



EMSL Analytical, Inc.

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Project: NERT Phase 2 Mod. 12 / 1690011200-028
Date Sampled: 09/11/2019

Customer ID: EVEM42
Customer PO: NA
Received: 9/16/19 8:43 AM
EMSL Order: 041927219
Date Prepared: 9/18/2019
Analysis Date(s): 9/20/2019

Report Date: 10/7/2019

EPA 540-R-97-028 -Superfund Method

*Draft Modified Elutriator Method for the Determination of Asbestos in Soils and Bulk Material Method
 (Revision 1)*

EMSL Sample Number	041927219-0001	Mass of Respirable Dust on Filter:	0.000106	g
Customer Sample Number:	RISB-ER-02-1.0-20190911	Area of collection filter:	385	mm ²
Minimum Level of analysis (chrysotile):	CD	Grid openings Area:	0.013	mm ²
Minimum Level of analysis (amphibole):	ADX	Grid Openings Analyzed:	100	
Magnification used for fiber counting:	10,000 x	Min Str. Length/ Max Str. Diameter:	>5 / <0.4	microns
Aspect ratio for fiber definition:	3:1	Analyst(s):	P. Harrison	

Dust Generator-Total Dried Sample Weights	Soil % Moisture	0.8	%
>3/8" 0.000 g	Air Flow Rate Through ME opening of Dust Generator	1438.70	ml/min
Not Used <3/8" 3265.650 g	Air Flow Rate Through IST opening of Dust Generator	83.33	ml/min
Used in Tumbler <3/8" 52.400 g	Estimated Total Air Flow Through Elutriator	1522.03	ml/min

Analytical Sensitivity: 2.79E+06 Structure/g PM10 Limit of Detection: 8.35E+06 Structure/g PM10

Test for Uniformity (Chi-Square result) N/A

Note: Target analytical sensitivity could not be met. Samples contained a small amount of respirable particles.

Structure Class	Min ID Level Required	Counts		Density Str/mm ²	Conc. Str/g PM10	Poisson 95 % Confidence Interval	
		Primary Str.	Total Str.			Lower Limit Str/g PM10	Upper Limit Str/g PM10
Asbestos Structures > 5um, ≤ 10um	CD/ADX	0	0	< 2.31	< 8.35E+06	NA	8.35E+06
Asbestos Structures > 5um, ≤ 10um (Chrys)	CD	0	0	< 2.31	< 8.35E+06	NA	8.35E+06
Asbestos Structures > 5um, ≤ 10um (Amph)	ADX	0	0	< 2.31	< 8.35E+06	NA	8.35E+06
Asbestos Structures >10 um (Long)	CD/ADX	0	0	< 2.31	< 8.35E+06	NA	8.35E+06
Asbestos Structures >10 um (Chrys)	CD	0	0	< 2.31	< 8.35E+06	NA	8.35E+06
Asbestos Structures >10 um (Amph)	ADX	0	0	< 2.31	< 8.35E+06	NA	8.35E+06
Total Protocol Asbestos Structures	CD/ADX	0	0	< 2.31	< 8.35E+06	NA	8.35E+06
Protocol Asbestos Structures(Chrys)	CD	0	0	< 2.31	< 8.35E+06	NA	8.35E+06
Protocol Asbestos Structures (Amph)	ADX	0	0	< 2.31	< 8.35E+06	NA	8.35E+06
Total Protocol Non Asbestos Structures	NAM	0	0				

Note: The concentration of asbestos and the 95% Confidence Intervals are reported on the basis of the Poissonian distribution and the Total Structure count. Structure counts above 31 may be better expressed with a Gaussian distribution. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL is not responsible for sample collection activities or analytical method limitations. Interpretation and use of results are the responsibility of the client.

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Report Date: 10/7/2019

EPA 540-R-97-028 -Superfund Method

*Draft Modified Elutriator Method for the Determination of Asbestos in Soils and Bulk Material Method
 (Revision 1)*

EMSL Sample Number	041927219-0002	Mass of Respirable Dust on Filter:	0.00012	g
Customer Sample Number:	RISB-EJ-02-1.0-20190911	Area of collection filter:	385	mm ²
Minimum Level of analysis (chrysotile):	CD	Grid openings Area:	0.013	mm ²
Minimum Level of analysis (amphibole):	ADX	Grid Openings Analyzed:	100	
Magnification used for fiber counting:	10,000 x	Min Str. Length/ Max Str. Diameter:	>5 / <0.4	microns
Aspect ratio for fiber definition:	3:1	Analyst(s):	P. Harrison	

Dust Generator-Total Dried Sample Weights	Soil % Moisture	3.4	%
>3/8" 0.000 g	Air Flow Rate Through ME opening of Dust Generator	1435.50	ml/min
Not Used <3/8" 2385.860 g	Air Flow Rate Through IST opening of Dust Generator	91.52	ml/min
Used in Tumbler <3/8" 54.830 g	Estimated Total Air Flow Through Elutriator	1527.02	ml/min

Analytical Sensitivity: 2.47E+06 Structure/g PM10 Limit of Detection: 7.38E+06 Structure/g PM10

Test for Uniformity (Chi-Square result) N/A

Note: Target analytical sensitivity could not be met. Samples contained a small amount of respirable particles.

Structure Class	Min ID Level Required	Counts		Density Str/mm ²	Conc. Str/g PM10	Poisson 95 % Confidence Interval	
		Primary Str.	Total Str.			Lower Limit Str/g PM10	Upper Limit Str/g PM10
Asbestos Structures > 5um, ≤ 10um	CD/ADX	0	0	< 2.31	< 7.38E+06	NA	7.38E+06
Asbestos Structures > 5um, ≤ 10um (Chrys)	CD	0	0	< 2.31	< 7.38E+06	NA	7.38E+06
Asbestos Structures > 5um, ≤ 10um (Amph)	ADX	0	0	< 2.31	< 7.38E+06	NA	7.38E+06
Asbestos Structures >10 um (Long)	CD/ADX	0	0	< 2.31	< 7.38E+06	NA	7.38E+06
Asbestos Structures >10 um (Chrys)	CD	0	0	< 2.31	< 7.38E+06	NA	7.38E+06
Asbestos Structures >10 um (Amph)	ADX	0	0	< 2.31	< 7.38E+06	NA	7.38E+06
Total Protocol Asbestos Structures	CD/ADX	0	0	< 2.31	< 7.38E+06	NA	7.38E+06
Protocol Asbestos Structures(Chrys)	CD	0	0	< 2.31	< 7.38E+06	NA	7.38E+06
Protocol Asbestos Structures (Amph)	ADX	0	0	< 2.31	< 7.38E+06	NA	7.38E+06

Total Protocol Non Asbestos Structures NAM 0 0

Note: The concentration of asbestos and the 95% Confidence Intervals are reported on the basis of the Poissonian distribution and the Total Structure count. Structure counts above 31 may be better expressed with a Gaussian distribution. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL is not responsible for sample collection activities or analytical method limitations. Interpretation and use of results are the responsibility of the client.

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Customer ID: EVEM42

Customer PO: NA

Received: 9/16/19 8:43 AM

EMSL Order: 041927219

Date Prepared: 9/19/2019

Analysis Date(s): 9/24/2019

Report Date: 10/7/2019

EPA 540-R-97-028 -Superfund Method

*Draft Modified Elutriator Method for the Determination of Asbestos in Soils and Bulk Material Method
 (Revision 1)*

EMSL Sample Number	041927219-0003	Mass of Respirable Dust on Filter:	0.000148	g
Customer Sample Number:	RISB-EJ-04-1.0-20190911	Area of collection filter:	385	mm ²
Minimum Level of analysis (chrysotile):	CD	Grid openings Area:	0.013	mm ²
Minimum Level of analysis (amphibole):	ADX	Grid Openings Analyzed:	100	
Magnification used for fiber counting:	10,000 x	Min Str. Length/ Max Str. Diameter:	>5 / <0.4	microns
Aspect ratio for fiber definition:	3:1	Analyst(s):	P. Harrison	

Dust Generator-Total Dried Sample Weights	Soil % Moisture	2.6	%
>3/8" 170.320 g	Air Flow Rate Through ME opening of Dust Generator	1463.30	ml/min
Not Used <3/8" 2760.360 g	Air Flow Rate Through IST opening of Dust Generator	90.30	ml/min
Used in Tumbler <3/8" 56.150 g	Estimated Total Air Flow Through Elutriator	1553.60	ml/min

Analytical Sensitivity: 2.00E+06 Structure/g PM10 Limit of Detection: 5.98E+06 Structure/g PM10

Test for Uniformity (Chi-Square result) N/A

Note: Target analytical sensitivity could not be met. Samples contained a small amount of respirable particles.

Structure Class	Min ID Level Required	Counts		Density Str/mm ²	Conc. Str/g PM10	Poisson 95 % Confidence Interval	
		Primary Str.	Total Str.			Lower Limit Str/g PM10	Upper Limit Str/g PM10
Asbestos Structures > 5um, ≤ 10um	CD/ADX	0	0	< 2.31	< 5.98E+06	NA	5.98E+06
Asbestos Structures > 5um, ≤ 10um (Chrys)	CD	0	0	< 2.31	< 5.98E+06	NA	5.98E+06
Asbestos Structures > 5um, ≤ 10um (Amph)	ADX	0	0	< 2.31	< 5.98E+06	NA	5.98E+06
Asbestos Structures >10 um (Long)	CD/ADX	0	0	< 2.31	< 5.98E+06	NA	5.98E+06
Asbestos Structures >10 um (Chrys)	CD	0	0	< 2.31	< 5.98E+06	NA	5.98E+06
Asbestos Structures >10 um (Amph)	ADX	0	0	< 2.31	< 5.98E+06	NA	5.98E+06
Total Protocol Asbestos Structures	CD/ADX	0	0	< 2.31	< 5.98E+06	NA	5.98E+06
Protocol Asbestos Structures(Chrys)	CD	0	0	< 2.31	< 5.98E+06	NA	5.98E+06
Protocol Asbestos Structures (Amph)	ADX	0	0	< 2.31	< 5.98E+06	NA	5.98E+06
Total Protocol Non Asbestos Structures	NAM	0	0				

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Date Prepared: 9/19/2019

Analysis Date(s): 10/2/2019

Report Date: 10/7/2019

EPA 540-R-97-028 -Superfund Method

*Draft Modified Elutriator Method for the Determination of Asbestos in Soils and Bulk Material Method
 (Revision 1)*

EMSL Sample Number	041927219-0004	Mass of Respirable Dust on Filter:	0.000142	g
Customer Sample Number:	RISB-EJ-03-1.0-20190911	Area of collection filter:	385	mm ²
Minimum Level of analysis (chrysotile):	CD	Grid openings Area:	0.013	mm ²
Minimum Level of analysis (amphibole):	ADX	Grid Openings Analyzed:	100	
Magnification used for fiber counting:	10,000 x	Min Str. Length/ Max Str. Diameter:	>5 / <0.4	microns
Aspect ratio for fiber definition:	3:1	Analyst(s):	F. Craig	

Dust Generator-Total Dried Sample Weights	Soil % Moisture	0.9	%
>3/8" 126.140 g	Air Flow Rate Through ME opening of Dust Generator	1413.70	ml/min
Not Used <3/8" 3166.060 g	Air Flow Rate Through IST opening of Dust Generator	90.50	ml/min
Used in Tumbler <3/8" 51.190 g	Estimated Total Air Flow Through Elutriator	1504.20	ml/min

Analytical Sensitivity: 2.09E+06 Structure/g PM10 Limit of Detection: 6.24E+06 Structure/g PM10

Test for Uniformity (Chi-Square result) N/A

Note: Target analytical sensitivity could not be met. Samples contained a small amount of respirable particles.

Structure Class	Min ID Level Required	Counts		Density Str/mm ²	Conc. Str/g PM10	Poisson 95 % Confidence Interval	
		Primary Str.	Total Str.			Lower Limit Str/g PM10	Upper Limit Str/g PM10
Asbestos Structures > 5um, ≤ 10um	CD/ADX	0	0	< 2.31	< 6.24E+06	NA	6.24E+06
Asbestos Structures > 5um, ≤ 10um (Chrys)	CD	0	0	< 2.31	< 6.24E+06	NA	6.24E+06
Asbestos Structures > 5um, ≤ 10um (Amph)	ADX	0	0	< 2.31	< 6.24E+06	NA	6.24E+06
Asbestos Structures >10 um (Long)	CD/ADX	0	0	< 2.31	< 6.24E+06	NA	6.24E+06
Asbestos Structures >10 um (Chrys)	CD	0	0	< 2.31	< 6.24E+06	NA	6.24E+06
Asbestos Structures >10 um (Amph)	ADX	0	0	< 2.31	< 6.24E+06	NA	6.24E+06
Total Protocol Asbestos Structures	CD/ADX	0	0	< 2.31	< 6.24E+06	NA	6.24E+06
Protocol Asbestos Structures(Chrys)	CD	0	0	< 2.31	< 6.24E+06	NA	6.24E+06
Protocol Asbestos Structures (Amph)	ADX	0	0	< 2.31	< 6.24E+06	NA	6.24E+06
Total Protocol Non Asbestos Structures	NAM	0	0				

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Date Sampled: 09/11/2019

Customer ID: EVEM42

Customer PO: NA

Received: 9/16/19 8:43 AM

EMSL Order: 041927219

Date Prepared: 9/20/2019

Analysis Date(s): 9/30/2019

Report Date: 10/7/2019

EPA 540-R-97-028 -Superfund Method

*Draft Modified Elutriator Method for the Determination of Asbestos in Soils and Bulk Material Method
 (Revision 1)*

EMSL Sample Number	041927219-0005	Mass of Respirable Dust on Filter:	0.000121	g
Customer Sample Number:	RISB-EJ-03-1.0-20190911-FD	Area of collection filter:	385	mm ²
Minimum Level of analysis (chrysotile):	CD	Grid openings Area:	0.0128	mm ²
Minimum Level of analysis (amphibole):	ADX	Grid Openings Analyzed:	100	
Magnification used for fiber counting:	10,000 x	Min Str. Length/ Max Str. Diameter:	>5 / <0.4	microns
Aspect ratio for fiber definition:	3:1	Analyst(s):	F. Craig	

Dust Generator-Total Dried Sample Weights	Soil % Moisture	1.2	%
>3/8" 195.590 g	Air Flow Rate Through ME opening of Dust Generator	1454.40	ml/min
Not Used <3/8" 3275.880 g	Air Flow Rate Through IST opening of Dust Generator	87.09	ml/min
Used in Tumbler <3/8" 52.540 g	Estimated Total Air Flow Through Elutriator	1541.49	ml/min

Analytical Sensitivity: 2.49E+06 Structure/g PM10 Limit of Detection: 7.43E+06 Structure/g PM10

Test for Uniformity (Chi-Square result) Random (99)

Note: Target analytical sensitivity could not be met. Samples contained a small amount of respirable particles.

Structure Class	Min ID Level Required	Counts		Density Str/mm ²	Conc. Str/g PM10	Poisson 95 % Confidence Interval	
		Primary Str.	Total Str.			Lower Limit Str/g PM10	Upper Limit Str/g PM10
Asbestos Structures > 5um, ≤ 10um	CD/ADX	0	0	< 2.34	< 7.43E+06	NA	7.43E+06
Asbestos Structures > 5um, ≤ 10um (Chrys)	CD	0	0	< 2.34	< 7.43E+06	NA	7.43E+06
Asbestos Structures > 5um, ≤ 10um (Amph)	ADX	0	0	< 2.34	< 7.43E+06	NA	7.43E+06
Asbestos Structures >10 um (Long)	CD/ADX	0	0	< 2.34	< 7.43E+06	NA	7.43E+06
Asbestos Structures >10 um (Chrys)	CD	0	0	< 2.34	< 7.43E+06	NA	7.43E+06
Asbestos Structures >10 um (Amph)	ADX	0	0	< 2.34	< 7.43E+06	NA	7.43E+06
Total Protocol Asbestos Structures	CD/ADX	0	0	< 2.34	< 7.43E+06	NA	7.43E+06
Protocol Asbestos Structures(Chrys)	CD	0	0	< 2.34	< 7.43E+06	NA	7.43E+06
Protocol Asbestos Structures (Amph)	ADX	0	0	< 2.34	< 7.43E+06	NA	7.43E+06

Total Protocol Non Asbestos Structures NAM 0 0

Note: The concentration of asbestos and the 95% Confidence Intervals are reported on the basis of the Poissonian distribution and the Total Structure count. Structure counts above 31 may be better expressed with a Gaussian distribution. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL is not responsible for sample collection activities or analytical method limitations. Interpretation and use of results are the responsibility of the client.

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Customer PO: NA

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EMSL Order: 041927219

Date Prepared: 9/20/2019

Analysis Date(s): 10/1/2019

Report Date: 10/7/2019

EPA 540-R-97-028 -Superfund Method

*Draft Modified Elutriator Method for the Determination of Asbestos in Soils and Bulk Material Method
 (Revision 1)*

EMSL Sample Number	041927219-0006	Mass of Respirable Dust on Filter:	0.000147	g
Customer Sample Number:	RISB-ER-03-1.0-20190911	Area of collection filter:	385	mm ²
Minimum Level of analysis (chrysotile):	CD	Grid openings Area:	0.0128	mm ²
Minimum Level of analysis (amphibole):	ADX	Grid Openings Analyzed:	100	
Magnification used for fiber counting:	10,000 x	Min Str. Length/ Max Str. Diameter:	>5 / <0.4	microns
Aspect ratio for fiber definition:	3:1	Analyst(s):	F. Craig	

Dust Generator-Total Dried Sample Weights	Soil % Moisture	1.1	%
>3/8" 307.900 g	Air Flow Rate Through ME opening of Dust Generator	1470.30	ml/min
Not Used <3/8" 3261.400 g	Air Flow Rate Through IST opening of Dust Generator	91.88	ml/min
Used in Tumbler <3/8" 53.680 g	Estimated Total Air Flow Through Elutriator	1562.18	ml/min

Analytical Sensitivity: 2.05E+06 Structure/g PM10 Limit of Detection: 6.12E+06 Structure/g PM10

Test for Uniformity (Chi-Square result) Random (94.99)

Note: Target analytical sensitivity could not be met. Samples contained a small amount of respirable particles.

Structure Class	Min ID Level Required	Counts		Density Str/mm ²	Conc. Str/g PM10	Poisson 95 % Confidence Interval	
		Primary Str.	Total Str.			Lower Limit Str/g PM10	Upper Limit Str/g PM10
Asbestos Structures > 5um, ≤ 10um	CD/ADX	0	0	< 2.34	< 6.12E+06	NA	6.12E+06
Asbestos Structures > 5um, ≤ 10um (Chrys)	CD	0	0	< 2.34	< 6.12E+06	NA	6.12E+06
Asbestos Structures > 5um, ≤ 10um (Amph)	ADX	0	0	< 2.34	< 6.12E+06	NA	6.12E+06
Asbestos Structures >10 um (Long)	CD/ADX	0	0	< 2.34	< 6.12E+06	NA	6.12E+06
Asbestos Structures >10 um (Chrys)	CD	0	0	< 2.34	< 6.12E+06	NA	6.12E+06
Asbestos Structures >10 um (Amph)	ADX	0	0	< 2.34	< 6.12E+06	NA	6.12E+06
Total Protocol Asbestos Structures	CD/ADX	0	0	< 2.34	< 6.12E+06	NA	6.12E+06
Protocol Asbestos Structures(Chrys)	CD	0	0	< 2.34	< 6.12E+06	NA	6.12E+06
Protocol Asbestos Structures (Amph)	ADX	0	0	< 2.34	< 6.12E+06	NA	6.12E+06
Total Protocol Non Asbestos Structures	NAM	0	0				

Asbestiform Amphibole Present: Actinolite Non-Regulated Amphibole

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Analysis Date(s): 10/3/2019

Report Date: 10/7/2019

EPA 540-R-97-028 -Superfund Method

Draft Modified Elutriator Method for the Determination of Asbestos in Soils and Bulk Material Method (Revision 1)

EMSL Sample Number	041927219-0007	Mass of Respirable Dust on Filter:	0.000106	g
Customer Sample Number:	RISB-ER-01-1.0-20190911	Area of collection filter:	385	mm ²
Minimum Level of analysis (chrysotile):	CD	Grid openings Area:	0.0128	mm ²
Minimum Level of analysis (amphibole):	ADX	Grid Openings Analyzed:	100	
Magnification used for fiber counting:	10,000 x	Min Str. Length/ Max Str. Diameter:	>5 / <0.4	microns
Aspect ratio for fiber definition:	3:1	Analyst(s):	F. Craig	
Dust Generator-Total Dried Sample Weights		Soil % Moisture	1.0	%
>3/8"	204.580 g	Air Flow Rate Through ME opening of Dust Generator	1430.30	ml/min
Not Used <3/8"	3126.690 g	Air Flow Rate Through IST opening of Dust Generator	91.87	ml/min
Used in Tumbler <3/8"	53.290 g	Estimated Total Air Flow Through Elutriator	1522.17	ml/min

Analytical Sensitivity: 2.84E+06 Structure/g PM10 Limit of Detection: 8.48E+06 Structure/g PM10

Test for Uniformity (Chi-Square result) Random (97.99)

Note: Target analytical sensitivity could not be met. Samples contained a small amount of respirable particles.

Structure Class	Min ID Level Required	Counts		Density Str/mm ²	Conc. Str/g PM10	Poisson 95 % Confidence Interval	
		Primary Str.	Total Str.			Lower Limit Str/g PM10	Upper Limit Str/g PM10
Asbestos Structures > 5um, ≤ 10um	CD/ADX	0	0	< 2.34	< 8.48E+06	NA	8.48E+06
Asbestos Structures > 5um, ≤ 10um (Chrys)	CD	0	0	< 2.34	< 8.48E+06	NA	8.48E+06
Asbestos Structures > 5um, ≤ 10um (Amph)	ADX	0	0	< 2.34	< 8.48E+06	NA	8.48E+06
Asbestos Structures >10 um (Long)	CD/ADX	0	0	< 2.34	< 8.48E+06	NA	8.48E+06
Asbestos Structures >10 um (Chrys)	CD	0	0	< 2.34	< 8.48E+06	NA	8.48E+06
Asbestos Structures >10 um (Amph)	ADX	0	0	< 2.34	< 8.48E+06	NA	8.48E+06
Total Protocol Asbestos Structures	CD/ADX	0	0	< 2.34	< 8.48E+06	NA	8.48E+06
Protocol Asbestos Structures(Chrys)	CD	0	0	< 2.34	< 8.48E+06	NA	8.48E+06
Protocol Asbestos Structures (Amph)	ADX	0	0	< 2.34	< 8.48E+06	NA	8.48E+06
Total Protocol Non Asbestos Structures	NAM	0	0				

Asbestiform Amphibole Present: Amosite Non-Regulated Amphibole

Note: The concentration of asbestos and the 95% Confidence Intervals are reported on the basis of the Poissonian distribution and the Total Structure count. Structure counts above 31 may be better expressed with a Gaussian distribution. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL is not responsible for sample collection activities or analytical method limitations. Interpretation and use of results are the responsibility of the client.

Approved Signatory



EMSL Analytical, Inc.

200 Route 130 North, Cinnaminson, NJ 08077
 Phone: (800) 220-3675 Fax: (856) 858-1292
 Email: WestmontAsbLab@emsl.com

Attn: *Craig Knox*
 Ramboll Environ US Corporation
 2200 Powell Street Suite 700
 Emeryville, CA 94608

Phone: 510-420-2518

Fax: 510-655-9517

Project: NERT Phase 2 Mod. 12 / 1690011200-028

Date Sampled: 09/11/2019

Customer ID: EVEM42

Customer PO: NA

Received: 9/16/19 8:43 AM

EMSL Order: 041927219

Date Prepared: 9/23/2019

Analysis Date(s): 10/6/2019

Report Date: 10/7/2019

EPA 540-R-97-028 -Superfund Method

*Draft Modified Elutriator Method for the Determination of Asbestos in Soils and Bulk Material Method
 (Revision 1)*

EMSL Sample Number	041927219-0008	Mass of Respirable Dust on Filter:	0.000116	g
Customer Sample Number:	RISB-EJ-01-1.0-20190911	Area of collection filter:	385	mm ²
Minimum Level of analysis (chrysotile):	CD	Grid openings Area:	0.0128	mm ²
Minimum Level of analysis (amphibole):	ADX	Grid Openings Analyzed:	100	
Magnification used for fiber counting:	10,000 x	Min Str. Length/ Max Str. Diameter:	>5 / <0.4	microns
Aspect ratio for fiber definition:	3:1	Analyst(s):	F. Craig	

Dust Generator-Total Dried Sample Weights	Soil % Moisture	1.7	%
>3/8" 233.100 g	Air Flow Rate Through ME opening of Dust Generator	1423.90	ml/min
Not Used <3/8" 3104.620 g	Air Flow Rate Through IST opening of Dust Generator	95.10	ml/min
Used in Tumbler <3/8" 55.130 g	Estimated Total Air Flow Through Elutriator	1519.00	ml/min

Analytical Sensitivity: 2.59E+06 Structure/g PM10 Limit of Detection: 7.75E+06 Structure/g PM10

Test for Uniformity (Chi-Square result) N/A

Note: Target analytical sensitivity could not be met. Samples contained a small amount of respirable particles.

Structure Class	Min ID Level Required	Counts		Density Str/mm ²	Conc. Str/g PM10	Poisson 95 % Confidence Interval	
		Primary Str.	Total Str.			Lower Limit Str/g PM10	Upper Limit Str/g PM10
Asbestos Structures > 5um, ≤ 10um	CD/ADX	0	0	< 2.34	< 7.75E+06	NA	7.75E+06
Asbestos Structures > 5um, ≤ 10um (Chrys)	CD	0	0	< 2.34	< 7.75E+06	NA	7.75E+06
Asbestos Structures > 5um, ≤ 10um (Amph)	ADX	0	0	< 2.34	< 7.75E+06	NA	7.75E+06
Asbestos Structures >10 um (Long)	CD/ADX	0	0	< 2.34	< 7.75E+06	NA	7.75E+06
Asbestos Structures >10 um (Chrys)	CD	0	0	< 2.34	< 7.75E+06	NA	7.75E+06
Asbestos Structures >10 um (Amph)	ADX	0	0	< 2.34	< 7.75E+06	NA	7.75E+06
Total Protocol Asbestos Structures	CD/ADX	0	0	< 2.34	< 7.75E+06	NA	7.75E+06
Protocol Asbestos Structures(Chrys)	CD	0	0	< 2.34	< 7.75E+06	NA	7.75E+06
Protocol Asbestos Structures (Amph)	ADX	0	0	< 2.34	< 7.75E+06	NA	7.75E+06
Total Protocol Non Asbestos Structures	NAM	0	0				

Note: The concentration of asbestos and the 95% Confidence Intervals are reported on the basis of the Poissonian distribution and the Total Structure count. Structure counts above 31 may be better expressed with a Gaussian distribution. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL is not responsible for sample collection activities or analytical method limitations. Interpretation and use of results are the responsibility of the client.

Approved Signatory

EMSL Analytical, Inc
Elutriator Prep Worksheet



EMSL Ord./sample: 041927219 -0001
Client Sample ID: RISB-ER-02-1.0-20190911

Date: 9/18/2019
System: 3
Operator: CB

Sample Drying:
Temperature (C): 97.5
Start Date: 9/16/2019
End Date: 9/17/2019

Sample Weight (g) **Total Dried Sample Weight (g)**
Pre Drying: 3343.63 g >3/8": 0 g
Post Drying: 3318.05 g <3/8": 52.4 g (In Tumbler)
% moisture: 0.8 <3/8": 3266 g (Not Used)

	Start Date	Start Time	Stop Date	Stop Time
Conditioning	17-Sep-19	16:30	18-Sep-19	9:38
Tumbling	18-Sep-19	9:38	18-Sep-19	14:38

Tumbling Speed RH: 52
30 rpm TEMP: 21.3

% Moisture from surrogate sample
Pre Dry: g % Moisture
Post Dry: g
Reviewed:
Date:

1438.7 83.33 mL/min
ME IST



Following results are needed for calculation of asbestos concentration in the total sample mass

Resp. Mass	mo (mg)=	88			Resp.%=	ME Filter Information				
Emission rate	k=	0.0003			0.16794					
Filter ID #	Filter ME	Preweight (mg)	Post-Weight (mg)	Col. Time (minutes)	mf (mg)	Total Time (min)	In(mo-mf)	t(min)	In(mo-mf)	In(mo)
1	ME	24.800	25.226	20	0.426	20	4.472	20	4.4725	4.4773
2	ME	24.850	25.746	30	1.322	50	4.462	50	4.4622	4.4773
3	ME	24.750	25.671	40	2.243	90	4.452	90	4.4515	4.4773
4	ME	24.461	25.163	40	2.945	130	4.443	130	4.4433	4.4773
5	ME	25.085	26.320	40	4.180	170	4.429	170	4.4287	4.4773
6	ME	24.861	25.810	40	5.129	210	4.417	210	4.4173	4.4773
7	ME	24.298	25.265	40	6.096	250	4.406	250	4.4055	4.4773
8	ME	24.511	25.232	40	6.817	290	4.397	290	4.3967	4.4773
	ME									
	ME									
	ME									
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	ME									
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EMSL Analytical, Inc
Elutriator Prep Worksheet

EMSL Ord./sample:	041927219-0001
Client Sample ID:	RISB-ER-02-1.0-20190911

IST Filter Information

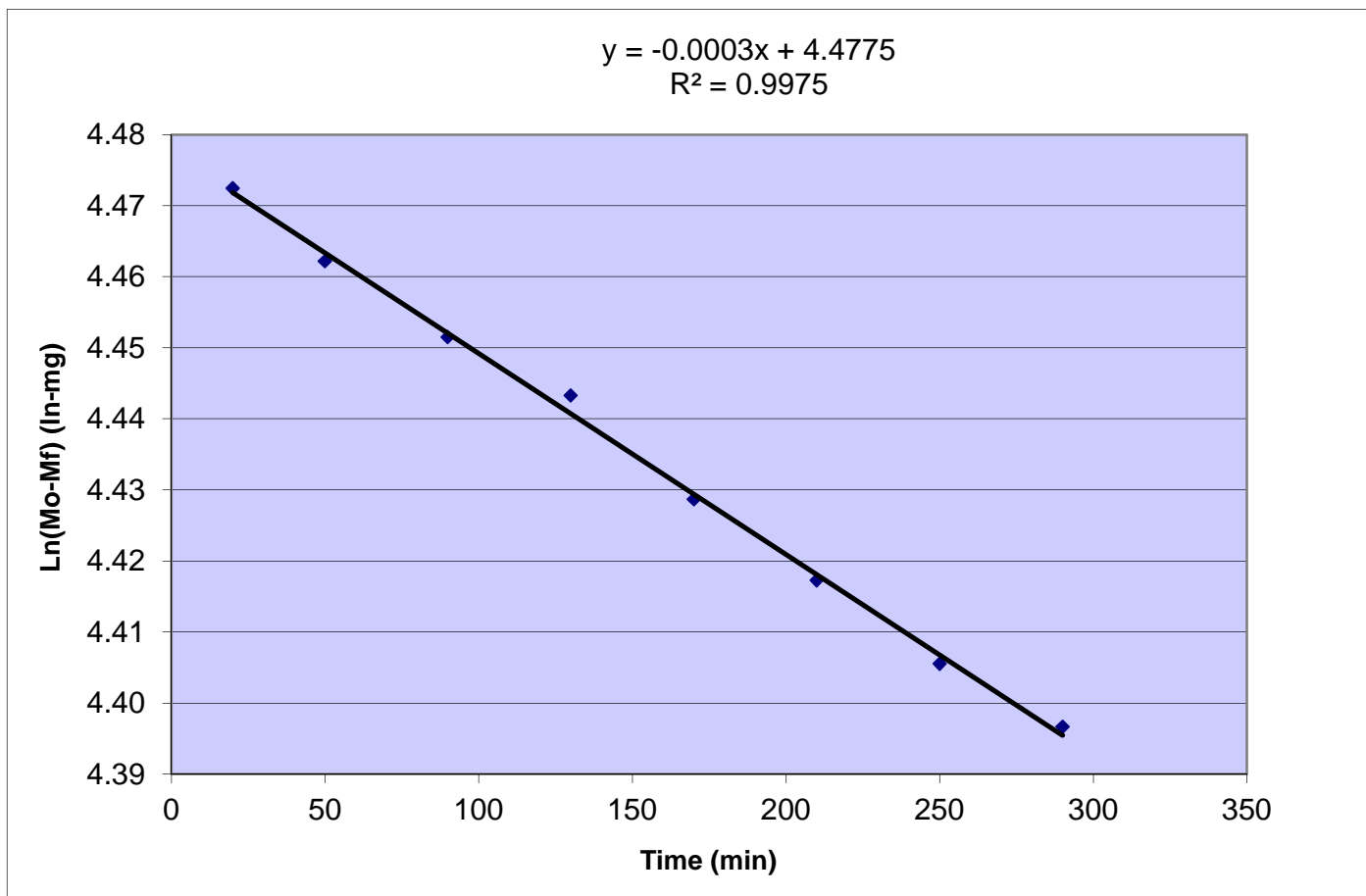
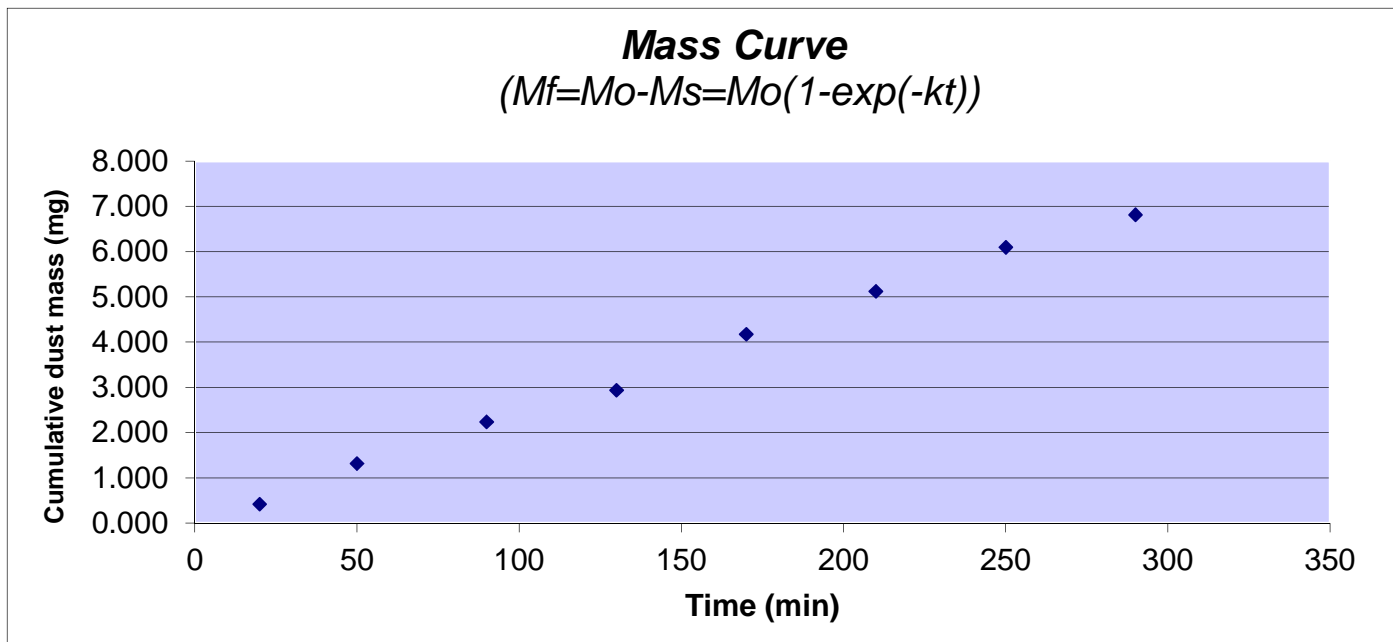
Filter ID #	Filter IST	Preweight (mg)	Post-Weight (mg)	Δ MF (mg)
1	IST	27.556	27.658	0.102
2	IST	27.688	27.896	0.208
3	IST	27.556	27.662	0.106
4	IST	27.435	27.579	0.144
5	IST	27.63	27.83	0.200
6	IST	27.58	27.72	0.140
7	IST	27.671	27.82	0.149
8	IST			0.000
	IST			0.000
	IST			0.000

Enter Filter numbers
that are to be sent.

Filters sent to another lab for analysis
3
4

Filter Lot Used	Filter Type: Pore Size	
60610200	MCE	0.2
microns		

EMSL Ord./sample:	041927219-0001
Client Sample ID:	RISB-ER-02-1.0-20190911





EPA 540-R-97-028 -Superfund Method

Draft Modified Elutriator Method for the Determination of Asbestos in Soils and Bulk Material Method
(Revision 1)

Bench Sheet Data

Client: Craig Knox, Ramboll Environ US Corporation			
EMSL Sample ID:	041927219-0001	GO area (mm ²):	0.013
Customer Sample:	RISB-ER-02-1.0-20190911	Grid Box :	0149-Special Projects-105: J
		Pore Size (micron):	0.2
Project ID:	1690011200-028 / NERT Phase 2 Mod. 12		Analysis Date:
		Scope:	JEOL-1010 (04-09)
		Mag:	10,000
		Analyst(s):	P. Harrison

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Image Number	Structure Comments
			Primary	Total	Length	Width				
J1	B10	None Detected								
J1	B8	None Detected								
J1	B6	None Detected								
J1	B4	None Detected								
J1	B2	None Detected								
J1	C1	None Detected								
J1	C3	None Detected								
J1	C5	None Detected								
J1	C7	None Detected								
J1	C9	None Detected								
J1	D10	None Detected								
J1	D8	None Detected								
J1	D6	None Detected								
J1	D4	None Detected								
J1	D2	None Detected								
J1	E1	None Detected								
J1	E3	None Detected								
J1	E5	None Detected								
J1	E9	None Detected								
J1	F10	None Detected								
J1	F8	None Detected								
J1	F6	None Detected								
J1	F4	None Detected								
J1	F2	None Detected								
J1	G1	None Detected								
J1	G3	None Detected								
J1	G5	None Detected								
J1	G7	None Detected								
J1	G9	None Detected								
J1	H10	None Detected								
J1	H8	None Detected								
J1	H6	None Detected								
J1	H4	None Detected								
J1	H2	None Detected								
J1	I1	None Detected								
J1	I3	None Detected								
J1	I5	None Detected								
J1	I7	None Detected								
J1	I9	None Detected								
J1	J10	None Detected								



EPA 540-R-97-028 -Superfund Method

Draft Modified Elutriator Method for the Determination of Asbestos in Soils and Bulk Material Method
(Revision 1)

Bench Sheet Data

Client: Craig Knox, Ramboll Environ US Corporation				
EMSL Sample ID:	041927219-0001	GO area (mm ²):	0.013	Scope: JEOL-1010 (04-09)
Customer Sample:	RISB-ER-02-1.0-20190911	Grid Box :	0149-Special Projects-105: J	Mag: 10,000
		Pore Size (micron):	0.2	Analyst(s): P. Harrison
Project ID:	1690011200-028 / NERT Phase 2 Mod. 12			Analysis Date: 09/20/2019

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Image Number	Structure Comments
			Primary	Total	Length	Width				
J1	J8	None Detected								
J1	J6	None Detected								
J1	J4	None Detected								
J1	J2	None Detected								
J2	J10	None Detected								
J2	J8	None Detected								
J2	J6	None Detected								
J2	J4	None Detected								
J2	J2	None Detected								
J2	I1	None Detected								
J2	I3	None Detected								
J2	I5	None Detected								
J2	I7	None Detected								
J2	I9	None Detected								
J2	H10	None Detected								
J2	H8	None Detected								
J2	H2	None Detected								
J2	G1	None Detected								
J2	G3	None Detected								
J2	G5	None Detected								
J2	G7	None Detected								
J2	G9	None Detected								
J2	F10	None Detected								
J2	F8	None Detected								
J2	F2	None Detected								
J2	E1	None Detected								
J2	E3	None Detected								
J2	E5	None Detected								
J2	E7	None Detected								
J2	E9	None Detected								
J2	D10	None Detected								
J2	D8	None Detected								
J2	D6	None Detected								
J2	D4	None Detected								
J2	C1	None Detected								
J2	C3	None Detected								
J2	C5	None Detected								
J2	C7	None Detected								
J2	C9	None Detected								
J2	B10	None Detected								



EPA 540-R-97-028 -Superfund Method

Draft Modified Elutriator Method for the Determination of Asbestos in Soils and Bulk Material Method
(Revision 1)

Bench Sheet Data

Client:		Craig Knox, Ramboll Environ US Corporation			
EMSL Sample ID:	041927219-0001	GO area (mm ²):	0.013	Scope:	JEOL-1010 (04-09)
Customer Sample:	RISB-ER-02-1.0-20190911	Grid Box :	0149-Special Projects-105: J	Mag:	10,000
		Pore Size (micron):	0.2	Analyst(s):	P. Harrison
Project ID:	1690011200-028 / NERT Phase 2 Mod. 12			Analysis Date:	09/20/2019

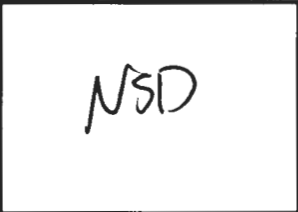













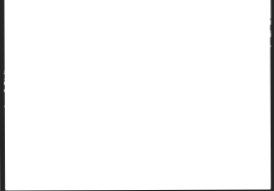
Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Image Number	Structure Comments
			Primary	Total	Length	Width				
J2	B8	None Detected								
J2	B6	None Detected								
J2	B4	None Detected								
J2	B2	None Detected								
J2	A1	None Detected								
J2	A3	None Detected								
J2	A5	None Detected								
J2	A7	None Detected								
J2	A9	None Detected								
J3	J10	None Detected								
J3	J8	None Detected								
J3	J6	None Detected								
J3	J4	None Detected								
J3	J2	None Detected								
J3	I1	None Detected								
J3	I3	None Detected								
J3	I5	None Detected								
J3	I9	None Detected								
J3	H8	None Detected								
J3	H6	None Detected								




EPA 540-R-97-028 -Superfund Method
Draft Modified Elutriator Method for the Determination of Asbestos in Soils
and Bulk Material Method (Revision 1)
Structure Sketch Sheet for Direct Data Entry

EMSL Order ID: 041927219-0001
Client Sample: RISB-ER-02-1.0-20190911

Client: Ramboll Environ US Corporation
Page 1 of 1

Primary Structure # 	Primary Structure # 	Primary Structure # 	Primary Structure # 
Primary Structure # 	Primary Structure # 	Primary Structure # 	Primary Structure # 
Primary Structure # 	Primary Structure # 	Primary Structure # 	Primary Structure # 
Primary Structure # 	Primary Structure # 	Primary Structure # 	Primary Structure # 
Structure # 	Structure # 	Structure # 	Structure # 

Analyst: 

Date: 9/20/19

Scope: 0409

EMSL Analytical, Inc
Elutriator Prep Worksheet

EMSL Ord./sample:	041927219 -0002
Client Sample ID:	RISB-EJ-02-1.0-20190911

Date:	9/18/2019
System:	2
Operator:	MS



Sample Drying:	
Temperature (C):	97.5
Start Date:	9/16/2019
End Date:	9/17/2019

Sample Weight (g)		Total Dried Sample Weight (g)	
Pre Drying	2525.62 g	>3/8"	0 g
Post Drying	2440.69 g	<3/8"	54.83 g (In Tumbler)
% moisture	3.4	<3/8"	2386 g (Not Used)

	Start Date	Start Time	Stop Date	Stop Time
Conditioning	17-Sep-19	16:30	18-Sep-19	9:52
Tumbling	18-Sep-19	9:52	18-Sep-19	14:52

Tumbling Speed RH: 52
30 rpm TEMP: 21.3

% Moisture from surrogate sample		Reviewed:	Date:
Pre Dry	g		
Post Dry	g		

1435.5 ME 91.52 IST mL/min



Following results are needed for calculation of asbestos concentration in the total sample mass

Resp. Mass	mo (mg)=	70				Resp.%=	ME Filter Information				
Emission rate	k=	0.0047				0.12767					
Filter ID #	Filter ME	Preweight (mg)	Post-Weight (mg)	Col. Time (minutes)	mf (mg)	Total Time (min)	In(mo-mf)	t(min)	In(mo-mf)	In(mo)	
1	ME	24.679	27.149	20	2.470	20	4.213	20	4.2126	4.2485	
2	ME	24.793	36.597	30	14.274	50	4.020	50	4.0204	4.2485	
3	ME	24.965	34.191	40	23.500	90	3.839	90	3.8395	4.2485	
4	ME	24.624	32.232	40	31.108	130	3.661	130	3.6608	4.2485	
5	ME	24.684	30.623	40	37.047	170	3.495	170	3.4951	4.2485	
6	ME	24.748	30.264	40	42.563	210	3.312	210	3.3119	4.2485	
7	ME	24.830	29.710	40	47.443	250	3.116	250	3.1160	4.2485	
8	ME	24.774	29.083	40	51.752	290	2.904	290	2.9041	4.2485	
	ME										
	ME										
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Remove Contents of cells that have no data

EMSL Analytical, Inc
Elutriator Prep Worksheet

EMSL Ord./sample:	041927219-0002
Client Sample ID:	RISB-EJ-02-1.0-20190911

IST Filter Information

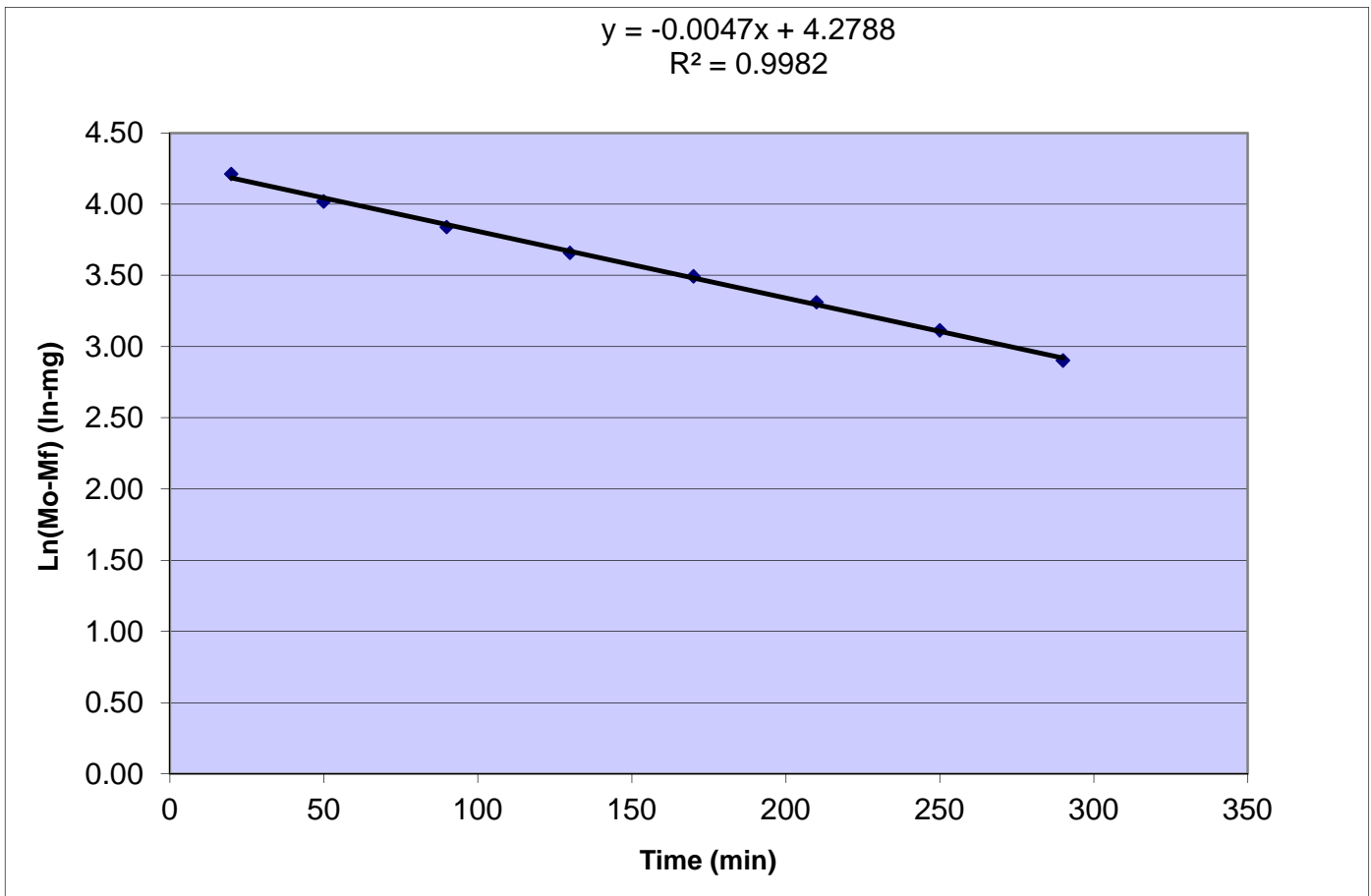
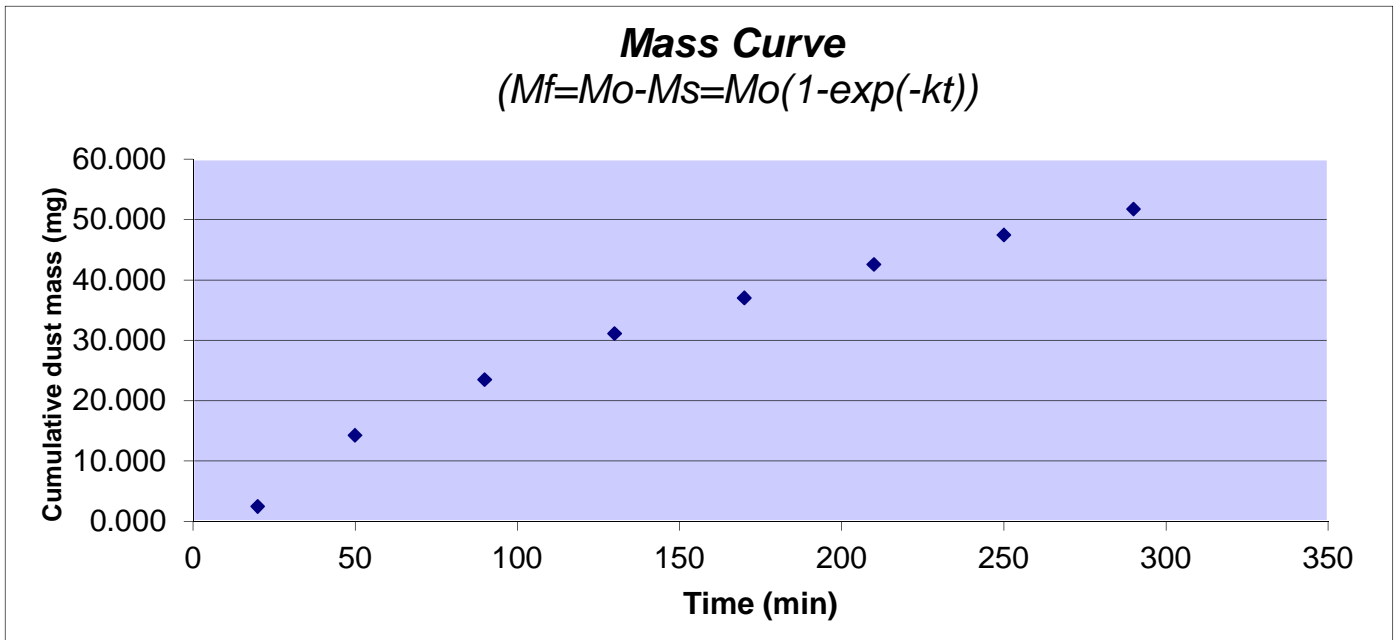
Enter Filter numbers
that are to be sent.

Filter ID #	Filter IST	Preweight (mg)	Post-Weight (mg)	Δ MF (mg)
1	IST	27.692	27.812	0.120
2	IST	27.73	27.852	0.122
3	IST	27.585	27.705	0.120
4	IST	27.714	27.82	0.106
5	IST	27.647	27.762	0.115
6	IST			0.000
7	IST			0.000
8	IST			0.000
	IST			0.000
	IST			0.000

Filters sent to another lab for analysis
1
4

Filter Lot Used	Filter Type: Pore Size	
60610200	MCE	0.2
microns		

EMSL Ord./sample:	041927219-0002
Client Sample ID:	RISB-EJ-02-1.0-20190911





EPA 540-R-97-028 -Superfund Method

Draft Modified Elutriator Method for the Determination of Asbestos in Soils and Bulk Material Method
(Revision 1)

Bench Sheet Data

Client: Craig Knox, Ramboll Environ US Corporation					
EMSL Sample ID:	041927219-0002	GO area (mm ²):	0.013	Scope:	JEOL-1010 (04-09)
Customer Sample:	RISB-EJ-02-1.0-20190911	Grid Box :	0419-Special Projects-105: K	Mag:	10,000
		Pore Size (micron):	0.2	Analyst(s):	P. Harrison
Project ID:	1690011200-028 / NERT Phase 2 Mod. 12			Analysis Date:	09/23/2019

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Image Number	Structure Comments
			Primary	Total	Length	Width				
K1	A1	None Detected								
K1	A3	None Detected								
K1	A5	None Detected								
K1	A7	None Detected								
K1	A9	None Detected								
K1	B10	None Detected								
K1	B8	None Detected								
K1	B6	None Detected								
K1	B4	None Detected								
K1	B2	None Detected								
K1	C1	None Detected								
K1	C3	None Detected								
K1	C5	None Detected								
K1	C7	None Detected								
K1	C9	None Detected								
K1	D10	None Detected								
K1	D8	None Detected								
K1	D6	None Detected								
K1	D4	None Detected								
K1	D2	None Detected								
K1	E1	None Detected								
K1	E3	None Detected								
K1	E5	None Detected								
K1	E7	None Detected								
K1	E9	None Detected								
K1	F10	None Detected								
K1	F8	None Detected								
K1	F6	None Detected								
K1	F4	None Detected								
K1	F2	None Detected								
K1	G1	None Detected								
K1	G3	None Detected								
K1	G5	None Detected								
K1	G7	None Detected								
K1	G9	None Detected								
K1	H10	None Detected								
K1	H8	None Detected								
K1	H6	None Detected								
K1	H4	None Detected								
K1	H2	None Detected								



EPA 540-R-97-028 -Superfund Method

Draft Modified Elutriator Method for the Determination of Asbestos in Soils and Bulk Material Method
(Revision 1)

Bench Sheet Data

Client: Craig Knox, Ramboll Environ US Corporation			
EMSL Sample ID:	041927219-0002	GO area (mm ²):	0.013
Customer Sample:	RISB-EJ-02-1.0-20190911	Grid Box :	0419-Special Projects-105: K
		Pore Size (micron):	0.2
Project ID:	1690011200-028 / NERT Phase 2 Mod. 12		Analysis Date: 09/23/2019
		Scope:	JEOL-1010 (04-09)
		Mag:	10,000
		Analyst(s):	P. Harrison

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Image Number	Structure Comments
			Primary	Total	Length	Width				
K1	I1	None Detected								
K1	I3	None Detected								
K1	I5	None Detected								
K1	I7	None Detected								
K1	I9	None Detected								
K1	J10	None Detected								
K1	J8	None Detected								
K1	J6	None Detected								
K1	J4	None Detected								
K1	J2	None Detected								
K2	J10	None Detected								
K2	J8	None Detected								
K2	J6	None Detected								
K2	J4	None Detected								
K2	J2	None Detected								
K2	I1	None Detected								
K2	I3	None Detected								
K2	I5	None Detected								
K2	I9	None Detected								
K2	H10	None Detected								
K2	H8	None Detected								
K2	H6	None Detected								
K2	H4	None Detected								
K2	H2	None Detected								
K2	G1	None Detected								
K2	G3	None Detected								
K2	G5	None Detected								
K2	G7	None Detected								
K2	G9	None Detected								
K2	F10	None Detected								
K2	F8	None Detected								
K2	F6	None Detected								
K2	F4	None Detected								
K2	F2	None Detected								
K2	E1	None Detected								
K2	E3	None Detected								
K2	E5	None Detected								
K2	E9	None Detected								
K2	D10	None Detected								
K2	D8	None Detected								



EPA 540-R-97-028 -Superfund Method

Draft Modified Elutriator Method for the Determination of Asbestos in Soils and Bulk Material Method
(Revision 1)

Bench Sheet Data

Client:		Craig Knox, Ramboll Environ US Corporation			
EMSL Sample ID:	041927219-0002	GO area (mm ²):	0.013	Scope:	JEOL-1010 (04-09)
Customer Sample:	RISB-EJ-02-1.0-20190911	Grid Box :	0419-Special Projects-105: K	Mag:	10,000
		Pore Size (micron):	0.2	Analyst(s):	P. Harrison
Project ID:	1690011200-028 / NERT Phase 2 Mod. 12			Analysis Date:	09/23/2019

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Image Number	Structure Comments
			Primary	Total	Length	Width				
K2	D4	None Detected								
K2	D2	None Detected								
K2	C1	None Detected								
K2	C3	None Detected								
K2	C5	None Detected								
K2	C7	None Detected								
K2	C9	None Detected								
K2	B10	None Detected								
K2	B8	None Detected								
K2	B6	None Detected								
K2	B4	None Detected								
K2	B2	None Detected								
K2	A1	None Detected								
K2	A3	None Detected								
K2	A5	None Detected								
K2	A7	None Detected								
K2	A9	None Detected								
K3	J10	None Detected								
K3	J8	None Detected								
K3	J6	None Detected								



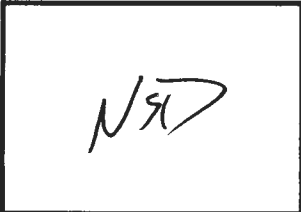


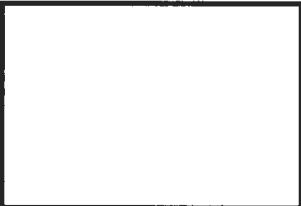
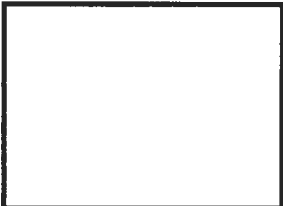
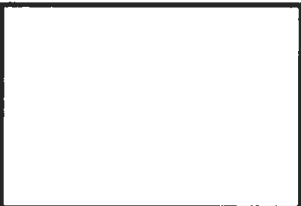






EPA 540-R-97-028 -Superfund Method
Draft Modified Elutriator Method for the Determination of Asbestos in Soils
and Bulk Material Method (Revision 1)
Structure Sketch Sheet for Direct Data Entry


EMSL Order ID: 041927219-0002

Client: Ramboll Environ US
Corporation

Client Sample: RISB-EJ-02-1.0-20190911

Page 1 of 1

Primary Structure # 	Primary Structure # 	Primary Structure # 	Primary Structure # 
Primary Structure # 	Primary Structure # 	Primary Structure # 	Primary Structure # 
Primary Structure # 	Primary Structure # 	Primary Structure # 	Primary Structure # 
Primary Structure # 	Primary Structure # 	Primary Structure # 	Primary Structure # 
Structure # 	Structure # 	Structure # 	Structure # 

Analyst: 

Date: 9/24/19

Scope: 0409

EMSL Analytical, Inc
Elutriator Prep Worksheet



EMSL Ord./sample: 041927219 -0003
Client Sample ID: RISB-EJ-04-1.0-20190911

Date: 9/19/2019
System: 3
Operator: CB

Sample Drying:
Temperature (C): 97.5
Start Date: 9/16/2019
End Date: 9/18/2019

Sample Weight (g) Total Dried Sample Weight (g)

Pre Drying	3067.66 g	>3/8"	170.3 g
Post Drying	2986.83 g	<3/8"	56.15 g (In Tumbler)
% moisture	2.6	<3/8"	2760 g (Not Used)

	Start Date	Start Time	Stop Date	Stop Time
Conditioning	18-Sep-19	16:00	19-Sep-19	10:04
Tumbling	19-Sep-19	10:04	19-Sep-19	15:04

Tumbling Speed RH: 50
30 rpm TEMP: 21.2C

% Moisture from surrogate sample

Pre Dry g % Moisture Reviewed:

Post Dry g Date:

1463.3 90.3 mL/min
ME IST



Following results are needed for calculation of asbestos concentration in the total sample mass

Resp. Mass	mo (mg)=	7		Resp. %=	ME Filter Information					
Emission rate	k=	0.0088		0.01247						
Filter ID #	Filter ME	Preweight (mg)	Post-Weight (mg)	Col. Time (minutes)	mf (mg)	Total Time (min)	In(mo-mf)	t(min)	In(mo-mf)	In(mo)
1	ME	24.442	26.220	20	1.778	20	1.653	20	1.6529	1.9459
2	ME	24.345	27.270	30	4.703	50	0.832	50	0.8316	1.9459
3	ME	24.673	25.457	40	5.487	90	0.414	90	0.4141	1.9459
4	ME	24.802	25.043	40	5.728	130	0.241	130	0.2406	1.9459
5	ME	24.442	24.621	40	5.907	170	0.089	170	0.0889	1.9459
6	ME	24.412	24.735	50	6.230	220	-0.261	220	-0.2614	1.9459
7	ME	24.688	25.026	50	6.568	270	-0.839	270	-0.8393	1.9459
8	ME	24.897	25.025	20	6.696	290	-1.191	290	-1.1907	1.9459
	ME									
	ME									
	ME									
	ME									
	ME									
	ME									
	ME									
	ME									
	ME									
	ME									
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	ME									
	ME									
	ME									
	ME									

Remove Contents of cells that have no data

EMSL Analytical, Inc
Elutriator Prep Worksheet

EMSL Ord./sample:	041927219-0003
Client Sample ID:	RISB-EJ-04-1.0-20190911

IST Filter Information

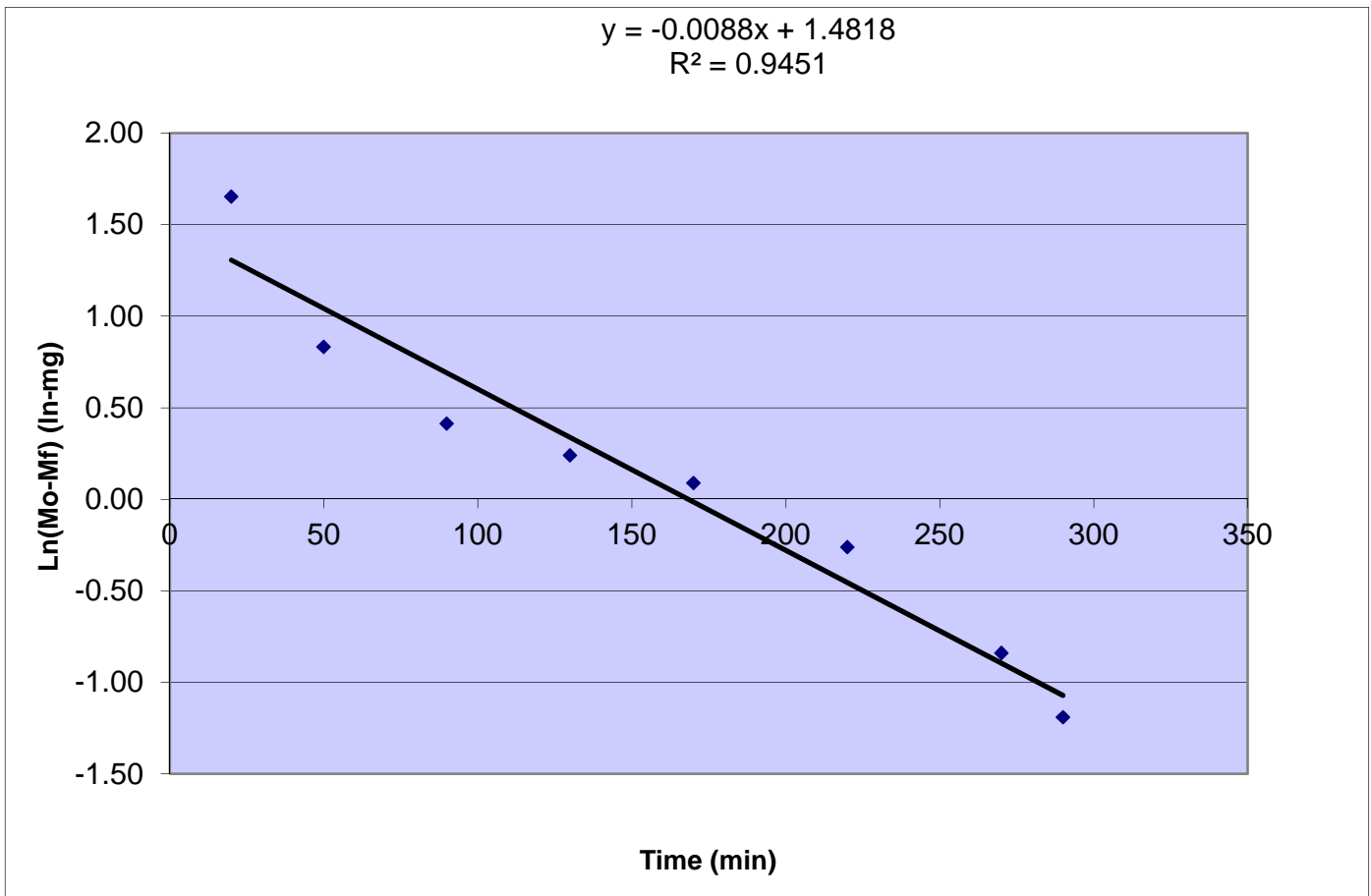
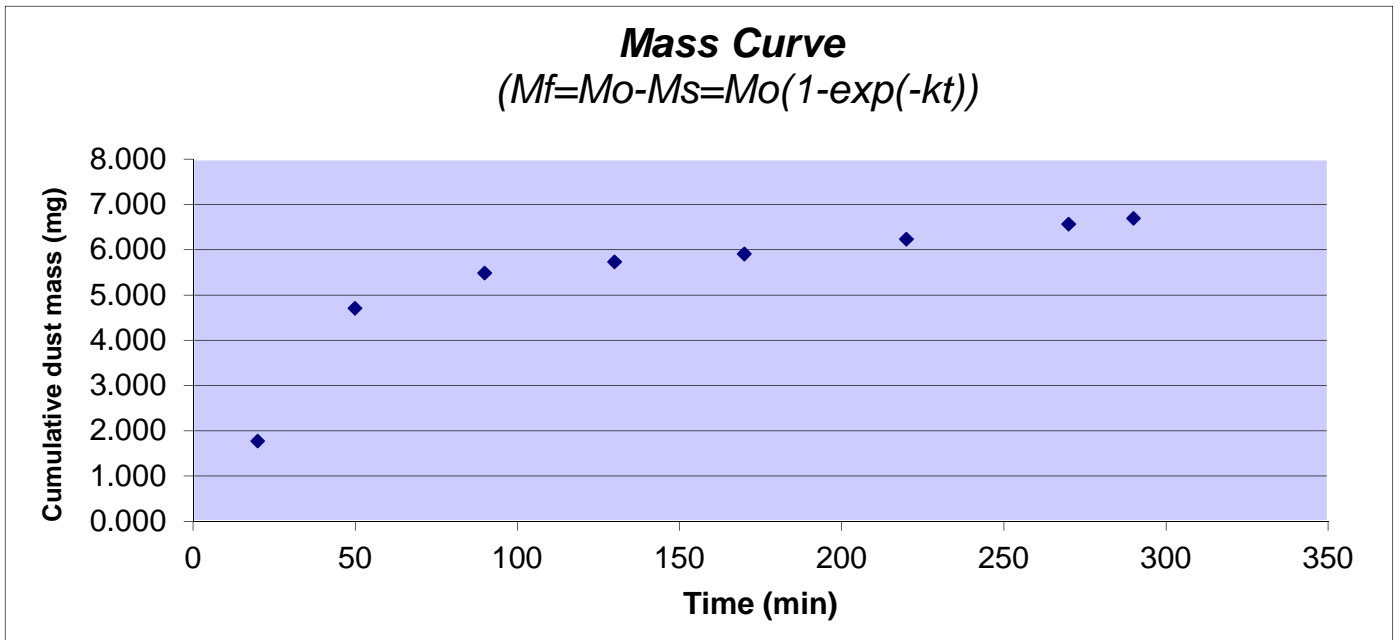
Filter ID #	Filter IST	Preweight (mg)	Post-Weight (mg)	Δ MF (mg)
1	IST	27.509	27.656	0.147
2	IST	27.478	27.67	0.192
3	IST	27.205	27.353	0.148
4	IST	27.456	27.557	0.101
5	IST	27.342	27.496	0.154
	IST			0.000
	IST			0.000
	IST			0.000
	IST			0.000
	IST			0.000

Enter Filter numbers
that are to be sent.

Filters sent to another lab for analysis
1
3

Filter Lot Used	Filter Type: Pore Size	
60610200	MCE	0.2
microns		

EMSL Ord./sample:	041927219-0003
Client Sample ID:	RISB-EJ-04-1.0-20190911





EPA 540-R-97-028 -Superfund Method

Draft Modified Elutriator Method for the Determination of Asbestos in Soils and Bulk Material Method
(Revision 1)

Bench Sheet Data

Client: Craig Knox, Ramboll Environ US Corporation					
EMSL Sample ID:	041927219-0003	GO area (mm ²):	0.013	Scope:	JEOL-1010 (04-09)
Customer Sample:	RISB-EJ-04-1.0-20190911	Grid Box :	0419-Special Projects-107: B	Mag:	10,000
		Pore Size (micron):	0.2	Analyst(s):	P. Harrison
Project ID:	1690011200-028 / NERT Phase 2 Mod. 12			Analysis Date:	09/24/2019

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Image Number	Structure Comments
			Primary	Total	Length	Width				
B5	J8	None Detected								
B5	J6	None Detected								
B5	J4	None Detected								
B5	I1	None Detected								
B5	I3	None Detected								
B5	I5	None Detected								
B5	I7	None Detected								
B5	I9	None Detected								
B5	H8	None Detected								
B5	H6	None Detected								
B5	H4	None Detected								
B5	H2	None Detected								
B5	G1	None Detected								
B5	G3	None Detected								
B5	G5	None Detected								
B5	G7	None Detected								
B5	G9	None Detected								
B5	F8	None Detected								
B5	F6	None Detected								
B5	F4	None Detected								
B5	F2	None Detected								
B5	E1	None Detected								
B5	E3	None Detected								
B5	E5	None Detected								
B5	E7	None Detected								
B5	E9	None Detected								
B5	D8	None Detected								
B5	D6	None Detected								
B5	D4	None Detected								
B5	D2	None Detected								
B5	C1	None Detected								
B5	C3	None Detected								
B5	C5	None Detected								
B5	C7	None Detected								
B5	C9	None Detected								
B6	I1	None Detected								
B6	I3	None Detected								
B6	H6	None Detected								
B6	H4	None Detected								
B6	H2	None Detected								



EPA 540-R-97-028 -Superfund Method

Draft Modified Elutriator Method for the Determination of Asbestos in Soils and Bulk Material Method
(Revision 1)

Bench Sheet Data

Client: Craig Knox, Ramboll Environ US Corporation			
EMSL Sample ID:	041927219-0003	GO area (mm ²):	0.013
Customer Sample:	RISB-EJ-04-1.0-20190911	Grid Box :	0419-Special Projects-107: B
		Pore Size (micron):	0.2
Project ID:	1690011200-028 / NERT Phase 2 Mod. 12		Analysis Date: 09/24/2019
		Scope:	JEOL-1010 (04-09)
		Mag:	10,000
		Analyst(s):	P. Harrison

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Image Number	Structure Comments
			Primary	Total	Length	Width				
B6	G3	None Detected								
B6	G5	None Detected								
B6	G9	None Detected								
B6	F6	None Detected								
B6	F4	None Detected								
B6	F2	None Detected								
B6	E1	None Detected								
B6	E3	None Detected								
B6	E5	None Detected								
B6	E7	None Detected								
B6	E9	None Detected								
B6	D6	None Detected								
B6	D4	None Detected								
B6	D2	None Detected								
B6	C1	None Detected								
B6	C3	None Detected								
B6	C5	None Detected								
B6	C7	None Detected								
B6	B8	None Detected								
B6	B6	None Detected								
B6	B4	None Detected								
B7	A3	None Detected								
B7	A5	None Detected								
B7	B8	None Detected								
B7	B6	None Detected								
B7	B4	None Detected								
B7	C3	None Detected								
B7	C5	None Detected								
B7	C7	None Detected								
B7	C9	None Detected								
B7	D10	None Detected								
B7	D8	None Detected								
B7	D6	None Detected								
B7	D4	None Detected								
B7	E3	None Detected								
B7	E5	None Detected								
B7	E7	None Detected								
B7	E9	None Detected								
B7	F10	None Detected								
B7	F8	None Detected								



EPA 540-R-97-028 -Superfund Method

Draft Modified Elutriator Method for the Determination of Asbestos in Soils and Bulk Material Method
(Revision 1)

Bench Sheet Data

Client:		Craig Knox, Ramboll Environ US Corporation			
EMSL Sample ID:	041927219-0003	GO area (mm ²):	0.013	Scope:	JEOL-1010 (04-09)
Customer Sample:	RISB-EJ-04-1.0-20190911	Grid Box :	0419-Special Projects-107: B	Mag:	10,000
		Pore Size (micron):	0.2	Analyst(s):	P. Harrison
Project ID:	1690011200-028 / NERT Phase 2 Mod. 12			Analysis Date:	09/24/2019

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Image Number	Structure Comments
			Primary	Total	Length	Width				
B7	F6	None Detected								
B7	F4	None Detected								
B7	F2	None Detected								
B7	G3	None Detected								
B7	G5	None Detected								
B7	G7	None Detected								
B7	G9	None Detected								
B7	H10	None Detected								
B7	H8	None Detected								
B7	H6	None Detected								
B7	H4	None Detected								
B7	H2	None Detected								
B7	I3	None Detected								
B7	I5	None Detected								
B7	I7	None Detected								
B7	I9	None Detected								
B7	J8	None Detected								
B7	J6	None Detected								
B7	J4	None Detected								
B7	J2	None Detected								



EPA 540-R-97-028 -Superfund Method
Draft Modified Elutriator Method for the Determination of Asbestos in Soils
and Bulk Material Method (Revision 1)
Structure Sketch Sheet for Direct Data Entry

EMSL Order ID: 041927219-0003
Client Sample: RISB-EJ-04-1.0-20190911

Client: Ramboll Environ US Corporation
Page 1 of 1

Primary Structure # 	Primary Structure # 	Primary Structure # 	Primary Structure # 
Primary Structure # 	Primary Structure # 	Primary Structure # 	Primary Structure # 
Primary Structure # 	Primary Structure # 	Primary Structure # 	Primary Structure # 
Primary Structure # 	Primary Structure # 	Primary Structure # 	Primary Structure # 
Structure # 	Structure # 	Structure # 	Structure # 

Analyst: [Signature]

Date: 9/24/09

Scope: 0409

EMSL Analytical, Inc
Elutriator Prep Worksheet



EMSL Ord./sample: 041927219 -0004
Client Sample ID: RISB-EJ-03-1.0-20190911

Date: 9/19/2019
System: 2
Operator: MS

Sample Drying:
Temperature (C): 97.1
Start Date: 9/18/2019
End Date: 9/18/2019

Sample Weight (g)		Total Dried Sample Weight (g)	
Pre Drying	3372.78 g	>3/8"	126.1 g
Post Drying	3343.39 g	<3/8"	51.19 g (In Tumbler)
% moisture	0.9	<3/8"	3166 g (Not Used)

	Start Date	Start Time	Stop Date	Stop Time
Conditioning	18-Sep-19	16:00	19-Sep-19	10:12
Tumbling	19-Sep-19	10:12	19-Sep-19	15:12

Tumbling Speed RH: 60
30 rpm TEMP: 20.1C

% Moisture from surrogate sample

Pre Dry	g	% Moisture	Reviewed:	
Post Dry	g		Date:	

1413.7	90.5	mL/min
ME	IST	



Following results are needed for calculation of asbestos concentration in the total sample mass

Resp. Mass		mo (mg)=		60		Resp.%=		ME Filter Information			
Emission rate		k=		0.0030		0.11721					
Filter ID #	Filter ME	Preweight (mg)	Post-Weight (mg)	Col. Time (minutes)	mf (mg)	Total Time (min)	In(mo-mf)	t(min)	In(mo-mf)	In(mo)	
1	ME	27.483	28.793	20	1.310	20	4.072	20	4.0723	4.0943	
2	ME	24.853	32.775	30	9.232	50	3.927	50	3.9273	4.0943	
3	ME	24.474	28.369	20	13.127	70	3.847	70	3.8474	4.0943	
4	ME	24.890	26.272	25	14.509	95	3.818	95	3.8175	4.0943	
5	ME	24.711	28.670	30	18.468	125	3.726	125	3.7265	4.0943	
6	ME	24.794	29.170	40	22.844	165	3.615	165	3.6151	4.0943	
7	ME	24.843	28.735	40	26.736	205	3.504	205	3.5045	4.0943	
8	ME	24.194	27.810	40	30.352	245	3.389	245	3.3894	4.0943	
9	ME	24.428	28.383	40	34.307	285	3.246	285	3.2462	4.0943	
10	ME	24.736	26.373	20	35.944	305	3.180	305	3.1804	4.0943	
	ME										
	ME										
	ME										
	ME										
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	ME										
	ME										
	ME										
	ME										

Remove Contents of cells that have no data

EMSL Analytical, Inc
Elutriator Prep Worksheet

EMSL Ord./sample:	041927219-0004
Client Sample ID:	RISB-EJ-03-1.0-20190911

IST Filter Information

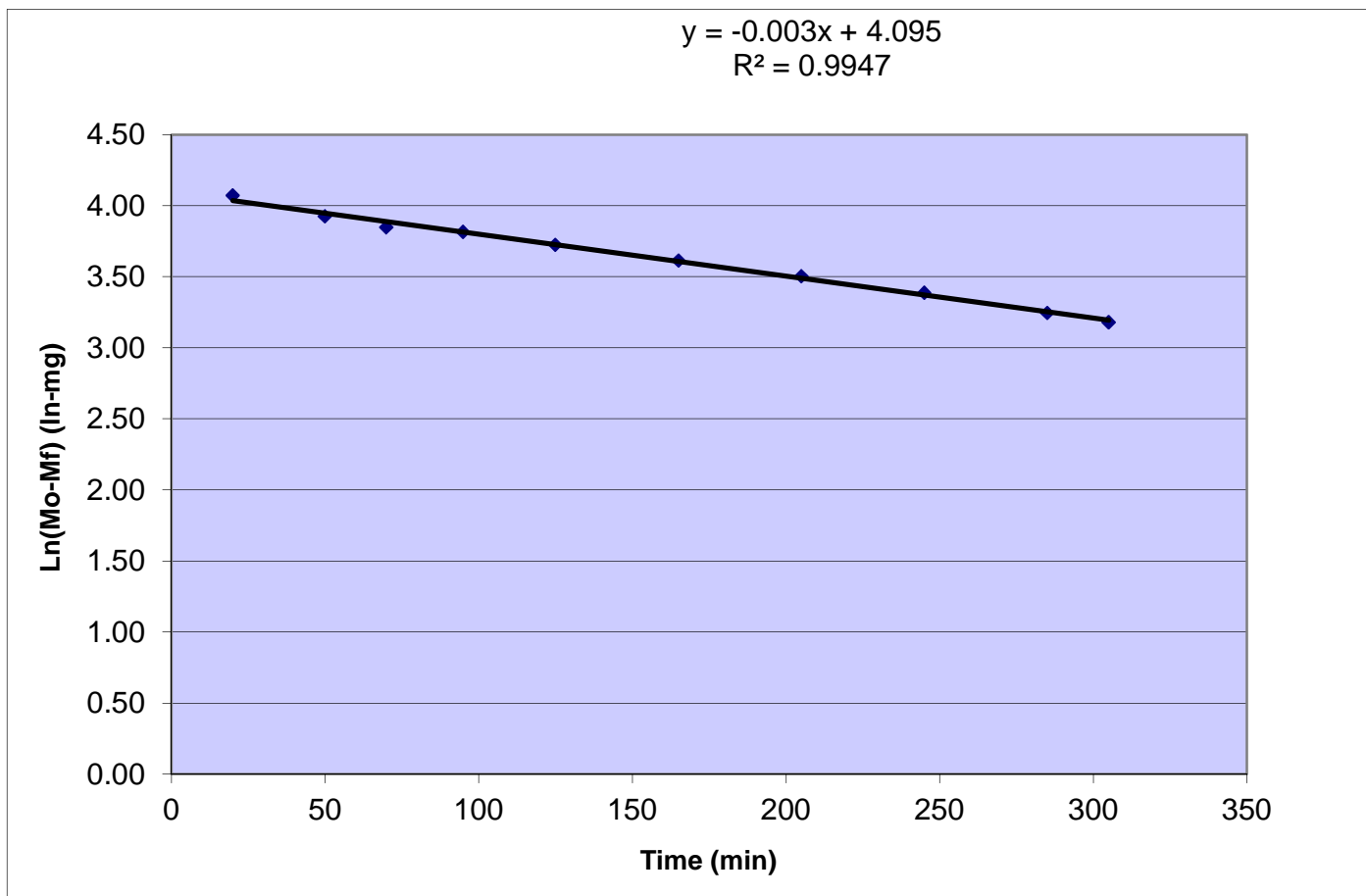
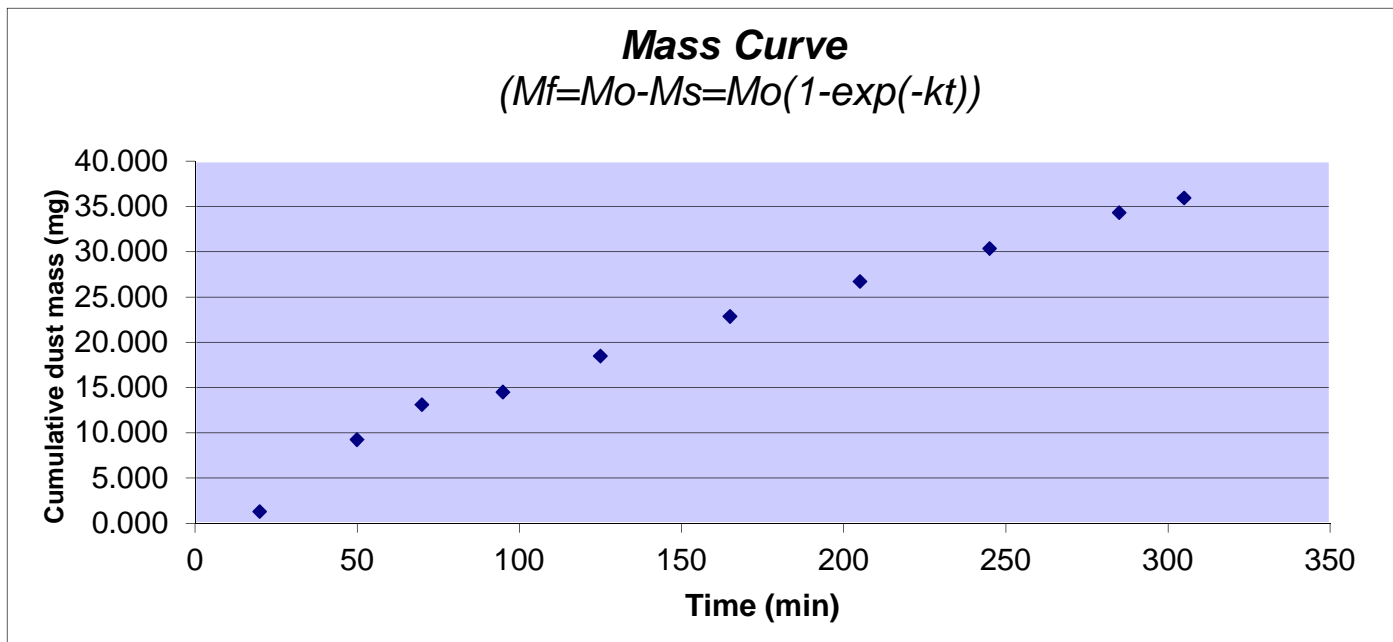
Filter ID #	Filter IST	Preweight (mg)	Post-Weight (mg)	Δ MF (mg)
1	IST	27.292	27.434	0.142
2	IST	27.338	27.454	0.116
3	IST	27.384	27.486	0.102
4	IST	27.426	27.56	0.134
5	IST	27.271	27.474	0.203
6	IST	27.183	27.297	0.114
7	IST			0.000
8	IST			0.000
	IST			0.000
	IST			0.000

Enter Filter numbers
that are to be sent.

Filters sent to another lab for analysis
1
4

Filter Lot Used	Filter Type: Pore Size	
60610200	MCE	0.2
microns		

EMSL Ord./sample:	041927219-0004
Client Sample ID:	RISB-EJ-03-1.0-20190911





EPA 540-R-97-028 -Superfund Method

Draft Modified Elutriator Method for the Determination of Asbestos in Soils and Bulk Material Method
(Revision 1)

Bench Sheet Data

Client: Craig Knox, Ramboll Environ US Corporation					
EMSL Sample ID:	041927219-0004	GO area (mm ²):	0.013	Scope:	JEOL 100CX II (04-01)
Customer Sample:	RISB-EJ-03-1.0-20190911	Grid Box :	0419-SpecProj-110: J	Mag:	10,000
		Pore Size (micron):	0.2	Analyst(s):	F. Craig
Project ID:	1690011200-028 / NERT Phase 2 Mod. 12			Analysis Date:	10/02/2019

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Image Number	Structure Comments
			Primary	Total	Length	Width				
J1	A9	None Detected								
J1	A7	None Detected								
J1	A5	None Detected								
J1	A3	None Detected								
J1	A1	None Detected								
J1	B2	None Detected								
J1	B4	None Detected								
J1	B6	None Detected								
J1	B8	None Detected								
J1	B10	None Detected								
J1	C9	None Detected								
J1	C7	None Detected								
J1	C5	None Detected								
J1	C3	None Detected								
J1	C1	None Detected								
J1	D2	None Detected								
J1	D4	None Detected								
J1	D6	None Detected								
J1	D8	None Detected								
J1	D10	None Detected								
J1	E9	None Detected								
J1	E7	None Detected								
J1	E5	None Detected								
J1	E3	None Detected								
J1	E1	None Detected								
J1	F2	None Detected								
J1	F4	None Detected								
J1	F6	None Detected								
J1	F8	None Detected								
J1	F10	None Detected								
J1	G9	None Detected								
J1	G7	None Detected								
J1	G5	None Detected								
J1	G3	None Detected								
J1	G1	None Detected								
J1	H2	None Detected								
J1	H4	None Detected								
J1	H6	None Detected								
J1	H8	None Detected								
J1	H10	None Detected								



EPA 540-R-97-028 -Superfund Method

Draft Modified Elutriator Method for the Determination of Asbestos in Soils and Bulk Material Method
(Revision 1)

Bench Sheet Data

Client: Craig Knox, Ramboll Environ US Corporation					
EMSL Sample ID:	041927219-0004	GO area (mm ²):	0.013	Scope:	JEOL 100CX II (04-01)
Customer Sample:	RISB-EJ-03-1.0-20190911	Grid Box :	0419-SpecProj-110: J	Mag:	10,000
		Pore Size (micron):	0.2	Analyst(s):	F. Craig
Project ID:	1690011200-028 / NERT Phase 2 Mod. 12			Analysis Date:	10/02/2019

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Image Number	Structure Comments
			Primary	Total	Length	Width				
J1	I9	None Detected								
J1	I7	None Detected								
J1	I5	None Detected								
J1	I3	None Detected								
J1	I1	None Detected								
J1	J2	None Detected								
J1	J4	None Detected								
J1	J6	None Detected								
J1	J8	None Detected								
J1	J10	None Detected								
J2	A1	None Detected								
J2	A3	None Detected								
J2	A5	None Detected								
J2	A7	None Detected								
J2	A9	None Detected								
J2	B10	None Detected								
J2	B8	None Detected								
J2	B6	None Detected								
J2	B4	None Detected								
J2	B2	None Detected								
J2	C1	None Detected								
J2	C3	None Detected								
J2	C5	None Detected								
J2	C7	None Detected								
J2	C9	None Detected								
J2	D10	None Detected								
J2	D8	None Detected								
J2	D6	None Detected								
J2	D4	None Detected								
J2	D2	None Detected								
J2	E1	None Detected								
J2	E3	None Detected								
J2	E5	None Detected								
J2	E7	None Detected								
J2	E9	None Detected								
J2	F10	None Detected								
J2	F8	None Detected								
J2	F6	None Detected								
J2	F4	None Detected								
J2	F2	None Detected								



EPA 540-R-97-028 -Superfund Method

Draft Modified Elutriator Method for the Determination of Asbestos in Soils and Bulk Material Method
(Revision 1)

Bench Sheet Data

Client:		Craig Knox, Ramboll Environ US Corporation			
EMSL Sample ID:	041927219-0004	GO area (mm ²):	0.013	Scope:	JEOL 100CX II (04-01)
Customer Sample:	RISB-EJ-03-1.0-20190911	Grid Box :	0419-SpecProj-110: J	Mag:	10,000
		Pore Size (micron):	0.2	Analyst(s):	F. Craig
Project ID:	1690011200-028 / NERT Phase 2 Mod. 12			Analysis Date:	10/02/2019

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Image Number	Structure Comments
			Primary	Total	Length	Width				
J2	G1	None Detected								
J2	G3	None Detected								
J2	G5	None Detected								
J2	G7	None Detected								
J2	G9	None Detected								
J2	H10	None Detected								
J2	H8	None Detected								
J2	H6	None Detected								
J2	H4	None Detected								
J2	H2	None Detected								
J2	I1	None Detected								
J2	I3	None Detected								
J2	I5	None Detected								
J2	I7	None Detected								
J2	I9	None Detected								
J2	J10	None Detected								
J2	J8	None Detected								
J2	J6	None Detected								
J2	J4	None Detected								
J2	J2	None Detected								



EPA 540-R-97-028 -Superfund Method
Draft Modified Elutriator Method for the Determination of Asbestos in Soils
and Bulk Material Method (Revision 1)
Structure Sketch Sheet for Direct Data Entry

EMSL Order ID: 041927219-0004

Client: Ramboll Environ US Corporation

Client Sample: RISB-EJ-03-1.0-20190911

Page 1 of 1

Primary Structure #

ND

Primary Structure #

Primary Structure #

Primary Structure #

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Primary Structure #

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Structure #

Structure #

Structure #

Structure #

Analyst: FC

Date: 10/2/19

Scope: 04-01

EMSL Analytical, Inc
Elutriator Prep Worksheet



EMSL Ord./sample:	041927219 -0005
Client Sample ID:	RISB-EJ-03-1.0-20190911-FD

Date:	9/20/2019
System:	3
Operator:	CB

Sample Drying:	
Temperature (C):	99
Start Date:	9/19/2019
End Date:	9/19/2019

Sample Weight (g)		Total Dried Sample Weight (g)	
Pre Drying	3565.08 g	>3/8"	195.6 g
Post Drying	3524.01 g	<3/8"	52.54 g (In Tumbler)
% moisture	1.2	<3/8"	3276 g (Not Used)

	Start Date	Start Time	Stop Date	Stop Time
Conditioning	19-Sep-19	16:30	20-Sep-19	9:14
Tumbling	20-Sep-19	9:14	20-Sep-19	14:14

Tumbling Speed RH: 53
 30 rpm TEMP: 20.9

% Moisture from surrogate sample		Reviewed:	
Pre Dry	g	% Moisture	
Post Dry	g	Date:	

1454.4	87.09	mL/min
ME	IST	



Following results are needed for calculation of asbestos concentration in the total sample mass

Resp. Mass	mo (mg)=					Resp.%=	ME Filter Information				
Emission rate	k=	0.0032				0.09326					
Filter ID #	Filter ME	Prewrite (mg)	Post-Weight (mg)	Col. Time (minutes)	mf (mg)	Total Time (min)	In(mo-mf)	t(min)	In(mo-mf)	In(mo)	
1	ME	24.624	27.485	20	2.861	20	3.832	20	3.8317	3.8918	
2	ME	24.613	31.576	30	9.824	50	3.668	50	3.6681	3.8918	
3	ME	24.302	27.709	25	13.231	75	3.577	75	3.5771	3.8918	
4	ME	23.771	25.809	30	15.269	105	3.518	105	3.5184	3.8918	
5	ME	24.108	27.112	40	18.273	145	3.425	145	3.4251	3.8918	
6	ME	24.370	28.424	40	22.327	185	3.284	185	3.2837	3.8918	
7	ME	24.331	27.413	40	25.409	225	3.161	225	3.1609	3.8918	
8	ME	24.269	27.546	40	28.686	265	3.011	265	3.0113	3.8918	
9	ME	24.406	26.302	30	30.582	295	2.913	295	2.9133	3.8918	
	ME										
	ME										
	ME										
	ME										
	ME										
	ME										
	ME										
	ME										
	ME										
	ME										
	ME										
	ME										
	ME										
	ME										
	ME										
	ME										
	ME										
	ME										

Remove Contents of cells that have no data

EMSL Analytical, Inc
Elutriator Prep Worksheet

EMSL Ord./sample:	041927219-0005
Client Sample ID:	RISB-EJ-03-1.0-20190911-FD

IST Filter Information

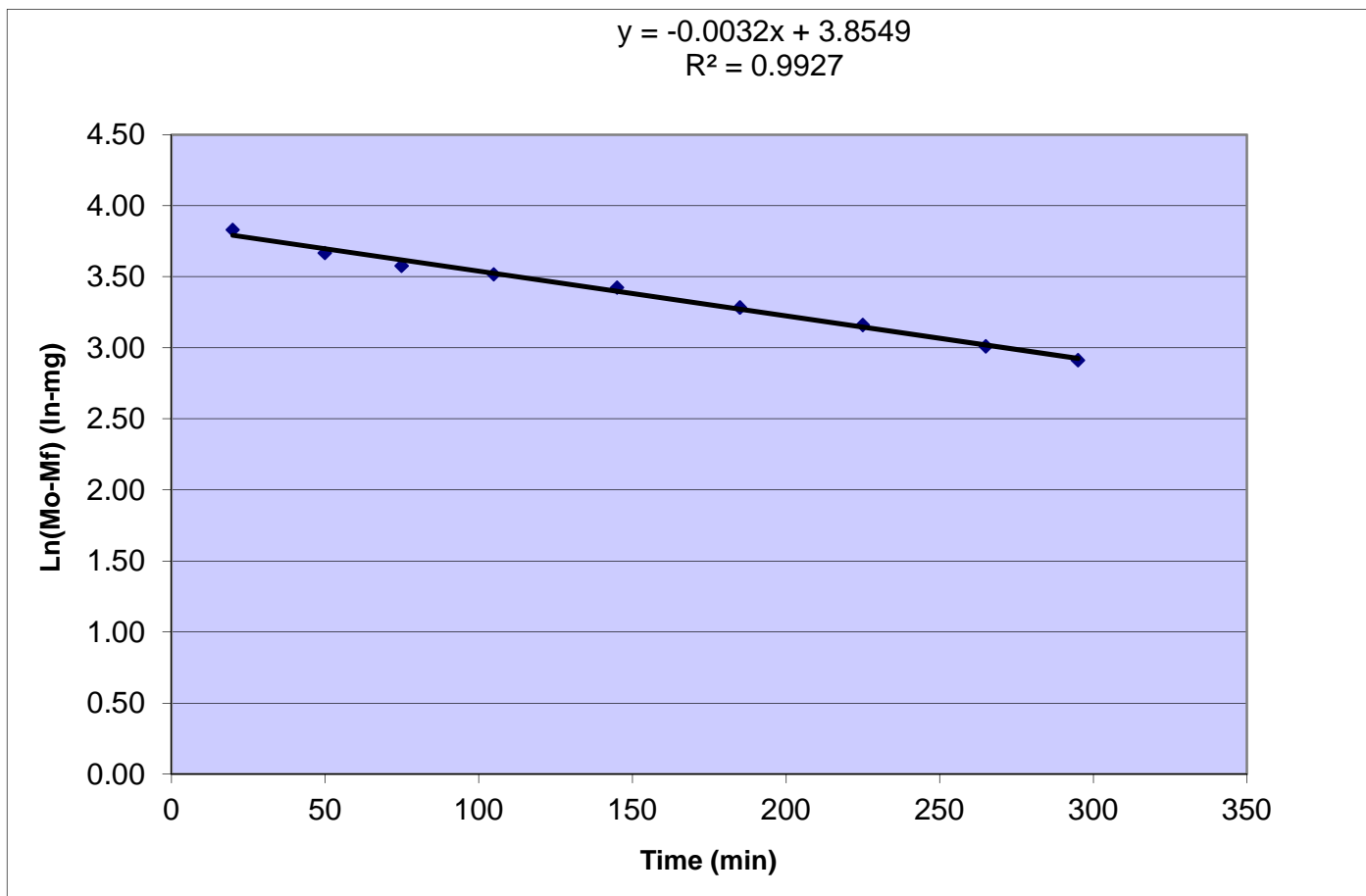
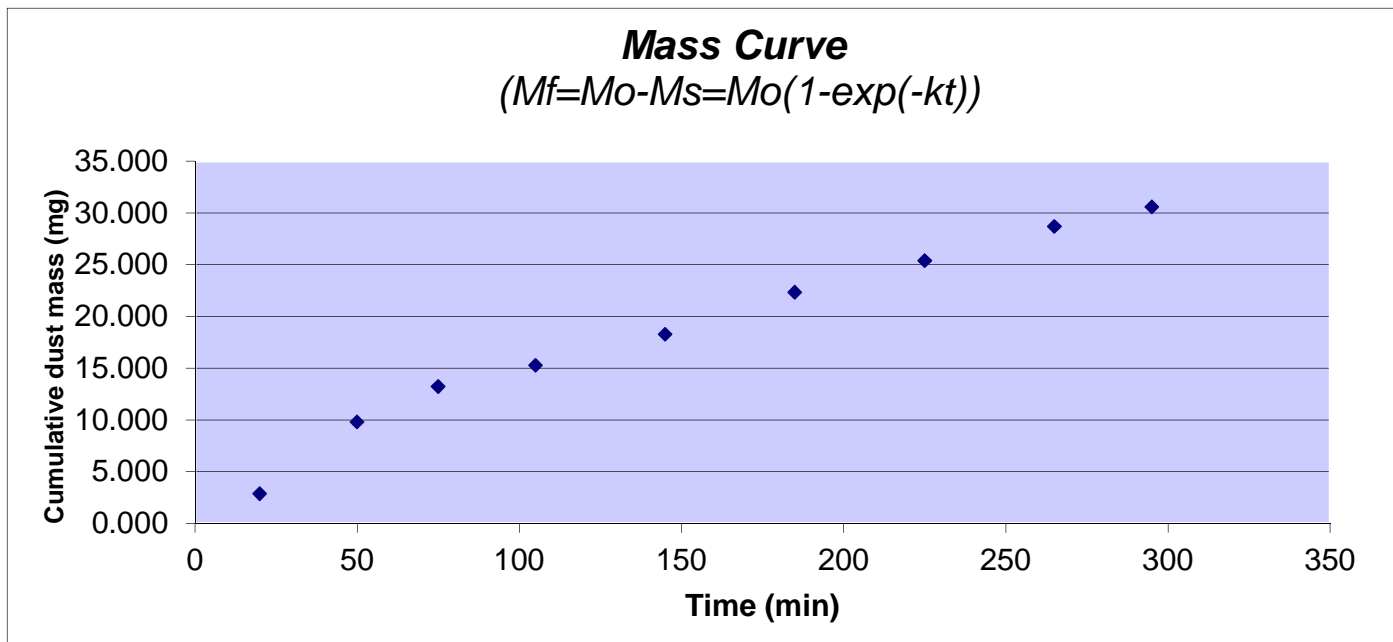
Filter ID #	Filter IST	Preweight (mg)	Post-Weight (mg)	ΔMF (mg)
1	IST	27.609	27.732	0.123
2	IST	27.74	27.851	0.111
3	IST	27.61	27.718	0.108
4	IST	27.502	27.62	0.118
5	IST	27.776	27.897	0.121
	IST			0.000
	IST			0.000
	IST			0.000
	IST			0.000
	IST			0.000

Enter Filter numbers
that are to be sent.

Filters sent to another lab for analysis
1
5

Filter Lot Used	Filter Type: Pore Size	
60610200	MCE	0.2
microns		

EMSL Ord./sample:	041927219-0005
Client Sample ID:	RISB-EJ-03-1.0-20190911-FD





EPA 540-R-97-028 -Superfund Method

Draft Modified Elutriator Method for the Determination of Asbestos in Soils and Bulk Material Method
(Revision 1)

Bench Sheet Data

Client: Craig Knox, Ramboll Environ US Corporation					
EMSL Sample ID:	041927219-0005	GO area (mm ²):	0.0128	Scope:	JEOL 100CX II (04-01)
Customer Sample:	RISB-EJ-03-1.0-20190911-FD	Grid Box :	0419-SpecProj-106: H	Mag:	10,000
		Pore Size (micron):	0.2	Analyst(s):	F. Craig
Project ID:	1690011200-028 / NERT Phase 2 Mod. 12			Analysis Date:	09/30/2019

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Image Number	Structure Comments
			Primary	Total	Length	Width				
H6	A9	None Detected								
H6	A7	None Detected								
H6	A5	None Detected								
H6	A3	None Detected								
H6	A1	None Detected								
H6	B2	None Detected								
H6	B4	None Detected								
H6	B6	None Detected								
H6	B8	None Detected								
H6	B10	None Detected								
H6	C9	None Detected								
H6	C7	None Detected								
H6	C5	None Detected								
H6	C3	None Detected								
H6	C1	None Detected								
H6	S2	None Detected								
H6	D4	None Detected								
H6	D6	None Detected								
H6	D8	None Detected								
H6	D10	None Detected								
H6	E9	None Detected								
H6	E7	None Detected								
H6	E5	None Detected								
H6	E3	None Detected								
H6	E1	None Detected								
H6	F2	None Detected								
H6	F4	None Detected								
H6	F6	None Detected								
H6	F8	None Detected								
H6	G9	None Detected								
H6	G7	None Detected								
H6	G5	None Detected								
H6	G3	None Detected								
H6	G1	None Detected								
H6	H2	None Detected								
H6	H4	None Detected								
H6	H6	None Detected								
H6	H8	None Detected								
H6	I9	None Detected								
H6	I7	None Detected								



EPA 540-R-97-028 -Superfund Method

Draft Modified Elutriator Method for the Determination of Asbestos in Soils and Bulk Material Method
(Revision 1)

Bench Sheet Data

Client: Craig Knox, Ramboll Environ US Corporation					
EMSL Sample ID:	041927219-0005	GO area (mm ²):	0.0128	Scope:	JEOL 100CX II (04-01)
Customer Sample:	RISB-EJ-03-1.0-20190911-FD	Grid Box :	0419-SpecProj-106: H	Mag:	10,000
		Pore Size (micron):	0.2	Analyst(s):	F. Craig
Project ID:	1690011200-028 / NERT Phase 2 Mod. 12			Analysis Date:	09/30/2019

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Image Number	Structure Comments
			Primary	Total	Length	Width				
H6	I5	None Detected								
H6	I3	None Detected								
H6	I1	None Detected								
H6	J2	None Detected								
H6	J4	None Detected								
H6	J6	None Detected								
H6	J8	None Detected								
H7	J10	None Detected								
H7	J8	None Detected								
H7	J6	None Detected								
H7	J4	None Detected								
H7	J2	None Detected								
H7	I1	None Detected								
H7	I3	None Detected								
H7	I5	None Detected								
H7	I7	None Detected								
H7	I9	None Detected								
H7	H10	None Detected								
H7	H8	None Detected								
H7	H6	None Detected								
H7	H4	None Detected								
H7	H3	None Detected								
H7	G1	None Detected								
H7	G3	None Detected								
H7	G5	None Detected								
H7	G7	None Detected								
H7	G9	None Detected								
H7	F10	None Detected								
H7	F8	None Detected								
H7	F6	None Detected								
H7	F4	None Detected								
H7	F3	None Detected								
H7	E1	None Detected								
H7	E3	None Detected								
H7	E5	None Detected								
H7	E7	None Detected								
H7	E9	None Detected								
H7	D10	None Detected								
H7	D8	None Detected								
H7	D6	None Detected								



EPA 540-R-97-028 -Superfund Method

Draft Modified Elutriator Method for the Determination of Asbestos in Soils and Bulk Material Method
(Revision 1)

Bench Sheet Data

Client:		Craig Knox, Ramboll Environ US Corporation			
EMSL Sample ID:	041927219-0005	GO area (mm ²):	0.0128	Scope:	JEOL 100CX II (04-01)
Customer Sample:	RISB-EJ-03-1.0-20190911-FD	Grid Box :	0419-SpecProj-106: H	Mag:	10,000
		Pore Size (micron):	0.2	Analyst(s):	F. Craig
Project ID:	1690011200-028 / NERT Phase 2 Mod. 12			Analysis Date:	09/30/2019

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Image Number	Structure Comments
			Primary	Total	Length	Width				
H7	D4	None Detected								
H7	D2	None Detected								
H7	C1	None Detected								
H7	C3	None Detected								
H7	C5	None Detected								
H7	C7	MD11	1		9.5	7.97	AX	Non Reg.Amph.		
H7	C7	MF		1	7.5	0.72	AX	Non Reg.Amph.		Anthophyllite or cummingtonite
H7	C9	None Detected								
H7	B10	None Detected								
H7	B8	None Detected								
H7	B6	None Detected								
H7	B4	None Detected								
H7	B2	None Detected								
H7	A1	None Detected								
H7	A3	None Detected								
H7	A5	None Detected								
H7	A7	None Detected								
H7	A9	None Detected								
H5	E7	None Detected								
H5	R5	None Detected								
H5	E3	None Detected								



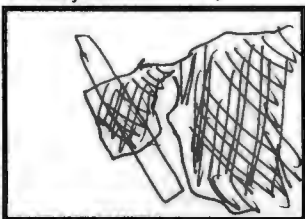
EPA 540-R-97-028 -Superfund Method
 Draft Modified Elutriator Method for the Determination of Asbestos in Soils
 and Bulk Material Method (Revision 1)
 Structure Sketch Sheet for Direct Data Entry

EMSL Order ID: 041927219-0005

Client: Ramboll Environ US Corporation

Client Sample: RISB-EJ-03-1.0-20190911

Page 1 of 1

Primary Structure # <u>1</u> 	Primary Structure #	Primary Structure #	Primary Structure #
Primary Structure #	Primary Structure #	Primary Structure #	Primary Structure #
Primary Structure #	Primary Structure #	Primary Structure #	Primary Structure #
Primary Structure #	Primary Structure #	Primary Structure #	Primary Structure #
Structure #	Structure #	Structure #	Structure #

Analyst: FC

Date: 9/30/19

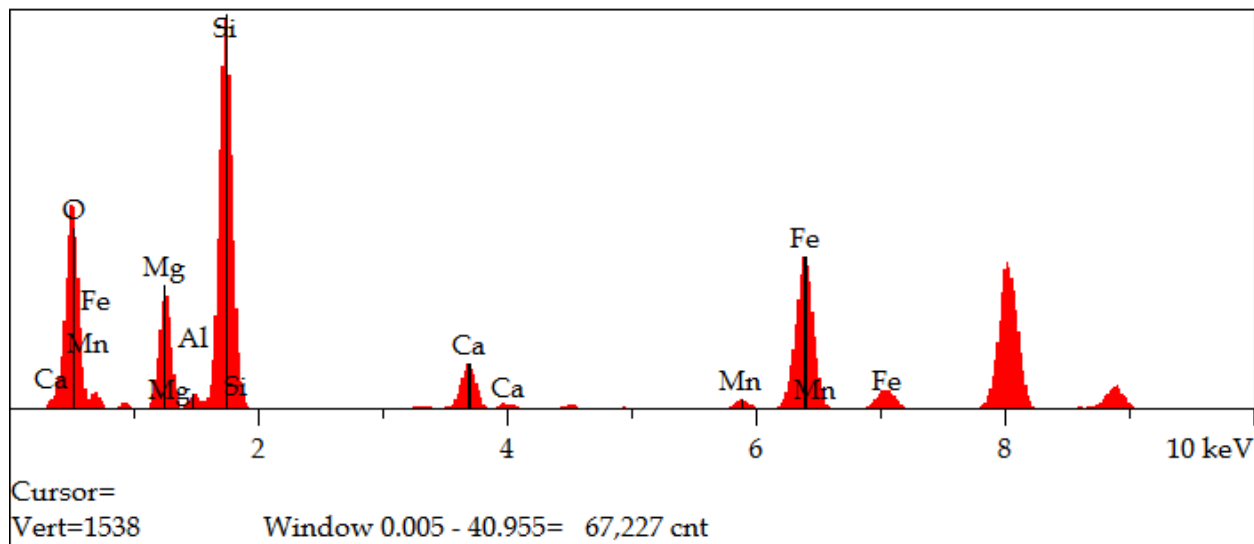
Scope: 04-01



Energy Dispersive X-Ray Analysis via Transmission Electron Microscopy

EMSL ANALYTICAL, INC.

Analysis Report: 2019_04-01_041927219-0005_STR_1__NRA



Spectrum 1

Component	Type	Mole Conc.	Conc.	Units		APFU
FeO	Calc	18.638	22.952	wt.%		2.78
MnO	Calc	1.308	1.590	wt.%		0.20
CaO	Calc	5.496	5.282	wt.%		0.82
SiO2	Calc	51.885	53.433	wt.%		7.75
Al2O3	Calc	1.023	1.786	wt.%		0.31
MgO	Calc	21.650	14.957	wt.%		3.24
		100.000	100.000	Wt.%	Total	O=23.0

Table 1

Elt.	Line	Intensity (c/s)	Quant	Conc.	Units	Calib File	Bkg Int (c/s)	
O	Ka	106.59	Foil	42.212	wt.%	@IXRF-Cal-2019-3.FOIL	6.07	
Mg	Ka	68.39	Foil	9.020	wt.%	@IXRF-Cal-2019-3.FOIL	8.36	
Al	Ka	8.46	Foil	0.945	wt.%	@IXRF-Cal-2019-3.FOIL	8.56	
Si	Ka	240.69	Foil	24.976	wt.%	@IXRF-Cal-2019-3.FOIL	7.00	
Ca	Ka	33.17	Foil	3.775	wt.%	@IXRF-Cal-2019-3.FOIL	3.68	
Mn	Ka	6.46	Foil	1.231	wt.%	@IXRF-Cal-2019-3.FOIL	3.25	
Fe	Ka	126.93	Foil	17.841	wt.%	@IXRF-Cal-2019-3.FOIL	2.97	
				100.000	Wt.%			Total

Table 2

EMSL Analytical, Inc
Elutriator Prep Worksheet

EMSL Ord./sample:	041927219 -0006
Client Sample ID:	RISB-ER-03-1.0-20190911

Date:	9/20/2019
System:	2
Operator:	MS



Sample Drying:	
Temperature (C):	99
Start Date:	9/19/2019
End Date:	9/19/2019

Sample Weight (g)		Total Dried Sample Weight (g)	
Pre Drying	3662.42 g	>3/8"	307.9 g
Post Drying	3622.98 g	<3/8"	53.68 g (In Tumbler)
% moisture	1.1	<3/8"	3261 g (Not Used)

	Start Date	Start Time	Stop Date	Stop Time
Conditioning	19-Sep-19	16:30	20-Sep-19	9:43
Tumbling	20-Sep-19	9:43	20-Sep-19	14:43

Tumbling Speed	RH: 60
30 rpm	TEMP: 20.1

<i>% Moisture from surrogate sample</i>		Reviewed:	
Pre Dry	g	% Moisture	
Post Dry	g	Date:	

1470.3	91.88	mL/min
ME	IST	



Following results are needed for calculation of asbestos concentration in the total sample mass

Resp. Mass	mo (mg)=	26			Resp.%=					
Emission rate	k=	0.0034			0.04844	ME Filter Information				
Filter ID #	Filter ME	Prewrite (mg)	Post-Weight (mg)	Col. Time (minutes)	mf (mg)	Total Time (min)	In(mo-mf)	t(min)	In(mo-mf)	In(mo)
1	ME	24.246	24.882	20	0.636	20	3.233	20	3.2333	3.2581
2	ME	24.208	25.937	30	2.365	50	3.163	50	3.1627	3.2581
3	ME	24.269	28.176	40	6.272	90	2.982	90	2.9820	3.2581
4	ME	24.132	26.566	40	8.706	130	2.850	130	2.8504	3.2581
5	ME	24.396	26.040	40	10.350	170	2.750	170	2.7505	3.2581
6	ME	24.616	26.579	40	12.313	210	2.616	210	2.6164	3.2581
7	ME	24.199	26.215	40	14.329	250	2.457	250	2.4571	3.2581
8	ME	23.888	25.354	40	15.795	290	2.323	290	2.3229	3.2581
	ME									
	ME									
	ME									
	ME									
	ME									
	ME									
	ME									
	ME									
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	ME									
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	ME									
	ME									
	ME									
	ME									

Remove Contents of cells that have no data

EMSL Analytical, Inc
Elutriator Prep Worksheet

EMSL Ord./sample:	041927219-0006
Client Sample ID:	RISB-ER-03-1.0-20190911

IST Filter Information

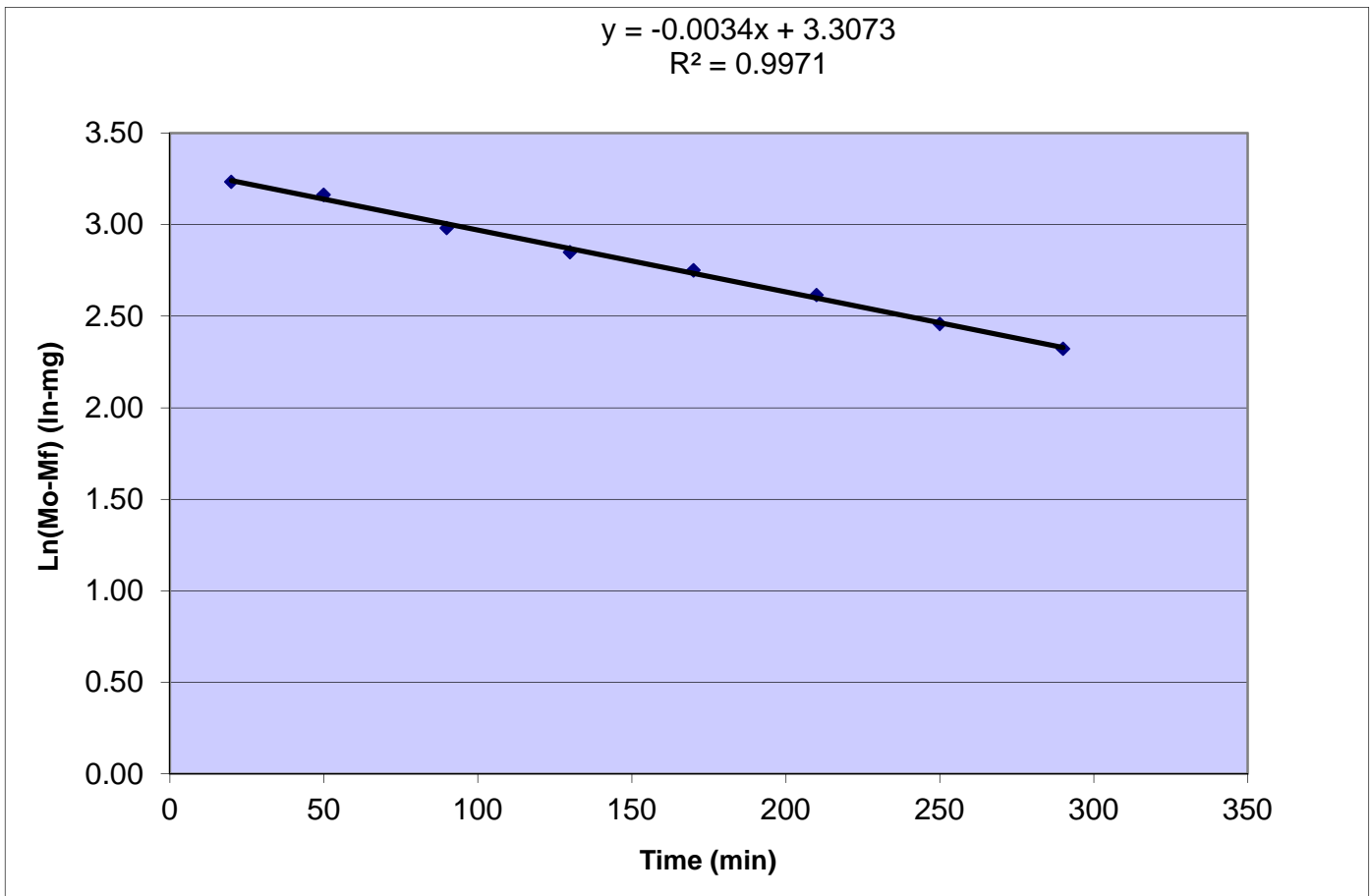
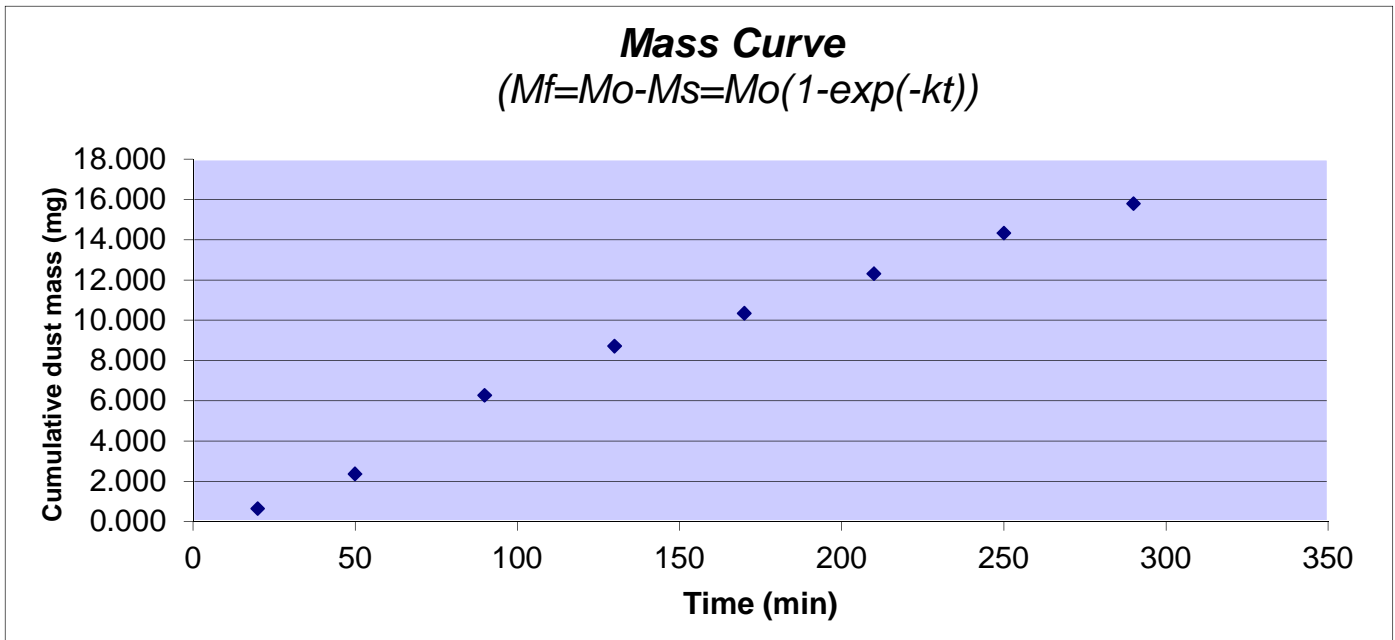
Filter ID #	Filter	Preweight (mg)	Post-Weight (mg)	ΔMF (mg)
1	IST	27.399	27.509	0.110
2	IST	27.556	27.703	0.147
3	IST	27.345	27.525	0.180
4	IST	27.332	27.633	0.301
5	IST	27.186	27.379	0.193
6	IST	27.155	27.286	0.131
7	IST	27.428	27.54	0.112
8	IST	27.365	27.465	0.100
	IST			0.000
	IST			0.000

Enter Filter numbers
that are to be sent.

Filters sent to another lab for analysis

Filter Lot Used	Filter Type: Pore Size	
60610200	MCE	0.2
	microns	

EMSL Ord./sample:	041927219-0006
Client Sample ID:	RISB-ER-03-1.0-20190911





EPA 540-R-97-028 -Superfund Method

Draft Modified Elutriator Method for the Determination of Asbestos in Soils and Bulk Material Method
(Revision 1)

Bench Sheet Data

Client: Craig Knox, Ramboll Environ US Corporation			
EMSL Sample ID:	041927219-0006	GO area (mm ²):	0.0128
Customer Sample:	RISB-ER-03-1.0-20190911	Grid Box :	0419-SpecProj-106: I
		Pore Size (micron):	0.2
Project ID:	1690011200-028 / NERT Phase 2 Mod. 12		Analysis Date: 10/01/2019
		Scope:	JEOL 100CX II (04-01)
		Mag:	10,000
		Analyst(s):	F. Craig

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Image Number	Structure Comments
			Primary	Total	Length	Width				
I1	A9	None Detected								
I1	A7	None Detected								
I1	A5	None Detected								
I1	A3	None Detected								
I1	A1	None Detected								
I1	B2	None Detected								
I1	B4	MD11	1		12.4	11.4	ADX	Non Reg.Amph.		
I1	B4	MF		1	7.8	1.44	ADX	Non Reg.Amph.	1333	
I1	B6	None Detected								
I1	B8	None Detected								
I1	B10	None Detected								
I1	C9	None Detected								
I1	C7	None Detected								
I1	C5	None Detected								
I1	C3	None Detected								
I1	C1	None Detected								
I1	D2	None Detected								
I1	D4	None Detected								
I1	D6	None Detected								
I1	D8	None Detected								
I1	D10	None Detected								
I1	E9	None Detected								
I1	E7	None Detected								
I1	E5	None Detected								
I1	E3	None Detected								
I1	E1	None Detected								
I1	F2	None Detected								
I1	F4	MD11	2		16.6	14.25	ADX	Non Reg.Amph.		
I1	F4	MF		2	5.4	0.72	ADX	Non Reg.Amph.		
I1	F6	None Detected								
I1	F8	None Detected								
I1	G9	None Detected								
I1	G7	None Detected								
I1	G5	None Detected								
I1	G3	None Detected								
I1	G1	None Detected								
I1	H2	MD11	3		6.9	1.2	NAM	Non Asb. Mineral		
I1	H2	MF		3	6.9	0.96	NAM	Non Asb. Mineral		Amorphous ??



EPA 540-R-97-028 -Superfund Method

Draft Modified Elutriator Method for the Determination of Asbestos in Soils and Bulk Material Method
(Revision 1)

Bench Sheet Data

Client: Craig Knox, Ramboll Environ US Corporation					
EMSL Sample ID:	041927219-0006	GO area (mm ²):	0.0128	Scope:	JEOL 100CX II (04-01)
Customer Sample:	RISB-ER-03-1.0-20190911	Grid Box :	0419-SpecProj-106: I	Mag:	10,000
		Pore Size (micron):	0.2	Analyst(s):	F. Craig
Project ID:	1690011200-028 / NERT Phase 2 Mod. 12			Analysis Date:	10/01/2019

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Image Number	Structure Comments
			Primary	Total	Length	Width				
I1	H4	None Detected								
I1	H6	None Detected								
I1	H8	None Detected								
I1	I9	None Detected								
I1	I7	None Detected								
I1	I5	None Detected								
I1	I3	None Detected								
I1	I1	None Detected								
I1	J2	None Detected								
I1	J4	None Detected								
I1	J6	None Detected								
I1	J8	None Detected								
I4	A1	None Detected								
I4	A3	MD11	4		14.3	11.88	NAM	Unknown		
I4	A3	MF		4	8.5	0.96	NAM	Unknown	1337	Pyroxene
I4	A5	None Detected								
I4	A7	None Detected								
I4	A9	None Detected								
I4	B10	MD11	5		8.3	2.62	NAM	Non Asb. Mineral		
I4	B10	MF		5	6.5	0.48	NAM	Non Asb. Mineral		
I4	B8	None Detected								
I4	B6	None Detected								
I4	B4	None Detected								
I4	B2	None Detected								
I4	C1	None Detected								
I4	C3	None Detected								
I4	C5	None Detected								
I4	C7	None Detected								
I4	C9	None Detected								
I4	D10	None Detected								
I4	D8	None Detected								
I4	D6	MD11	6		17.1	9.26	AX	Actinolite		
I4	D6	MF		6	7.5	1.2	AX	Actinolite		
I4	D4	None Detected								
I4	D2	None Detected								
I4	E1	None Detected								
I4	E3	None Detected								
I4	E5	None Detected								
I4	E7	None Detected								



EPA 540-R-97-028 -Superfund Method

Draft Modified Elutriator Method for the Determination of Asbestos in Soils and Bulk Material Method
(Revision 1)

Bench Sheet Data

Client: Craig Knox, Ramboll Environ US Corporation					
EMSL Sample ID:	041927219-0006	GO area (mm ²):	0.0128	Scope:	JEOL 100CX II (04-01)
Customer Sample:	RISB-ER-03-1.0-20190911	Grid Box :	0419-SpecProj-106: I	Mag:	10,000
		Pore Size (micron):	0.2	Analyst(s):	F. Craig
Project ID:	1690011200-028 / NERT Phase 2 Mod. 12			Analysis Date:	10/01/2019

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Image Number	Structure Comments
			Primary	Total	Length	Width				
I4	E9	MD11	7		16.6	9.5	AX	Actinolite		
I4	E9	MF		7	9.5	0.72	AX	Actinolite		
I4	F10	None Detected								
I4	F8	None Detected								
I4	F6	None Detected								
I4	F4	None Detected								
I4	F2	None Detected								
I4	G1	None Detected								
I4	G3	None Detected								
I4	G5	None Detected								
I4	G7	None Detected								
I4	G9	None Detected								
I4	H10	None Detected								
I4	H8	None Detected								
I4	H6	None Detected								
I4	H4	None Detected								
I4	H2	None Detected								
I4	I1	None Detected								
I4	I3	None Detected								
I4	I5	None Detected								
I4	I7	None Detected								
I4	I9	None Detected								
I4	J10	None Detected								
I4	J8	None Detected								
I4	J6	None Detected								
I4	J4	None Detected								
I4	J2	None Detected								
I3	B10	None Detected								
I3	B8	None Detected								
I3	B6	None Detected								



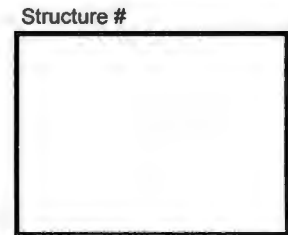
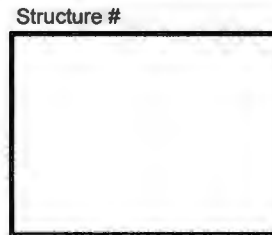
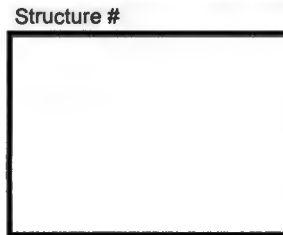
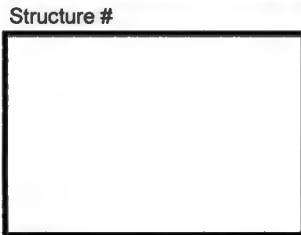
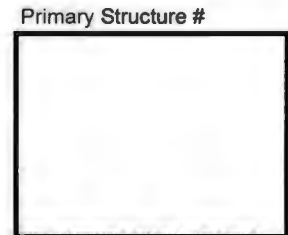
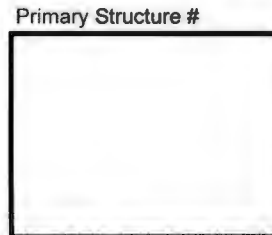
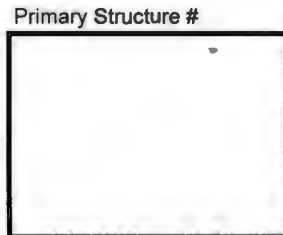
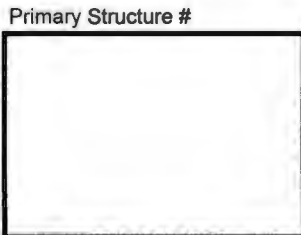
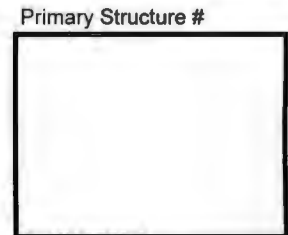
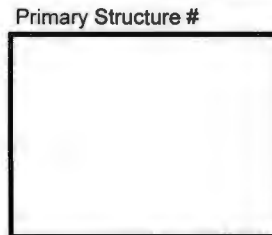
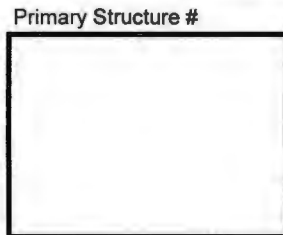
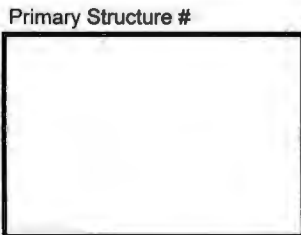
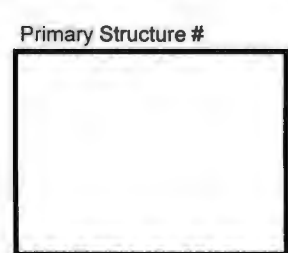
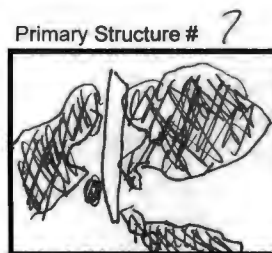
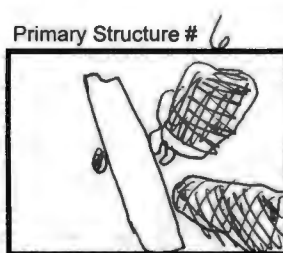
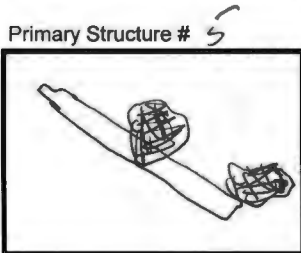
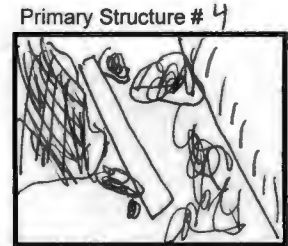
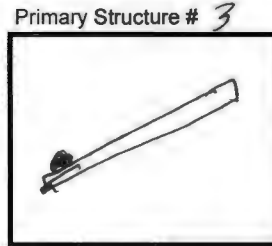
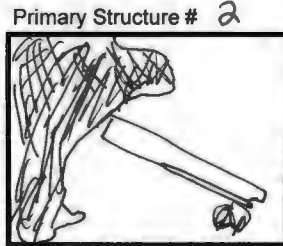
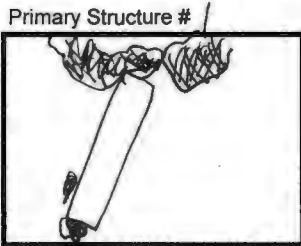
EPA 540-R-97-028 -Superfund Method
 Draft Modified Elutriator Method for the Determination of Asbestos in Soils
 and Bulk Material Method (Revision 1)
 Structure Sketch Sheet for Direct Data Entry

EMSL Order ID: 041927219-0006

Client: Ramboll Environ US Corporation

Client Sample: RISB-ER-03-1.0-20190911

Page 1 of 1



Analyst: FC

Date: 10/1/19

Scope: 04-21



AMPHIBOLE SAED INDEXING FORM

EMSL Order Number:	041927219	Date:	Oct 01, 2019
Indexing of Image Number:	1333	Scope #:	04 - 01
Reference / Sample No:	0006	By:	F Craig
Preliminary ID:	NRA		
Using Camera Constant of:	2.960e-003	1/A Pixels	
Determined from Reference:	AuCal-100119_1332		

	Calculated	Ref	-5%	+5%
Inter-row Spacing (Angstroms):	5.292	5.304	5.039	5.569
d2 or hk0 (Camera K/zero row dist.):	2.556	2.558	2.430	2.686
d1 or hk1 (Camera K/slant vector dist.):	4.897	4.899	4.654	5.144
Ratio of hk0/hk1:	0.522	0.522	0.496	0.548
Angle of Slant Vector (Measured):	68.4	68.290	64.876	71.705

From SAED Reference Book, "unknown" diffraction pattern was found to be that of:

Magnesio-Hornblende

By: **F Craig**

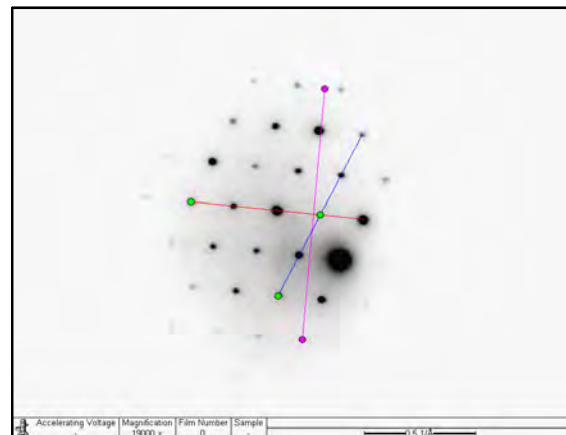
Miller Indice hk0: (**-2 6 0**)

Miller Indice hkl: (**-1 1 1**)

With a Zone Axis of: [**3 1 2**]

Preliminary Identification was: CORRECT

INCORRECT



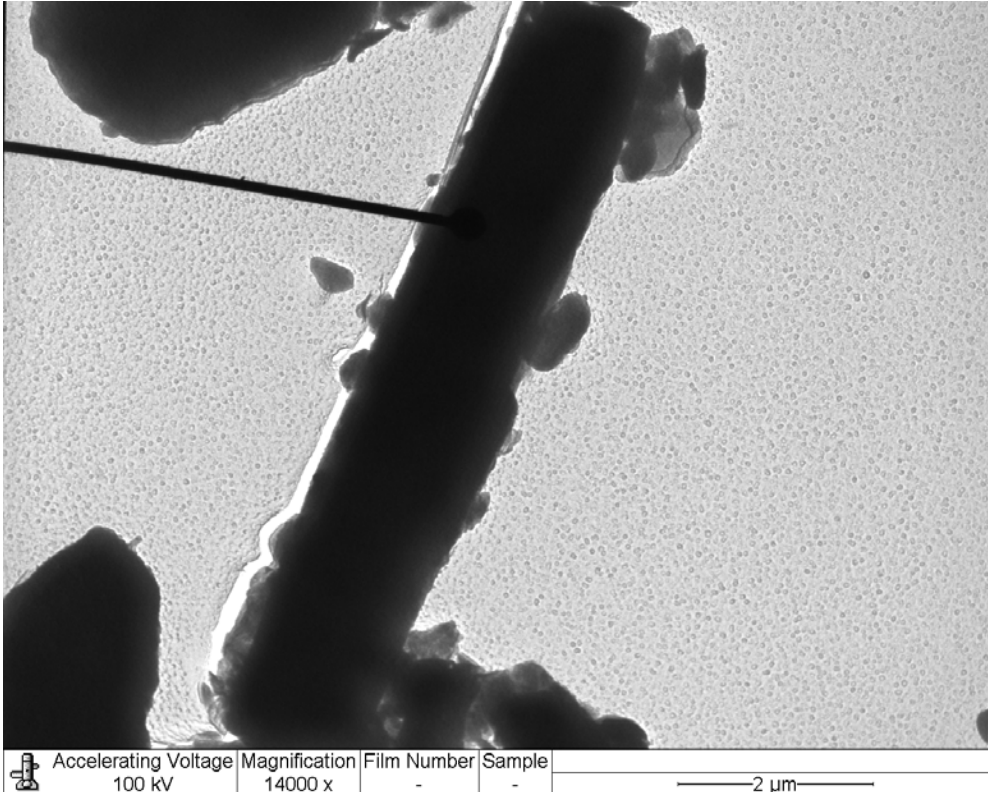
Percent accuracy to date: **100 %**




EMSL ANALYTICAL, INC.

EMSL Analytical, Inc.

Photomicrograph Report



	Accelerating Voltage 100 kV	Magnification 14000 x	Film Number -	Sample -	2 μ m
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Micrograph Information

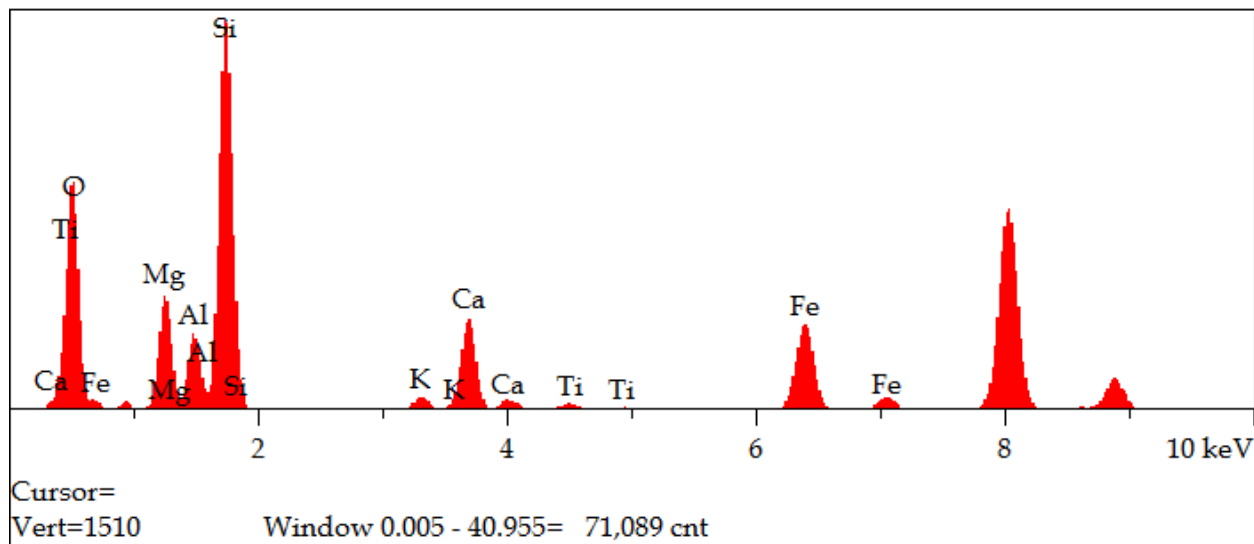
Sample ID:	0006
Order ID:	041927219
Image Number:	1334
Mineral Type:	NRA
Date:	10/1/2019
Magnification:	14000
Microscope:	1



Energy Dispersive X-Ray Analysis via Transmission Electron Microscopy

EMSL ANALYTICAL, INC.

Analysis Report: 2019_04-01_041927219-0006_STR_1__NRA



Spectrum 1

Component	Type	Mole Conc.	Conc.	Units	APFU
FeO	Calc	11.799	14.269	wt.%	1.70
TiO2	Calc	0.597	0.802	wt.%	0.09
CaO	Calc	11.346	10.710	wt.%	1.64
K2O	Calc	0.967	1.533	wt.%	0.28
SiO2	Calc	48.334	48.884	wt.%	6.97
Al2O3	Calc	5.312	9.117	wt.%	1.53
MgO	Calc	21.645	14.686	wt.%	3.12
		100.000	100.000	Wt.%	Total O=23.0

Table 1

Elt.	Line	Intensity (c/s)	Quant	Conc.	Units	Calib File	Bkg Int (c/s)
O	Ka	123.86	Foil	42.970	wt.%	@IXRF-Cal-2019-3.FOIL	11.02
Mg	Ka	109.77	Foil	8.856	wt.%	@IXRF-Cal-2019-3.FOIL	15.21
Al	Ka	74.14	Foil	4.825	wt.%	@IXRF-Cal-2019-3.FOIL	16.06
Si	Ka	399.25	Foil	22.850	wt.%	@IXRF-Cal-2019-3.FOIL	13.59
K	Ka	14.68	Foil	1.272	wt.%	@IXRF-Cal-2019-3.FOIL	8.74
Ca	Ka	103.99	Foil	7.654	wt.%	@IXRF-Cal-2019-3.FOIL	8.68
Ti	Ka	6.77	Foil	0.481	wt.%	@IXRF-Cal-2019-3.FOIL	5.66
Fe	Ka	119.10	Foil	11.091	wt.%	@IXRF-Cal-2019-3.FOIL	5.70
				100.000	Wt.%		Total

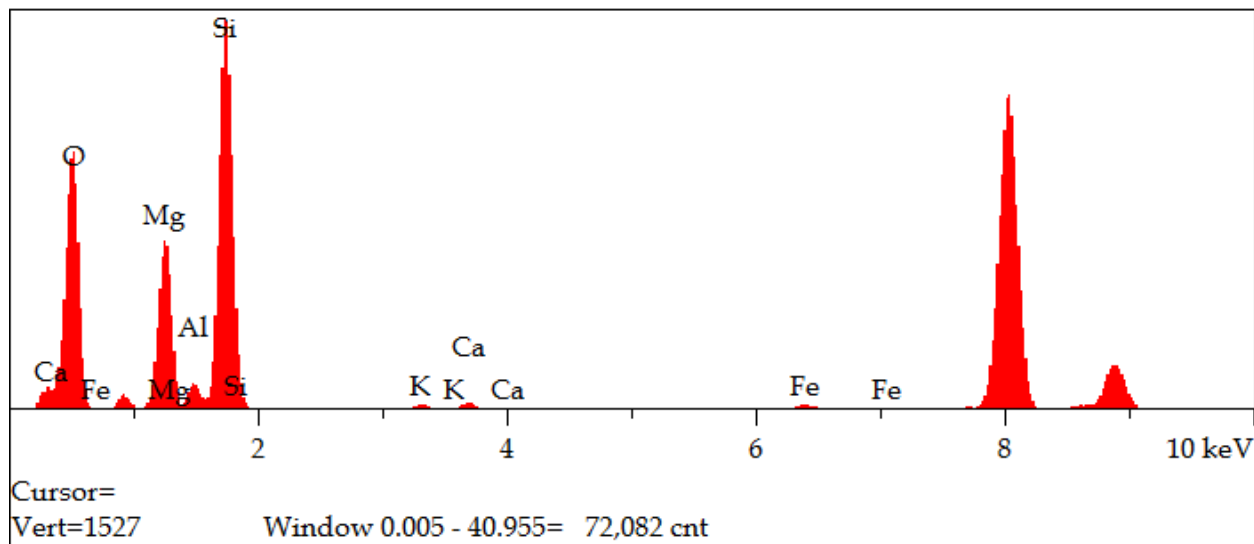
Table 2



Energy Dispersive X-Ray Analysis via Transmission Electron Microscopy

EMSL ANALYTICAL, INC.

Analysis Report: 2019_04-01_041927219-0006_STR_3__NAM



Spectrum 1

Component	Type	Mole Conc.	Conc.	Units	APFU
FeO	Calc	0.616	0.816	wt.%	0.09
CaO	Calc	0.708	0.732	wt.%	0.10
K ₂ O	Calc	0.324	0.564	wt.%	0.09
SiO ₂	Calc	60.986	67.628	wt.%	8.48
Al ₂ O ₃	Calc	2.166	4.074	wt.%	0.60
MgO	Calc	35.199	26.185	wt.%	4.90
		100.000	100.000	Wt.%	Total O=23.0

Table 1

Elt.	Line	Intensity (c/s)	Quant	Conc.	Units	Calib File	Bkg Int (c/s)
O	Ka	84.83	Foil	48.815	wt.%	@IXRF-Cal-2019-3.FOIL	3.75
Mg	Ka	62.47	Foil	15.791	wt.%	@IXRF-Cal-2019-3.FOIL	4.65
Al	Ka	9.80	Foil	2.156	wt.%	@IXRF-Cal-2019-3.FOIL	4.59
Si	Ka	150.66	Foil	31.612	wt.%	@IXRF-Cal-2019-3.FOIL	3.65
K	Ka	2.02	Foil	0.468	wt.%	@IXRF-Cal-2019-3.FOIL	1.84
Ca	Ka	2.48	Foil	0.523	wt.%	@IXRF-Cal-2019-3.FOIL	1.80
Fe	Ka	2.47	Foil	0.635	wt.%	@IXRF-Cal-2019-3.FOIL	1.76
				100.000	Wt.%		Total

Table 2



AMPHIBOLE SAED INDEXING FORM

EMSL Order Number:	041927219	Date:	Oct 01, 2019
Indexing of Image Number:	1337	Scope #:	04 - 01
Reference / Sample No:	0006	By:	F Craig
Preliminary ID:	Pyroxene		
Using Camera Constant of:	2.960e-003	1/A Pixels	
Determined from Reference:	AuCal-100119_1332		

	Calculated	Ref	-5%	+5%
Inter-row Spacing (Angstroms):	2.641	2.629	2.498	2.760
d2 or hk0 (Camera K/zero row dist.):	4.688	4.690	4.455	4.925
d1 or hk1 (Camera K/slant vector dist.):	2.528	2.530	2.403	2.656
Ratio of hk0/hk1:	1.837	1.834	1.742	1.926
Angle of Slant Vector (Measured):	74.9	74.570	70.841	78.298

From SAED Reference Book, "unknown" diffraction pattern was found to be that of:

Diopside

By: **F Craig**

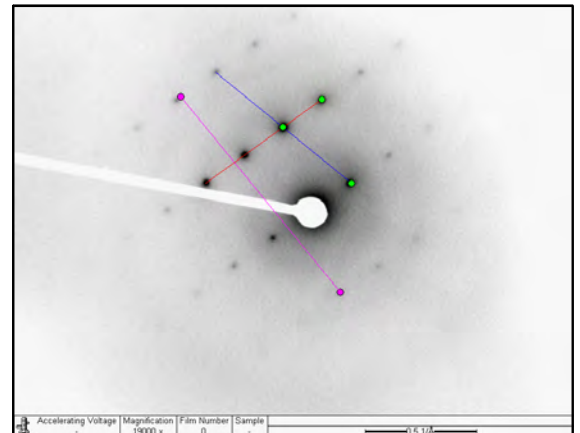
Miller Indices hk0: (**2 0 0**)

Miller Indices hkl: (**-2 0 2**)

With a Zone Axis of: [**0 -1 0**]

Preliminary Identification was: CORRECT

INCORRECT



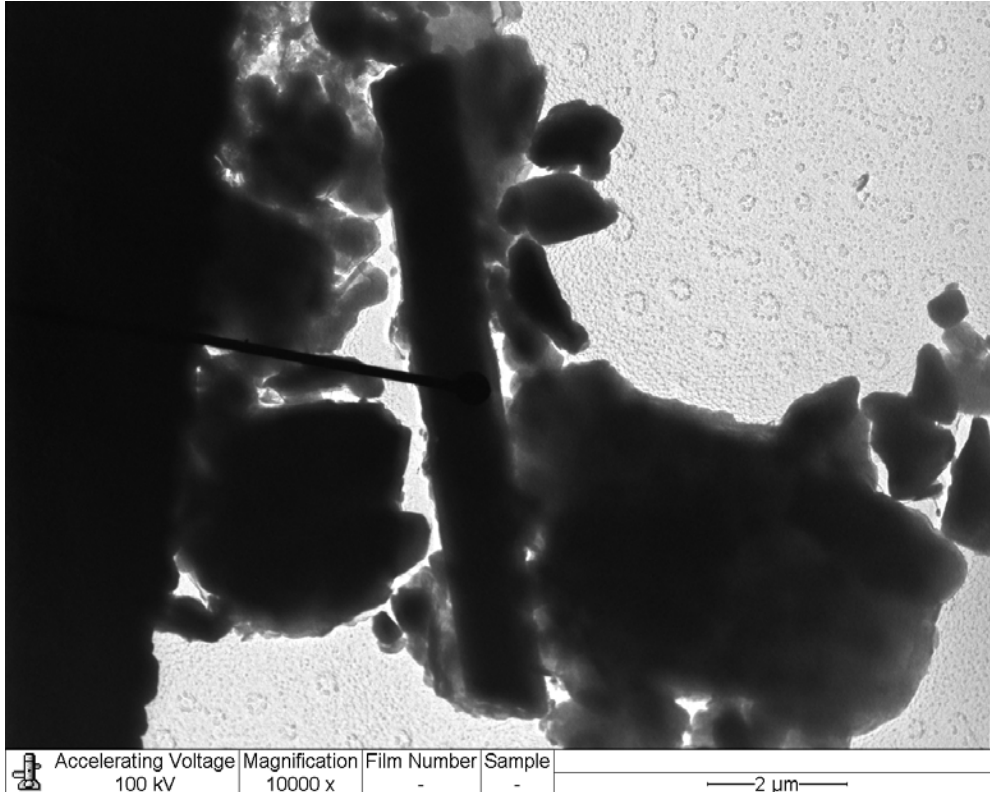
Percent accuracy to date: **100 %**



EMSL ANALYTICAL, INC.

EMSL Analytical, Inc.

Photomicrograph Report



Micrograph Information

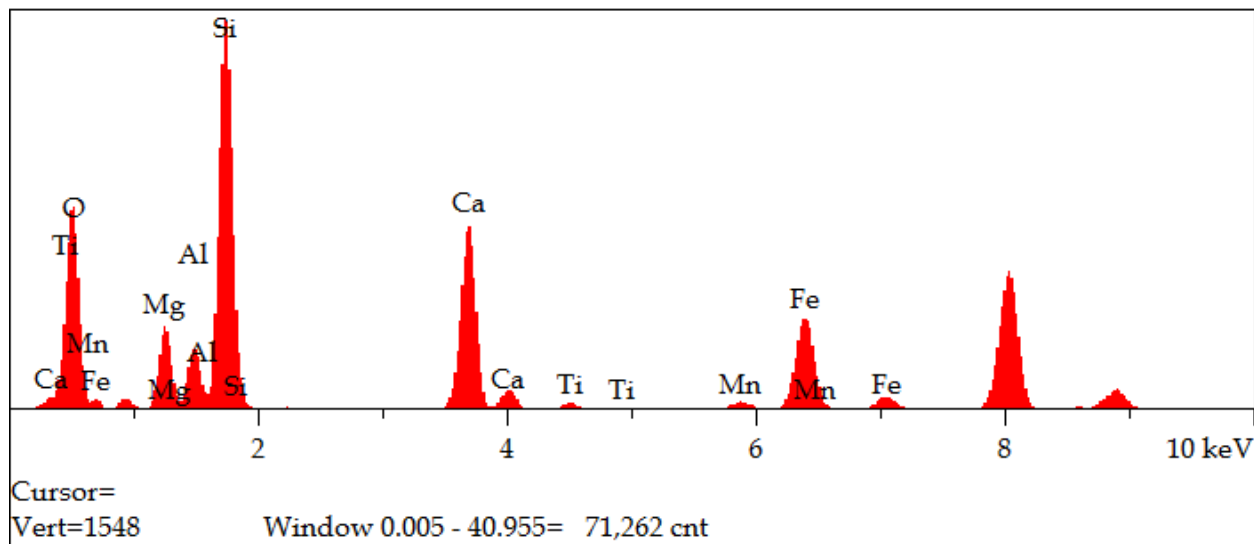
Sample ID:	0006
Order ID:	041927219
Image Number:	1338
Mineral Type:	Pyroxene
Date:	10/1/2019
Magnification:	10000
Microscope:	1



Energy Dispersive X-Ray Analysis via Transmission Electron Microscopy

EMSL ANALYTICAL, INC.

Analysis Report: 2019_04-01_041927219-0006_STR_4_PYX



Spectrum 1

Component	Type	Mole Conc.	Conc.	Units		APFU
FeO	Calc	12.526	15.066	wt.%		0.49
MnO	Calc	1.254	1.489	wt.%		0.05
TiO ₂	Calc	0.640	0.856	wt.%		0.03
CaO	Calc	22.519	21.140	wt.%		0.88
SiO ₂	Calc	44.392	44.651	wt.%		1.74
Al ₂ O ₃	Calc	4.073	6.950	wt.%		0.32
MgO	Calc	14.596	9.848	wt.%		0.57
		100.000	100.000	Wt.%	Total	O=6.0

Table 1

Elt.	Line	Intensity (c/s)	Quant	Conc.	Units	Calib File	Bkg Int (c/s)	
O	Ka	73.11	Foil	41.026	wt.%	@IXRF-Cal-2019-3.FOIL	7.14	
Mg	Ka	50.78	Foil	5.939	wt.%	@IXRF-Cal-2019-3.FOIL	10.19	
Al	Ka	39.77	Foil	3.679	wt.%	@IXRF-Cal-2019-3.FOIL	10.35	
Si	Ka	262.57	Foil	20.872	wt.%	@IXRF-Cal-2019-3.FOIL	8.36	
Ca	Ka	138.73	Foil	15.109	wt.%	@IXRF-Cal-2019-3.FOIL	6.75	
Ti	Ka	4.99	Foil	0.513	wt.%	@IXRF-Cal-2019-3.FOIL	3.81	
Mn	Ka	6.15	Foil	1.153	wt.%	@IXRF-Cal-2019-3.FOIL	3.25	
Fe	Ka	84.27	Foil	11.711	wt.%	@IXRF-Cal-2019-3.FOIL	3.16	
				100.000	Wt.%			Total

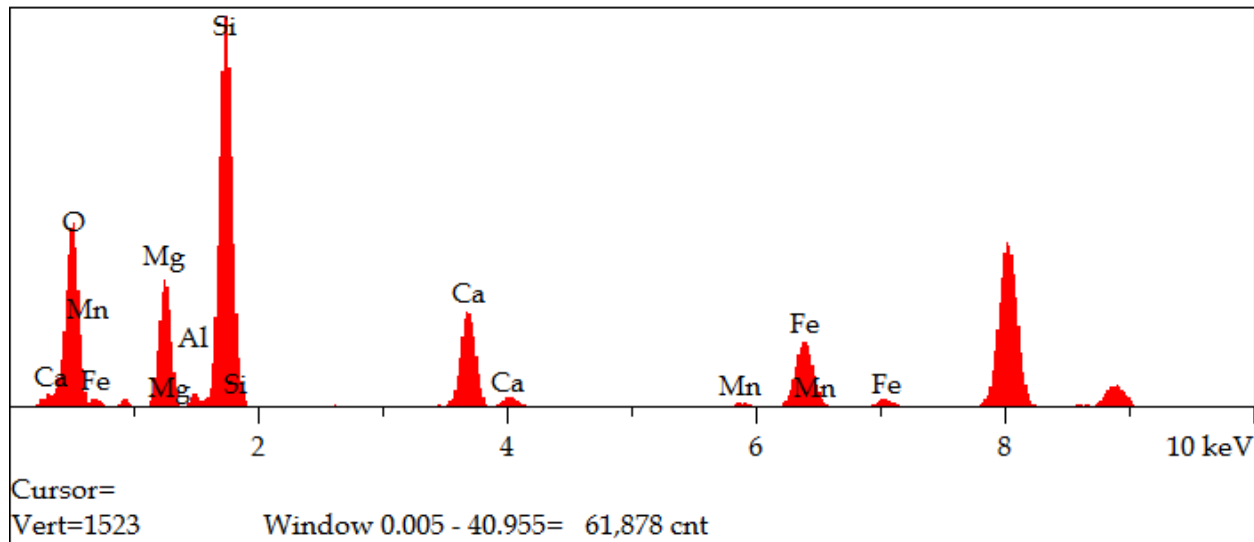
Table 2



Energy Dispersive X-Ray Analysis via Transmission Electron Microscopy

EMSL ANALYTICAL, INC.

Analysis Report: 2019_04-01_041927219-0006_STR_6_Act



Spectrum 1

Component	Type	Mole Conc.	Conc.	Units	APFU
FeO	Calc	8.595	10.974	wt.%	1.27
MnO	Calc	0.674	0.849	wt.%	0.10
CaO	Calc	12.132	12.091	wt.%	1.80
SiO2	Calc	53.510	57.141	wt.%	7.93
Al2O3	Calc	0.888	1.607	wt.%	0.26
MgO	Calc	24.201	17.337	wt.%	3.58
		100.000	100.000	Wt.%	Total O=23.0

Table 1

Elt.	Line	Intensity (c/s)	Quant	Conc.	Units	Calib File	Bkg Int (c/s)
O	Ka	93.90	Foil	44.155	wt.%	@IXRF-Cal-2019-3.FOIL	5.89
Mg	Ka	70.92	Foil	10.455	wt.%	@IXRF-Cal-2019-3.FOIL	8.80
Al	Ka	6.86	Foil	0.850	wt.%	@IXRF-Cal-2019-3.FOIL	9.52
Si	Ka	233.59	Foil	26.710	wt.%	@IXRF-Cal-2019-3.FOIL	7.48
Ca	Ka	67.37	Foil	8.642	wt.%	@IXRF-Cal-2019-3.FOIL	4.77
Mn	Ka	3.05	Foil	0.658	wt.%	@IXRF-Cal-2019-3.FOIL	2.75
Fe	Ka	53.65	Foil	8.530	wt.%	@IXRF-Cal-2019-3.FOIL	2.75
				100.000	Wt.%		Total

Table 2

EMSL Analytical, Inc
Elutriator Prep Worksheet



EMSL Ord./sample:	041927219 -0007
Client Sample ID:	RISB-ER-01-1.0-20190911

Date:	9/23/2019
System:	3
Operator:	CB

Sample Drying:	
Temperature (C):	98.5
Start Date:	9/20/2019
End Date:	9/21/2019

Sample Weight (g)		Total Dried Sample Weight (g)	
Pre Drying	3420.23 g	>3/8"	204.6 g
Post Drying	3384.56 g	<3/8"	53.29 g (In Tumbler)
% moisture	1.0	<3/8"	3127 g (Not Used)

	Start Date	Start Time	Stop Date	Stop Time
Conditioning	21-Sep-19	10:00	23-Sep-19	9:20
Tumbling	23-Sep-19	9:20	23-Sep-19	14:20

Tumbling Speed	RH: 64
30 rpm	Temp: 20.6

% Moisture from surrogate sample			Reviewed:	
Pre Dry	g	% Moisture		
Post Dry	g		Date:	

1430.3	91.87	mL/min
ME	IST	



Following results are needed for calculation of asbestos concentration in the total sample mass

Resp. Mass	mo (mg)=	40			Resp.%=	ME Filter Information				
Emission rate	k=	0.0012			0.07506					
Filter ID #	Filter ME	Prewrite (mg)	Post-Weight (mg)	Col. Time (minutes)	mf (mg)	Total Time (min)	In(mo-mf)	t(min)	In(mo-mf)	In(mo)
1	ME	24.431	25.255	20	0.824	20	3.668	20	3.6681	3.6889
2	ME	24.691	26.597	30	2.730	50	3.618	50	3.6182	3.6889
3	ME	24.379	25.782	40	4.133	90	3.580	90	3.5798	3.6889
4	ME	24.361	25.884	40	5.656	130	3.536	130	3.5364	3.6889
5	ME	24.456	26.053	40	7.253	170	3.489	170	3.4888	3.6889
6	ME	24.362	26.092	40	8.983	210	3.435	210	3.4345	3.6889
7	ME	24.475	25.814	40	10.322	250	3.390	250	3.3904	3.6889
8	ME	24.257	25.598	40	11.663	290	3.344	290	3.3442	3.6889
	ME									
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Remove Contents of cells that have no data

EMSL Analytical, Inc
Elutriator Prep Worksheet

EMSL Ord./sample:	041927219-0007
Client Sample ID:	RISB-ER-01-1.0-20190911

IST Filter Information

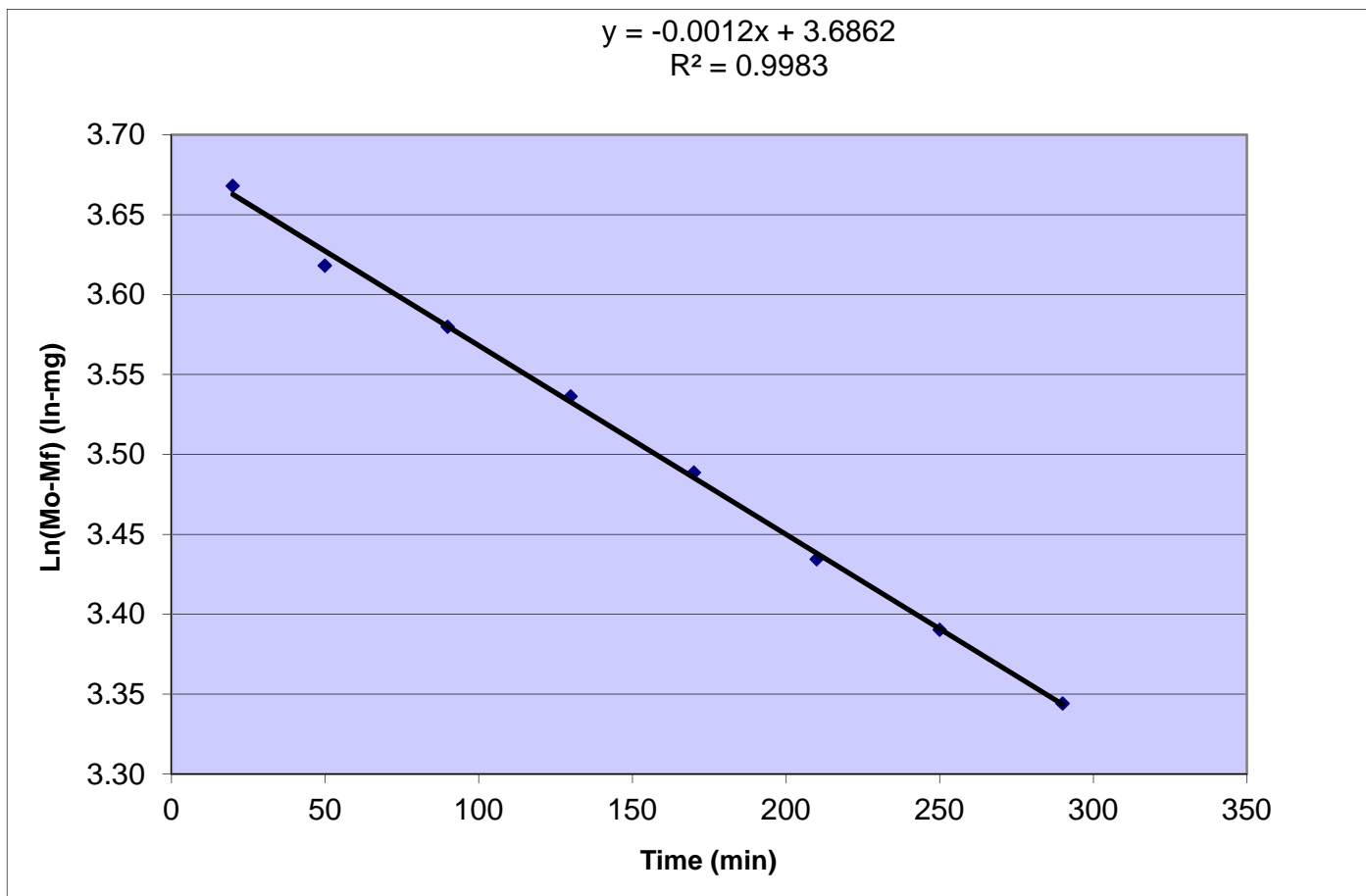
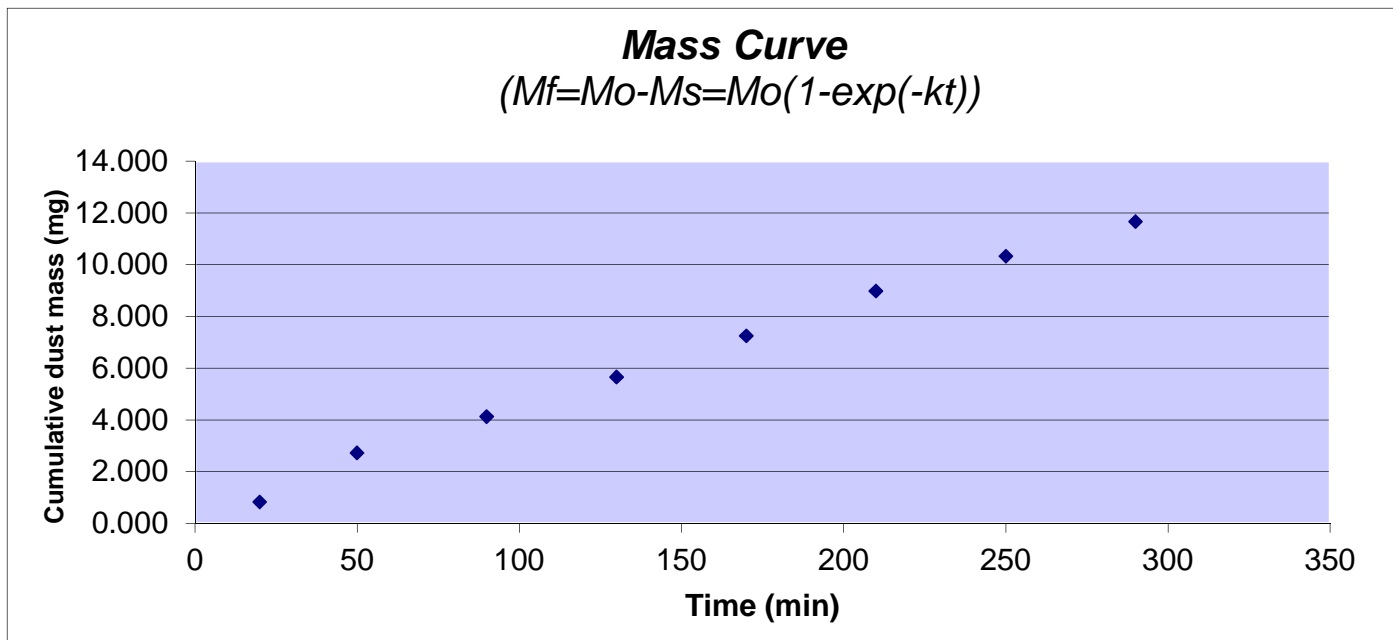
Filter ID #	Filter	Preweight (mg)	Post-Weight (mg)	ΔMF (mg)
1	IST	27.568	27.674	0.106
2	IST	27.742	27.859	0.117
3	IST	27.653	27.754	0.101
4	IST	27.54	27.667	0.127
5	IST	27.672	27.819	0.147
	IST			0.000
	IST			0.000
	IST			0.000
	IST			0.000
	IST			0.000

Enter Filter numbers that are to be sent.

Filters sent to another lab for analysis
1
2

Filter Lot Used	Filter Type: Pore Size	
60610200	MCE	0.2
microns		

EMSL Ord./sample:	041927219-0007
Client Sample ID:	RISB-ER-01-1.0-20190911





EPA 540-R-97-028 -Superfund Method

Draft Modified Elutriator Method for the Determination of Asbestos in Soils and Bulk Material Method
(Revision 1)

Bench Sheet Data

Client: Craig Knox, Ramboll Environ US Corporation					
EMSL Sample ID:	041927219-0007	GO area (mm ²):	0.0128	Scope:	JEOL 100CX II (04-01)
Customer Sample:	RISB-ER-01-1.0-20190911	Grid Box :	0419-SpecProj-112: E	Mag:	10,000
		Pore Size (micron):	0.2	Analyst(s):	F. Craig
Project ID:	1690011200-028 / NERT Phase 2 Mod. 12			Analysis Date:	10/03/2019

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Image Number	Structure Comments
			Primary	Total	Length	Width				
E1	J2	None Detected								
E1	J4	None Detected								
E1	J6	None Detected								
E1	J10	None Detected								
E1	I9	None Detected								
E1	I7	None Detected								
E1	I5	None Detected								
E1	I3	None Detected								
E1	I1	None Detected								
E1	H2	None Detected								
E1	H4	None Detected								
E1	H6	None Detected								
E1	H8	None Detected								
E1	H10	None Detected								
E1	G9	MD11	1		30.9	30.88	AX	Amosite		
E1	G9	MF		1	5.8	0.96	AX	Amosite		
E1	G7	None Detected								
E1	G5	None Detected								
E1	G3	None Detected								
E1	G1	MD11	2		30.9	22.56	AX	Non Reg.Amph.		
E1	G1	MF		2	10.7	2.38	AX	Non Reg.Amph.		
E1	F2	None Detected								
E1	F4	None Detected								
E1	F6	None Detected								
E1	F8	None Detected								
E1	F10	None Detected								
E1	E9	None Detected								
E1	E7	None Detected								
E1	E5	None Detected								
E1	E3	None Detected								
E1	E1	None Detected								
E1	D2	None Detected								
E1	D4	None Detected								
E1	D6	None Detected								
E1	D8	None Detected								
E1	D10	None Detected								
E1	C9	None Detected								
E1	C7	None Detected								
E1	C5	None Detected								
E1	C3	None Detected								



EPA 540-R-97-028 -Superfund Method

Draft Modified Elutriator Method for the Determination of Asbestos in Soils and Bulk Material Method
(Revision 1)

Bench Sheet Data

Client: Craig Knox, Ramboll Environ US Corporation					
EMSL Sample ID:	041927219-0007	GO area (mm ²):	0.0128	Scope:	JEOL 100CX II (04-01)
Customer Sample:	RISB-ER-01-1.0-20190911	Grid Box :	0419-SpecProj-112: E	Mag:	10,000
		Pore Size (micron):	0.2	Analyst(s):	F. Craig
Project ID:	1690011200-028 / NERT Phase 2 Mod. 12			Analysis Date:	10/03/2019

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Image Number	Structure Comments
			Primary	Total	Length	Width				
E1	C1	None Detected								
E1	B2	None Detected								
E1	B4	None Detected								
E1	B6	None Detected								
E1	B8	None Detected								
E1	B10	None Detected								
E1	A9	None Detected								
E1	A7	None Detected								
E1	A5	None Detected								
E1	A3	None Detected								
E2	A1	None Detected								
E2	A1	None Detected								
E2	A3	None Detected								
E2	A5	None Detected								
E2	A7	None Detected								
E2	A9	None Detected								
E2	B10	None Detected								
E2	B8	None Detected								
E2	B6	None Detected								
E2	B4	None Detected								
E2	B2	None Detected								
E2	C1	None Detected								
E2	C3	None Detected								
E2	C5	None Detected								
E2	C7	None Detected								
E2	C9	None Detected								
E2	D10	None Detected								
E2	D8	None Detected								
E2	D6	None Detected								
E2	D4	None Detected								
E2	D2	None Detected								
E2	E1	None Detected								
E2	E3	None Detected								
E2	E5	None Detected								
E2	E7	None Detected								
E2	E9	None Detected								
E2	F10	None Detected								
E2	F8	None Detected								
E2	F6	None Detected								
E2	F4	None Detected								



EPA 540-R-97-028 -Superfund Method

Draft Modified Elutriator Method for the Determination of Asbestos in Soils and Bulk Material Method
(Revision 1)

Bench Sheet Data

Client:		Craig Knox, Ramboll Environ US Corporation			
EMSL Sample ID:	041927219-0007	GO area (mm ²):	0.0128	Scope:	JEOL 100CX II (04-01)
Customer Sample:	RISB-ER-01-1.0-20190911	Grid Box :	0419-SpecProj-112: E	Mag:	10,000
		Pore Size (micron):	0.2	Analyst(s):	F. Craig
Project ID:	1690011200-028 / NERT Phase 2 Mod. 12			Analysis Date:	10/03/2019

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Image Number	Structure Comments
			Primary	Total	Length	Width				
E2	F2	None Detected								
E2	G1	None Detected								
E2	G3	None Detected								
E2	G5	None Detected								
E2	G7	None Detected								
E2	G9	None Detected								
E2	H10	None Detected								
E2	H8	None Detected								
E2	H6	None Detected								
E2	H4	None Detected								
E2	H2	None Detected								
E2	I1	None Detected								
E2	I3	None Detected								
E2	I5	None Detected								
E2	I7	None Detected								
E2	I9	None Detected								
E2	J10	None Detected								
E2	J8	None Detected								
E2	J6	None Detected								
E2	J4	None Detected								
E2	J2	None Detected								
E3	B8	None Detected								
E3	B6	None Detected								



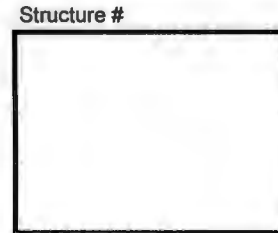
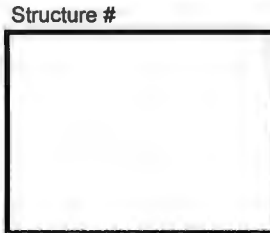
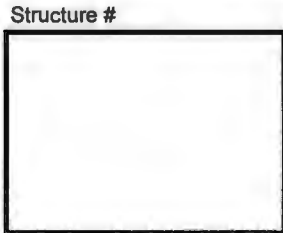
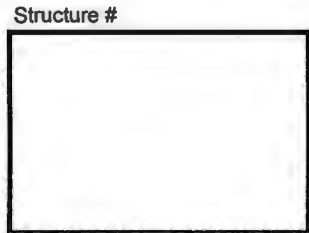
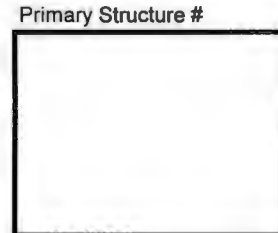
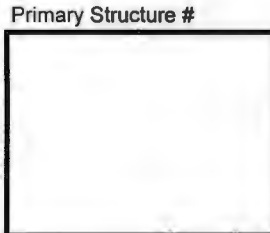
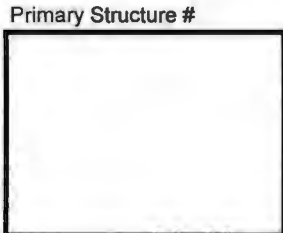
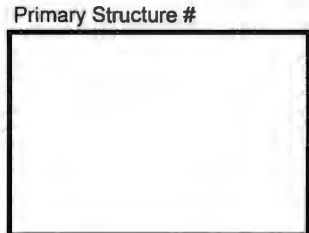
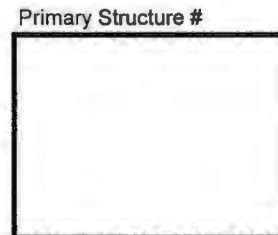
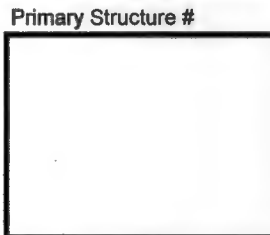
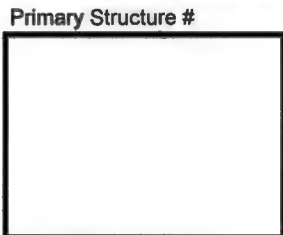
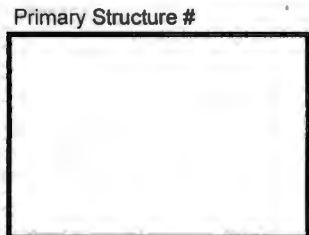
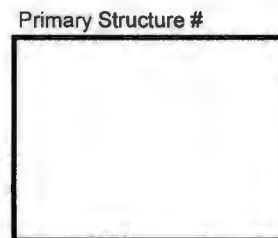
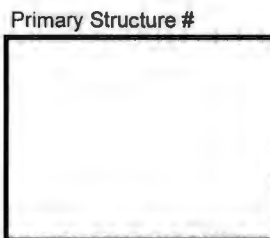
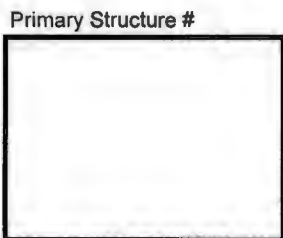
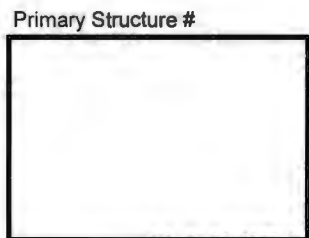
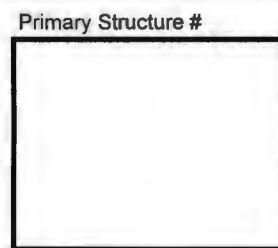
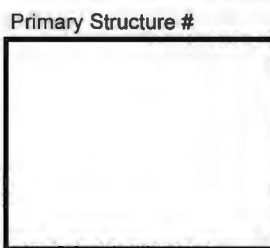
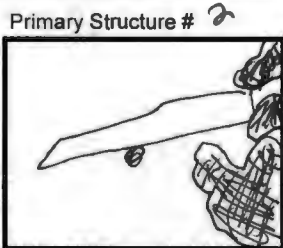
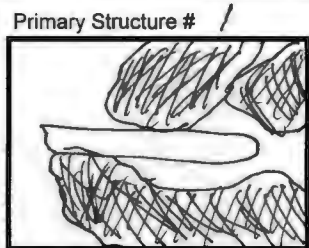
EPA 540-R-97-028 -Superfund Method
Draft Modified Elutriator Method for the Determination of Asbestos in Soils
and Bulk Material Method (Revision 1)
Structure Sketch Sheet for Direct Data Entry

EMSL Order ID: 041927219-0007

Client: Ramboll Environ US Corporation

Client Sample: RISB-ER-01-1.0-20190911

Page 1 of 1



Analyst: Fe

Date: 10/3/19

Scope: 04-01

EMSL Analytical, Inc
Elutriator Prep Worksheet



EMSL Ord./sample: 041927219 -0008
Client Sample ID: RISB-EJ-01-1.0-20190911

Date: 9/23/2019
System: 2
Operator: CB

Sample Drying:
Temperature (C): 98.5
Start Date: 9/20/2019
End Date: 9/21/2019

Sample Weight (g)		Total Dried Sample Weight (g)	
Pre Drying	3451.62 g	>3/8"	233.1 g
Post Drying	3392.85 g	<3/8"	55.13 g (In Tumbler)
% moisture	1.7	<3/8"	3105 g (Not Used)

	Start Date	Start Time	Stop Date	Stop Time
Conditioning	21-Sep-19	10:00	24-Sep-19	8:55
Tumbling	24-Sep-19	8:55	24-Sep-19	13:55

Tumbling Speed RH: 62
30 rpm Temp: 20.7

% Moisture from surrogate sample		Reviewed:	
Pre Dry	g	% Moisture	
Post Dry	g	Date:	

1423.9 95.1 mL/min
ME IST



Following results are needed for calculation of asbestos concentration in the total sample mass

Resp. Mass	mo (mg)=	5	Resp.%=	ME Filter Information										
Emission rate	k=	0.0036	0.00907	Filter ID #	Filter ME	Preweight (mg)	Post-Weight (mg)	Col. Time (minutes)	mf (mg)	Total Time (min)	In(mo-mf)	t(min)	In(mo-mf)	In(mo)
				1	ME	24.363	25.557	20	1.194	20	1.337	20	1.3366	1.6094
				2	ME	24.336	25.823	30	2.681	50	0.841	50	0.8411	1.6094
				3	ME	24.532	25.012	40	3.161	90	0.609	90	0.6092	1.6094
				4	ME	24.307	24.434	50	3.288	140	0.538	140	0.5377	1.6094
				5	ME	24.271	24.291	50	3.308	190	0.526	190	0.5259	1.6094
				6	ME	24.372	24.393	50	3.329	240	0.513	240	0.5134	1.6094
				7	ME	24.298	24.327	50	3.358	290	0.496	290	0.4959	1.6094
					ME									
					ME									
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					ME									

Remove Contents of cells that have no data

EMSL Analytical, Inc
Elutriator Prep Worksheet

EMSL Ord./sample:	041927219-0008
Client Sample ID:	RISB-EJ-01-1.0-20190911

IST Filter Information

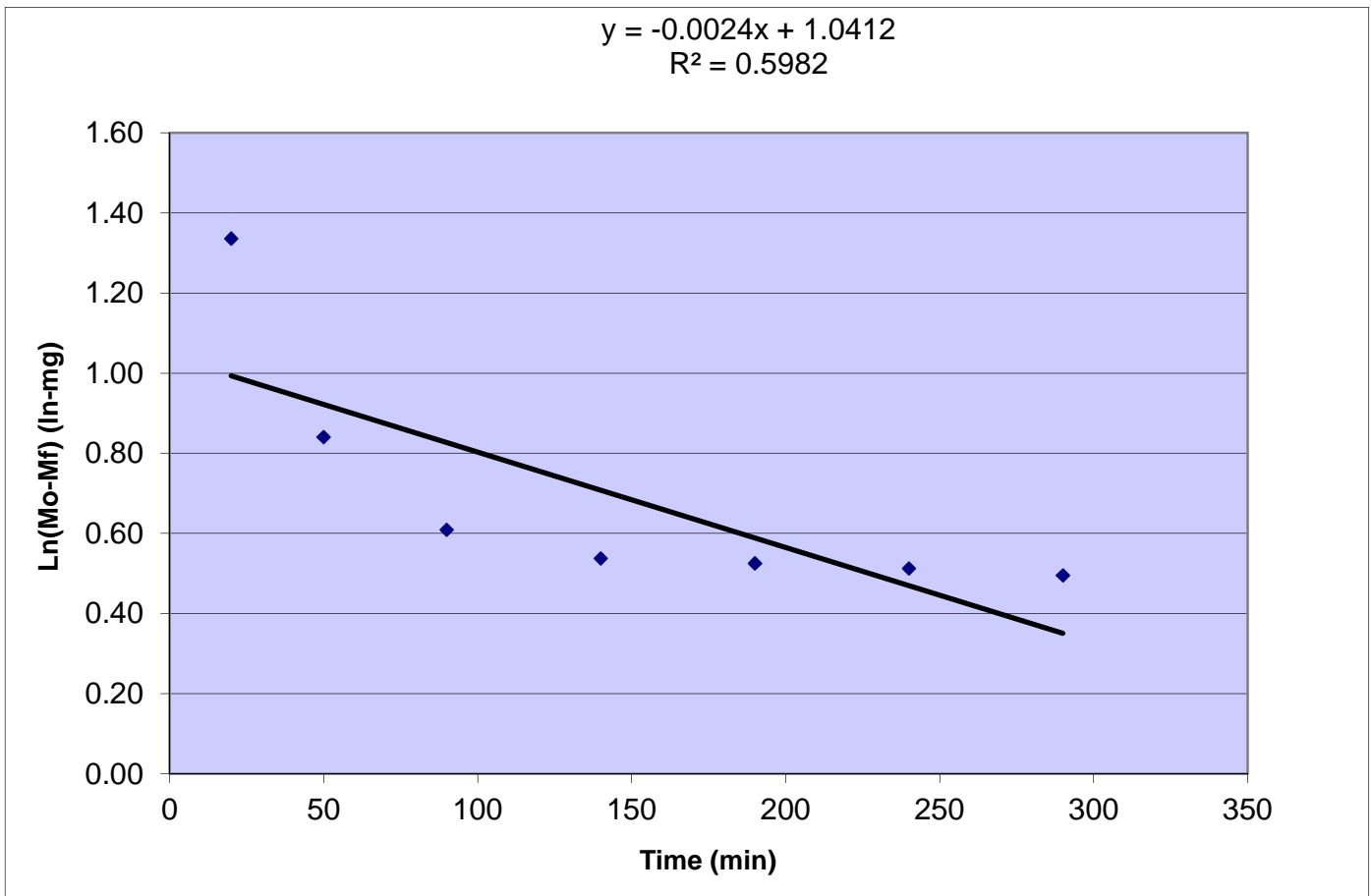
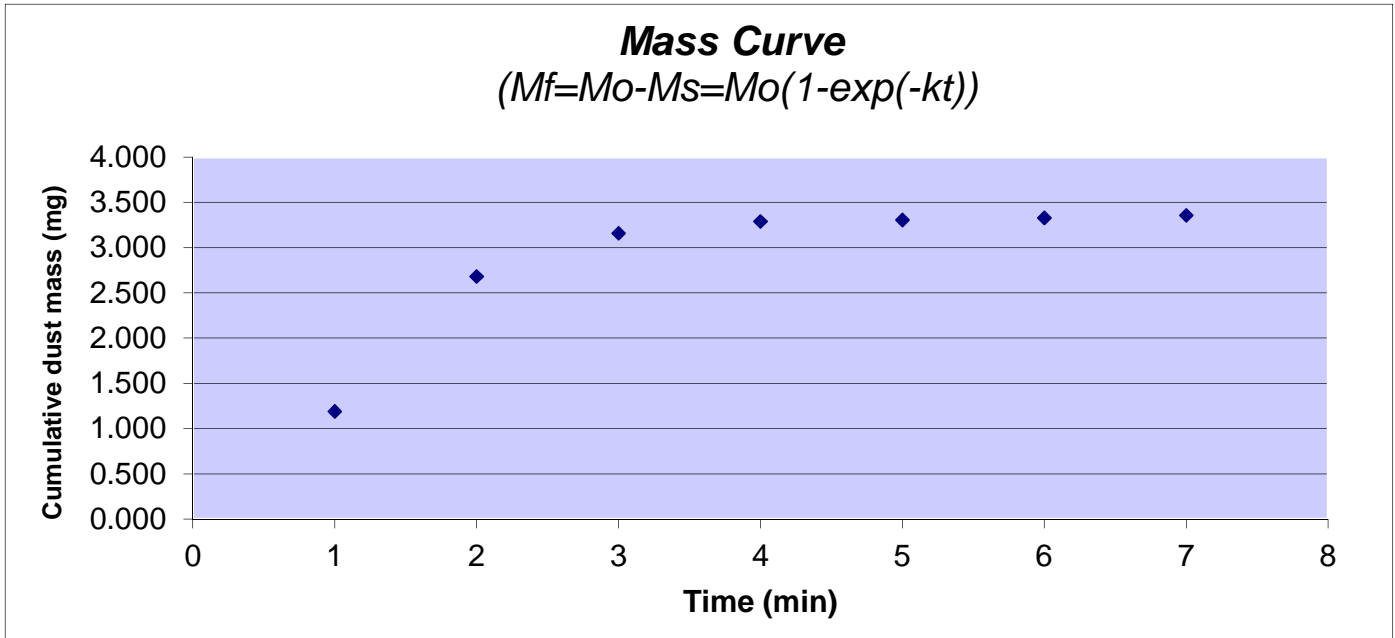
Filter ID #	Filter	Preweight (mg)	Post-Weight (mg)	ΔMF (mg)
1	IST	27.482	27.583	0.101
2	IST	27.418	27.523	0.105
3	IST	27.385	27.501	0.116
4	IST	27.386	27.489	0.103
5	IST	27.476	27.579	0.103
	IST			0.000
	IST			0.000
	IST			0.000
	IST			0.000
	IST			0.000

Enter Filter numbers that are to be sent.

Filters sent to another lab for analysis
3

Filter Lot Used	Filter Type: Pore Size	
60610200	MCE	0.2
microns		

EMSL Ord./sample:	041927219-0008
Client Sample ID:	RISB-EJ-01-1.0-20190911





EPA 540-R-97-028 -Superfund Method

Draft Modified Elutriator Method for the Determination of Asbestos in Soils and Bulk Material Method
(Revision 1)

Bench Sheet Data

Client: Craig Knox, Ramboll Environ US Corporation					
EMSL Sample ID:	041927219-0008	GO area (mm ²):	0.0128	Scope:	JEOL 100CX II (04-01)
Customer Sample:	RISB-EJ-01-1.0-20190911	Grid Box :	0419-SpecProj-112: F	Mag:	10,000
		Pore Size (micron):	0.2	Analyst(s):	F. Craig
Project ID:	1690011200-028 / NERT Phase 2 Mod. 12			Analysis Date:	10/06/2019

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Image Number	Structure Comments
			Primary	Total	Length	Width				
F1	J2	None Detected								
F1	J4	None Detected								
F1	J6	None Detected								
F1	J8	None Detected								
F1	J10	None Detected								
F1	I9	None Detected								
F1	I7	None Detected								
F1	I5	None Detected								
F1	I3	None Detected								
F1	I1	None Detected								
F1	H2	None Detected								
F1	H4	None Detected								
F1	H6	None Detected								
F1	H8	None Detected								
F1	H10	None Detected								
F1	G9	None Detected								
F1	G7	None Detected								
F1	G5	None Detected								
F1	G3	None Detected								
F1	G1	None Detected								
F1	F2	None Detected								
F1	F4	None Detected								
F1	F6	None Detected								
F1	F8	None Detected								
F1	F10	None Detected								
F1	E9	None Detected								
F1	E7	None Detected								
F1	E5	None Detected								
F1	E3	None Detected								
F1	E1	None Detected								
F1	D2	None Detected								
F1	D4	None Detected								
F1	D6	None Detected								
F1	D8	None Detected								
F1	D10	None Detected								
F1	C9	None Detected								
F1	C7	None Detected								
F1	C5	None Detected								
F1	C3	None Detected								
F1	C1	None Detected								



EPA 540-R-97-028 -Superfund Method

Draft Modified Elutriator Method for the Determination of Asbestos in Soils and Bulk Material Method
(Revision 1)

Bench Sheet Data

Client: Craig Knox, Ramboll Environ US Corporation			
EMSL Sample ID:	041927219-0008	GO area (mm ²):	0.0128
Customer Sample:	RISB-EJ-01-1.0-20190911	Grid Box :	0419-SpecProj-112: F
		Pore Size (micron):	0.2
Project ID:	1690011200-028 / NERT Phase 2 Mod. 12		Analysis Date:
			10/06/2019

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Image Number	Structure Comments
			Primary	Total	Length	Width				
F1	B2	None Detected								
F1	B4	None Detected								
F1	B6	None Detected								
F1	B8	None Detected								
F1	B10	None Detected								
F1	A9	None Detected								
F1	A7	None Detected								
F1	A5	None Detected								
F1	A3	None Detected								
F1	A1	None Detected								
F2	A1	None Detected								
F2	A3	None Detected								
F2	A5	None Detected								
F2	A7	None Detected								
F2	A9	None Detected								
F2	B10	None Detected								
F2	B8	None Detected								
F2	B6	None Detected								
F2	B4	None Detected								
F2	B2	None Detected								
F2	C1	None Detected								
F2	C3	None Detected								
F2	C5	None Detected								
F2	C7	None Detected								
F2	C9	None Detected								
F2	D10	None Detected								
F2	D8	None Detected								
F2	D6	None Detected								
F2	D4	None Detected								
F2	D2	None Detected								
F2	E1	None Detected								
F2	E3	None Detected								
F2	E5	None Detected								
F2	E7	None Detected								
F2	E9	None Detected								
F2	F10	None Detected								
F2	F8	None Detected								
F2	F6	None Detected								
F2	F4	None Detected								
F2	F2	None Detected								



EPA 540-R-97-028 -Superfund Method

Draft Modified Elutriator Method for the Determination of Asbestos in Soils and Bulk Material Method
(Revision 1)

Bench Sheet Data

Client:		Craig Knox, Ramboll Environ US Corporation			
EMSL Sample ID:	041927219-0008	GO area (mm ²):	0.0128	Scope:	JEOL 100CX II (04-01)
Customer Sample:	RISB-EJ-01-1.0-20190911	Grid Box :	0419-SpecProj-112: F	Mag:	10,000
		Pore Size (micron):	0.2	Analyst(s):	F. Craig
Project ID:	1690011200-028 / NERT Phase 2 Mod. 12			Analysis Date:	10/06/2019

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Image Number	Structure Comments
			Primary	Total	Length	Width				
F2	G1	None Detected								
F2	G3	None Detected								
F2	G5	None Detected								
F2	G7	None Detected								
F2	G9	None Detected								
F2	H10	None Detected								
F2	H8	None Detected								
F2	H6	None Detected								
F2	H4	None Detected								
F2	H2	None Detected								
F2	I1	None Detected								
F2	I3	None Detected								
F2	I5	None Detected								
F2	I7	None Detected								
F2	I9	None Detected								
F2	J10	None Detected								
F2	J8	None Detected								
F2	J6	None Detected								
F2	J4	None Detected								
F2	J2	None Detected								



EPA 540-R-97-028 -Superfund Method
Draft Modified Elutriator Method for the Determination of Asbestos in Soils
and Bulk Material Method (Revision 1)
Structure Sketch Sheet for Direct Data Entry

EMSL Order ID: 041927219-0008

Client Sample: RISB-EJ-01-1.0-20190911

Client: Ramboll Environ US Corporation

Page 1 of 1

Primary Structure #

NO

Primary Structure #

Primary Structure #

Primary Structure #

Primary Structure #

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Primary Structure #

Primary Structure #

Primary Structure #

Primary Structure #

Primary Structure #

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Structure #

Analyst: FC

Date: 10/6/19

Scope: 04-01



EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Chain of Custody

EMSL Order Number (Lab Use Only):

041927219

EMSL ANALYTICAL, INC.
200 ROUTE 130 NORTH
CINNAMINSON NJ 08077
PHONE: 856-858-4800
FAX: 856-786-5974

Company : Ramboll		EMSL-Bill to: <input checked="" type="checkbox"/> Same <input type="checkbox"/> Different If Bill to is Different note instructions in Comments**	
Street: 2200 Powell Street Suite 700		Third Party Billing requires written authorization from third party	
City: Emeryville	State/Province: CA	Zip/Postal Code: 94608	Country: USA
Report To (Name): Craig Knox		Fax #:	
Telephone #: 510-420-2518		Email Address: cknox@ramboll.com	
Project Name/Number: NERT Phase 2 Mod. 12/ 1690011200-028			
Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email <input type="checkbox"/> Purchase Order:		U.S. State Samples Taken:	

Turnaround Time (TAT) Options* - Please Check

3 Hour 6 Hour 24 Hour 48 Hour 72 Hour 96 Hour 1 Week 2 Week

*For TEM Air 3 hr through 6 hr, please call ahead to schedule. *There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.

PCM - Air <input type="checkbox"/> NIOSH 7400 <input type="checkbox"/> w/ OSHA 8hr. TWA PLM - Bulk (reporting limit) <input type="checkbox"/> PLM EPA 600/R-93/116 (<1%) <input type="checkbox"/> PLM EPA NOB (<1%) Point Count <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) Point Count w/Gravimetric <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) <input type="checkbox"/> NYS 198.1 (friable in NY) <input type="checkbox"/> NYS 198.6 NOB (non-friable-NY) <input type="checkbox"/> NIOSH 9002 (<1%)	TEM - Air <input type="checkbox"/> 4-4.5hr TAT (AHERA only) <input type="checkbox"/> AHERA 40 CFR, Part 763 <input type="checkbox"/> NIOSH 7402 <input type="checkbox"/> EPA Level II <input type="checkbox"/> ISO 10312 TEM - Bulk <input type="checkbox"/> TEM EPA NOB <input type="checkbox"/> NYS NOB 198.4 (non-friable-NY) <input type="checkbox"/> Chatfield SOP <input type="checkbox"/> TEM Mass Analysis-EPA 600 sec. 2.5 TEM - Water: EPA 100.2 Fibers >10µm <input type="checkbox"/> Waste <input type="checkbox"/> Drinking All Fiber Sizes <input type="checkbox"/> Waste <input type="checkbox"/> Drinking	TEM - Dust <input type="checkbox"/> Microvac - ASTM D 5755 <input type="checkbox"/> Wipe - ASTM D6480 <input type="checkbox"/> Carpet Sonication (EPA 600/J-93/167) Soil/Rock/Vermiculite <input type="checkbox"/> PLM CARB 435 - A (0.25% sensitivity) <input type="checkbox"/> PLM CARB 435 - B (0.1% sensitivity) <input type="checkbox"/> TEM CARB 435 - B (0.1% sensitivity) <input type="checkbox"/> TEM CARB 435 - C (0.01% sensitivity) <input type="checkbox"/> EPA Protocol (Semi-Quantitative) <input type="checkbox"/> EPA Protocol (Quantitative) Other: <input checked="" type="checkbox"/> Superfund EPA 540-R-97-028 (Elutriator Method)
--	--	---

Check For Positive Stop - Clearly Identify Homogenous Group

Samplers Name: GABRIEL MICLETTE	Samplers Signature: <i>[Signature]</i>
---------------------------------	--

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
R15B-ER-02-1.0-20190911			9/11/19 / 0816
R15B-EJ-02-1.0-20190911			1 / 0825
R15B-EJ-04-1.0-20190911			1 / 0830
R15B-EJ-03-1.0-20190911			1 / 0840
R15B-EJ-03-1.0-20190911-FD			1 / 0845
R15B-ER-03-1.0-20190911			1 / 0850
R15B-ER-01-1.0-20190911			1 / 0900
R15B-EJ-01-1.0-20190911			9/11/19 / 0915

Client Sample # (s):	-	Total # of Samples:	8
Relinquished (Client):	RAMBOLL	Date:	9-11-2019
Received (Lab):	<i>[Signature]</i> EMSL	Date:	9-16-19
Time:	1330	Time:	8:43 am
Comments/Special Instructions:			

RECEIVED SEP 16 2019