						
	F7						
	F9						
	G8						
	H10						

TEM Analyst [signature] Date of Analysis 10/4/2014

NSD = No Structures Detected
*B = Bundle *F = Fiber
*C = Cluster *M = Matrix

f_b, f_s = 0 F_b, F_s = 0 Page# 6

BATTA

TEM NIOSH 7402 Analytical Countsheet

TEM File #	5405 g	BLI Project#	L68883 Field ID# P0001-AS08-100214
BL Sample #	802410	TEM Sample#	
Grid #1 Box #	0	Grid #1 Location	
Grid #2 Box #	0	Grid #2 Location	#VALUE!
Grid #3 Box #	0	Grid #3 Location	#VALUE!
Volume (liters)	600	Openings Analyzed	40
Grid Open.Area (mm²)	0.0094	Area Analyzed (mm²)	0.376
TEM Mag	19,000x	Acc.Voltage	100kV

GRID QUALITY EVALUATION - AHERA CRITERIA - Check off if criteria is met

Undissolved Filter Area <10% ✓

Grid Replica Coverage >50% ✓ Fraction of Intact Replica >50% ✓ Folded/Overlapping Replica <50% ✓ <5% Have Holes ✓

Grid# (ex: 1, 2 or 3)	Grid Square Location (ex: E-6)	Structure Length & Width *Length must be >5.0um Width must be at least 0.25 um* (ex: 5.5 / 0.30)	SAED Pattern Identification (Chrys or Amph)	SAED Micrograph (Plate #)	Identification By EDXA (Asbestos Type)	Fiber Counts Asbestos	Fiber Counts Non-Asbestos
1	A5	ND					
	A7						
	B2						
	B6						
	B8						
	D1						
	D3						
	D5						
	D7						
	D9						
	F1						
	F3						
	F5						
	F7						
	F9						
2	B2						
	B4						
	B6						
	B8						
	B10						
	D1						
	D3						
	D5						
	D7						
	D9						
	F1						
	F3						
	F5						
	F7						
	F9						
3	A1						
	A3						
	A5						
	A7						
	A9						
	C1						
	C3						
	C5						
	C8						
	C10						

TEM Analyst [signature] Date of Analysis 10/4/2014

NSD = No Structures Detected
*B = Bundle *F = Fiber
*C = Cluster *M = Matrix

f_b, f_s = 0 F_b, F_s = 0 Page# 7

BATTA

TEM NIOSH 7402 Analytical Countsheet

TEM File #	5405 h	BLI Project#	L6868J Field ID# P0001-AS09-100214
BL Sample #	802411 (Set 4 9)	TEM Sample#	[redacted]
Grid #1 Box #	0	Grid #1 Location	4
Grid #2 Box #	0	Grid #2 Location	#VALUE!
Grid #3 Box #	0	Grid #3 Location	#VALUE!
Volume (liters)	665	Dpenings Analyzed	40
Grid Open.Area (mm^2)	0.0094	Area Analyzed (mm^2)	0.376
TEM Mag	19,000x	Acc.Voltage	100kV

GRID QUALITY EVALUATION - AHERA CRITERIA - check off if criteria is met. Undissolved Filter Area <10% ✓

Grid Replica Coverage >50% ✓ Fraction of Intact Replica >50% ✓ Folded/Overlapping Replica <50% ✓ <5% Have Holes ✓

Grid# (ex: 1, 2 or 3)	Grid Square Location (ex: E-6)	Structure Length & Width *Length must be >5.0um Width must be at least 0.25 um* (ex: 5.5 / 0.30)	SAED Pattern Identification (Chrys or Amph)	SAED Micrograph (Plate #)	Identification By EDXA (Asbestos Type)	Fiber Counts Asbestos	Fiber Counts Non-Asbestos
1	A1	ND					
	A3						
	A5						
	A7						
	A9						
	C3						
	C6						
	C8						
	C10						
	F1						
	F3						
	F5						
	F8						
	F10						
2	A6						
	A8						
	A10						
	C3						
	C5						
	C7						
	C9						
	F2						
	F4						
	F7						
	F9						
3	A2						
	A4						
	A6						
	A8						
	C1						
	C3						
	C5						
	C7						
	C9						
	E1						
	E3						
	E5						
	E8						
	E10						
	G3						

TEM Analyst [signature] Date of Analysis 10/4/2014

NSD = No Structures Detected
*B = Bundle *F = Fiber
*C = Cluster *M = Matrix

f_b, f_s = 0 F_b, F_s = 0 Page# 8

BATTA

TEM NIOSH 7402 Analytical Countsheet

TEM File #	5423 a	BLI Project#	L6888J	Field ID#	FB-101314-001
BL Sample #	803187	TEM Sample#	28844		
Grid #1 Box #	3695	Grid #1 Location	F-1		
Grid #2 Box #	3695	Grid #2 Location	F-3		
Grid #3 Box #	3695	Grid #3 Location	F-5		
Volume (liters)	0	Openings Analyzed	40		
Grid Open.Area (mm^2)	0.009	Area Analyzed (mm^2)	0.36		
TEM Mag	19,000x	Acc.Voltage	100kV		

GRID QUALITY EVALUATION - AHERA CRITERIA -- Check-off if criteria is met

Grid Replica Coverage >50% ✓ Fraction of Intact Replica >50% ✓ Folded/Overlapping Replica <50% ✓ Undissolved Filter Area <10% ✓ <5% Have Holes ✓

Grid# (ex: 1, 2 or 3)	Grid Square Location (ex: E-6)	Structure Length & Width *Length must be >5.0um Width must be at least 0.25 um* (ex: 5.5 / 0.30)	SAED Pattern Identification (Chrys or Amph)	SAED Micrograph (Plate #)	Identification By EDXA (Asbestos Type)	Fiber Counts: Asbestos	Fiber Counts: Non-Asbestos
1	A7	NSD					0
	A8						
	B1						
	B2						
	B3						
	B4						
	B5						
	B9						
	B10						
	C7						
	C8						
	C9						
	C10						
	D7						
	H7						
	H10						
2	A9						
	A10						
	C2						
	C8						
	D2						
	D8						
	D9						
	E2						
	E3						
	G2						
	G3						
	H4						
	H8						
3	A2						
	B3						
	C3						
	C4						
	D3						
	D4						
	E5						
	H5						
	I5						
	I6						
	I7						

TEM Analyst: JO

Date of Analysis: 8/17/2014

NSD = No Structures Detected
*B = Bundle *F = Fiber
*C = Cluster *M = Matrix

f_b, f_s = 0 0

F_b, F_s = 0 0

Page# 1

11/05/2014

BATTA

TEM NIOSH 7402 Analytical Countsheet

TEM File #	5423 b	BLI Project#	L6888J	Field ID#	PAS01-101314
BL Sample #	803188	TEM Sample#	28845		
Grid #1 Box #	3695	Grid #1 Location	G-2		
Grid #2 Box #	3695	Grid #2 Location	G-4		
Grid #3 Box #	3695	Grid #3 Location	G-6		
Volume (liters)	549	Openings Analyzed	40		
Grid Open.Area (mm²)	0.009	Area Analyzed (mm²)	0.36		
TEM Mag	19,000x	Acc.Voltage	100kV		

GRID QUALITY EVALUATION - AHERA CRITERIA -- Check-off if criteria is met

Grid Replica Coverage >50% ✓ Fraction of Intact Replica >50% ✓ Folded/Overlapping Replica <50% ✓ Undissolved Filter Area <10% ✓ <5% Have Holes ✓

Grid# (ex: 1, 2 or 3)	Grid Square Location (ex: E-6)	Structure Length & Width *Length must be >5.0um Width must be at least 0.25 um* (ex: 5.5 / 0.30)	SAED Pattern Identification (Chrys or Amph)	SAED Micrograph (Plate #)	Identification By EDXA (Asbestos Type)	Fiber Counts: Asbestos	Fiber Counts: Non-Asbestos
1	A1						0
	A2						
	A3						
	A5						
	A6						
	B1						
	B3						
	B5						2
	B7						0
	C1						
	C3						
	C4						
	C5						
	C7						
	D2						
	D5						
	H4						1
2	D8						0
	E2						
	E3						
	E6						
	E7						2
	F1						0
	F2						
	F3						
	F4						
	G1						1
	J5						0.5
	J6						0
	J8						
3	D4						
	D8						
	A3						
	A7						
	A9						
	E3						
	E5						
	E8						
	J8						
	J4						

TEM Analyst: TO Date of Analysis: 8/17/2014

NSD = No Structures Detected
*B = Bundle *F = Fiber
*C = Cluster *M = Matrix

f_b, f_s = 0 0 F_b, F_s = 6.5 0 Page# 2

BATTA

TEM NIOSH 7402 Analytical Countsheet

TEM File #	5432 a	BLI Project#	L68883 Field ID# FB-102314-001
BL Sample #	803548	TEM Sample#	28844
Grid #1 Box #	3698	Grid #1 Location	O-2
Grid #2 Box #	3698	Grid #2 Location	O-4
Grid #3 Box #	3698	Grid #3 Location	O-6
Volume (liters)	0	Openings Analyzed	40
Grid Open.Area (mm²)	0.009	Area Analyzed (mm²)	0.36
TEM Mag	19,000x	Acc.Voltage	100kV

GRID QUALITY EVALUATION - AHERA CRITERIA - Check off if criteria is met

Undissolved Filter Area <10% ✓

Grid Replica Coverage >50% ✓ Fraction of Intact Replica >50% ✓ Folded/Overlapping Replica <50% ✓ <5% Have Holes ✓

Grid# (ex: 1, 2 or 3)	Grid Square Location (ex: E-6)	Structure Length & Width *Length must be >5.0um Width must be at least 0.25 um* (ex: 5.5 / 0.30)	SAED Pattern Identification (Chrys or Amph)	SAED Micrograph (Plate #)	Identification By EDXA (Asbestos Type)	Fiber Counts Asbestos	Fiber Counts Non-Asbestos
1	A2					0	0
	A7						
	A10						
	C3						
	D4						
	D8						
	D10						
	E2						
	F4						
	F9						
	G4						
	G8						
	H2						
	H3						
	H7						
2	A3						
	A5						
	A8						
	A9						
	B5						
	B10						
	C2						
	C5						
	D7						
	E1						
	A6						
	I3						
	J2						
3	A1						
	A7						
	B2						
	E1						
	E3						
	E5						
	E6						
	E7						
	G10						
	G2						
	H2						
	I9						

TEM Analyst [illegible] Date of Analysis 10/27/2014

NSD = No Structures Detected
*B = Bundle *F = Fiber
*C = Cluster *M = Matrix

f_b, f_s = 0 0 F_b, F_s = 0 0 Page# 1

BATTA

TEM NIOSH 7402 Analytical Countsheet

TEM File #	5432 b	BLI Project#	L68883 Field ID# PAS01-102314
BL Sample #	803549	TEM Sample#	28845
Grid #1 Box #	3698	Grid #1 Location	P-1
Grid #2 Box #	3698	Grid #2 Location	P-3
Grid #3 Box #	3698	Grid #3 Location	P-5
Volume (liters)	496	Openings Analyzed	40
Grid Open.Area (mm^2)	0.009	Area Analyzed (mm^2)	0.36
TEM Mag	19,000x	Acc.Voltage	100kV

GRID QUALITY EVALUATION - AHERA CRITERIA - Check-off if criteria met

Undissolved Filter Area <10% ✓

Grid Replica Coverage >50%____ Fraction of Intact Replica >50% ✓ Folded/Overlapping Replica <50% ✓ <5% Have Holes ✓

Grid# (ex: 1, 2 or 3)	Grid Square Location (ex: E-6)	Structure Length & Width *Length must be >5.0um Width must be at least 0.25 um* (ex: 5.5 / 0.30)	SAED Pattern Identification (Chrys or Amph)	SAED Micrograph (Plate #)	Identification By EDXA (Asbestos Type)	Fiber Counts: Asbestos	Fiber Counts: Non-Asbestos
1	A3						0
	A6						
	A8						
	B4						
	B5						
	B8						
	C5						
	C8						
	D4						
	D5						
	E4						
	E2						
	F4						
	F7						
	G7						
	F8						0.5
2	B7						0
	C7						
	D9						
	D10						
	E10						
	F9						
	E8						
	E7						
	F5						
	F10						
	H8						
	I9						
3	A6						
	A8						
	B10						
	C9						
	D2						
	E1						
	E6						
	H10						
	F10						
	H6						
	I8						
	I7						

TEM Analyst [illegible] Date of Analysis 10/27/2014

NSD = No Structures Detected
*B = Bundle *F = Fiber
*C = Cluster *M = Matrix

f_b, f_s = 0 0 F_b, F_s = 0.5 0 Page# 2

BATTA

10/29/14 JX

TEM NIOSH 7402 Analytical Countsheet

TEM File #	5405 e	BLI Project#	L68884 Field ID# P0001-AS06-093014
BL Sample #	802416 (802417)	TEM Sample#	[redacted]
Grid #1 Box #	3691	Grid #1 Location	E1 F
Grid #2 Box #	3691	Grid #2 Location	E3
Grid #3 Box #	3691	Grid #3 Location	E5
Volume (liters)	606	Openings Analyzed	40
Grid Open.Area (mm²)	0.0094	Area Analyzed (mm²)	0.376
TEM Mag	19,000x	Acc.Voltage	100kV

Reanalysis

GRID QUALITY EVALUATION - AHERA CRITERIA — check if criteria is met

Grid Replica Coverage >50% ✓ Fraction of Intact Replica >50% ✓ Folded/Overlapping Replica <50% ✓ Undissolved Filter Area <10% ✓ <5% Have Holes ✓

Grid# (ex: 1, 2 or 3)	Grid Square Location (ex: E-6)	Structure Length & Width *Length must be >5.0um Width must be at least 0.25 um* (ex: 5.5 / 0.30)	SAED Pattern Identification (Chrys or Amph)	SAED Micrograph (Plate #)	Identification By EDXA (Asbestos Type)	Fiber Counts: Asbestos	Fiber Counts: Non-Asbestos
1	A1	ND					
	A3						
	A5						
	A7						
	A9						
	C2						
	C4						
	C7						
	C9						
	E2						
	E6						
	E8						
	E10						
2	B1						
	B3						
	B5						
	B8						
	B10						
	D1						
	D3						
	D5						
	D7						
	D9						
	F1						
	F3						
	F5						
	F7						
	F9						
3	B1						
	B3						
	B6						
	B9						
	D1						
	D4						
	D7						
	E3						
	E7						
	E9						
	G8						
	H10						

TEM Analyst TX Date of Analysis 10/29/2014

NSD = No Structures Detected
*B = Bundle *F = Fiber
*C = Cluster *M = Matrix

f_b, f_s = 0 F_b, F_s = 0 Page# 6

BATTA

TEM NIOSH 7402 Analytical Countsheet

10/29/14 JX

TEM File #	5423 b	BLI Project#	168888	Field ID#	PAS01-101314
BL Sample #	803188	TEM Sample#	28845		
Grid #1 Box #	3695	Grid #1 Location	G-2		
Grid #2 Box #	3695	Grid #2 Location	G-4		
Grid #3 Box #	3695	Grid #3 Location	G-6		
Volume (liters)	549	Openings Analyzed	40		
Grid Open.Area (mm²)	0.009	Area Analyzed (mm²)	0.36		
TEM Mag	19,000x	Acc.Voltage	100kV		

Reanalysis

GRID QUALITY EVALUATION - AHERA CRITERIA - Check off if criteria met

Grid Replica Coverage >50% ✓ Fraction of Intact Replica >50% ✓ Folded/Overlapping Replica <50% ✓ Undissolved Filter Area <10% ✓ <5% Have Holes ✓

Grid# (ex: 1, 2 or 3)	Grid Square Location (ex: E-6)	Structure Length & Width *Length must be >5.0um Width must be at least 0.25 um* (ex: 5.5 / 0.30)	SAED Pattern Identification (Chrys or Amph)	SAED Micrograph (Plate #)	Identification By EDXA (Asbestos Type)	Fiber Counts: Asbestos	Fiber Counts: Non-Asbestos
1	A1						0
	A2						
	A3						
	A5						
	A6						
	B1						
	B3						
	B5						2
	B7						0
	C1						
	C3						
	C4						
	C5						
	C7						
	D2						
	D5						
	H4						1
2	D8						0
	E2						
	E3						
	E6						
	E7						2
	F1						0
	F2						
	F3						
	F4						
	G1						1
	I5						0.5
	I6						0
	I8						
3	D4						
	D8						
	A3						
	A7						
	A9						
	E3						
	E5						
	E8						
	J8						
	J4						

NSD = No Structures Detected
*B = Bundle *F = Fiber
*C = Cluster *M = Matrix

TEM Analyst JX Date of Analysis 10/27/2014

f_b, f_s = .0 F_b, F_s = 6.5 ~~0~~ Page# 2