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Attn: Derrick Wills
 Tronox-LLC-Henderson
 PO Box 55
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Customer ID: TRNX26
 Customer PO: 2027.001
 Received: 5/20/2010 9:50AM
 EMS LAB No: 137865
 Date Prepared: 8/13/2010 11:40AM
 Analysis Date: 8/18/2010 1:00PM

Phone: (947) 375-7004

Project: Tronox LLX Henderson, 560 W. Lake Mead Dr.,
 Henderson, NV/2027.001

Report Date: August 20, 2010

Date Sampled: 5/18/2010 11:55am

NIOSH 7402/ISO

DRAFT, MODIFIED ELUTRIATOR METHOD FOR THE DETERMINATION OF ASBESTOS IN SOILS AND BULK MATERIAL METHOD

EMS Laboratory Number: 137865	Mass of Respirable Dust on Filter: 173	µg
Customer Sample Number: SSAL6-02-0.33BPC	Area of collection filter: 385	mm ²
Minimum Level of Analysis (chrysotile): CD	Grid openings area: 0.0094	mm ²
Minimum Level of Analysis (amphibole): ADX	Grid Openings Analyzed: 89	
Magnification used for fiber counting: 9,200 x	Min. Str. Length/Max Str. Diameter: >5/<0.4	microns
Aspect ratio for fiber definition: 3:1		

Analyst(s): Radha Singh

Dust Generator - Total Dried Sample Weight-73g	Soil % Moisture	8.3	%
Not Used	Air Flow Rate Through ME Opening of Dust Generator:	1370	
Used in Tumbler	Air Flow Rate Through IST Opening of Dust Generator:	100	
	Estimate Total Air Flow Through Elutriator:	1470	

Analytical Sensitivity: 2.66E+06 Structure /g PM 10 Limit of Detection: 7.97E+06 Structure /g PM 10

Test For Uniformity (Chi-Square results)

Structure Class	Min ID Level Required	Counts		Poisson 95% Confidence Interval			
		Primary Str.	Total Str.	Density St/mm ²	Conc. Str/g PM10	Lower Limit Str/g PM10	Upper Limit Str/g PM10
Asbestos Structures >5um, ≤10um	ADX/CD	0	0	0	0	0	7.97E+06
Asbestos Structures >5um, ≤10um (Chrys)	CD	0	0	0	0	0	7.97E+06
Asbestos Structures >5um, ≤10um (Amph)	ADX	0	0	0	0	0	7.97E+06
Asbestos Structure >10um (Long)	ADX/CD	0	0	0	0	0	7.97E+06
Asbestos Structure >10um (Chrys)	CD	0	0	0	0	0	7.97E+06
Asbestos Structure >10um (Amph)	ADX	0	0	0	0	0	7.97E+06
Total Protocol Asbestos Structures	ADX/CD	0	0	0	0	0	7.97E+06
Protocol Asbestos Structures (Chrys)	CD	0	0	0	0	0	7.97E+06
Protocol Asbestos Structures (Amph)	ADX	0	0	0	0	0	7.97E+06
Total Protocol Non Asbestos Structures	NAM	1	1	1.2	2.66E+06	6.7E+04	1.48E+07


 Approved by Technical Director

Elutriator Data

Date: 8/13/10

Client: Northgate

Lab #: 137865

Sample ID: SSAL6-02-0.33 ~~PR~~ Sample weight (g): 73

Time air flow started: 800

Tumbler rpm: 30

IST Flowmeter (mL/min): 100

ME Flowmeter (mL/min): 1370

Filter No.	Start Time	Tested flow rate (mL/min)	Final Filter Wt (mg)	Initial Filter Wt (mg)	Dust Weight (mg)	Time Value (min)	Avg. rate of deposition (ug/min)	Optimal time (min)
1	1000	185	0.03635	0.02525	11.10	30		
2	1030		0.03993	0.02474	15.19	20		
3	1050		0.03939	0.02517	14.22	30		
4	110		0.04074	0.02535	15.39	25		
5	1135		0.03338	0.02516	8.22	20		
6	1155		0.03684	0.02537	11.47	20.5		
7	21320		0.04468	0.02512	19.56	53		
8	1315			0.02503				
Time							Dep. Rate	Estimate
100	1104 1/2		4.547	4.424	0.123	4 1/2		
120	120 1/2		4.638	4.402	0.226	6 1/2		
140	145		4.547	4.374	0.173	5		
1200	1203			4.365		5		
1210	1216		4.631	4.430	0.201	6		
1303	1313 1/2		4.513	4.387	0.126	5 1/2		

15% loss
2% loss
OK
OK
30% loss
OK

← PREP.
Ripped * No good

* 1
2
3
4
5
6
7
8

137866
138491
8-10-10

Moisture Content

Sample # 137866 - SSAN5-03-0.33 BPC

Dish wt.	31.47 g
Dish + Samp.	131.50 - 31.47 = 100.03g (initial wt.)
9:35 - 10:35	125.33 - 31.47 = 93.86g
11:10 - 12:10	124.28 - 31.47 = 92.81g
12:30 - 1:30	124.24 - 31.47 = 92.77g (Final wt.)

$$\% \text{ moisture} = 100 \times \frac{100.03 - 92.77}{92.77} = 7.83\%$$

138491 - SSQ4-03-1.50 BPC

Dish wt.	31.44 g
Dish + Samp.	132.44 - 31.44 = 101.0g (initial wt.)
9:35 - 10:35	127.48 - 31.44 = 96.04g
11:10 - 12:10	126.92 - 31.44 = 95.48g
12:30 - 1:30	126.90 - 31.44 = 95.46g (Final wt.)

$$\% \text{ moisture} = 100 \times \frac{101.0 - 95.46}{95.46} = 5.8\%$$

BP

137865 - #SSAL6-02-0.33 BPC

Dish wt.	31.47 g
Dish + Samp.	132.65 - 31.47 = 101.18g (initial wt.)
10:10 - 11:10	125.02 - 31.47 = 93.55g
11:30 - 12:30	124.90 - 31.47 = 93.43g
1:00 - 2:00	124.87 - 31.47 = 93.40g (Final wt.)

$$\% \text{ moisture} = 100 \times \frac{101.18 - 93.40}{93.40} = 8.33\%$$

BP

Prep Time: 1130-220

Count (Page of) NIOSH 7402/ISO

Report number: 137865
Sample number: SSALC-02-0.33 BPC
Site name: Northgate
Sample Description: 173 mg

Filter Type: PC 385 mm²
Date Sample was Run: 8/13/10

Magnification: 9,200 X

Preparation date: 8/16/10
Analysis date: 8/18/10

By JAP
By ES
(A): ADX, ADQ
Condition of Grid

Grid opening dimension: 0.0094 mm²
Level of Analysis: (C): CD, CDX

Grid loading Moderate

Grid	Grid Opening	Number of structures Primary	Number of structures Total	Class	Type of Structure	Width mm	Length mm	Comments
1A	C23							
	C26							
	E23							
	E26							
	E31							
	E34							
	E36							
	H33							
	H36							
	C41							
	C44							
	E41							
	E44							
	F43							
	F46							
	H43							
	H46							
1B	C23							
	C26							
	E23							
	E26							
	E31							
	E34							
	E36							
	H33							
	H36							
	H43							

TEM Asbestos Structure Count (Page of)

Report number: 137865

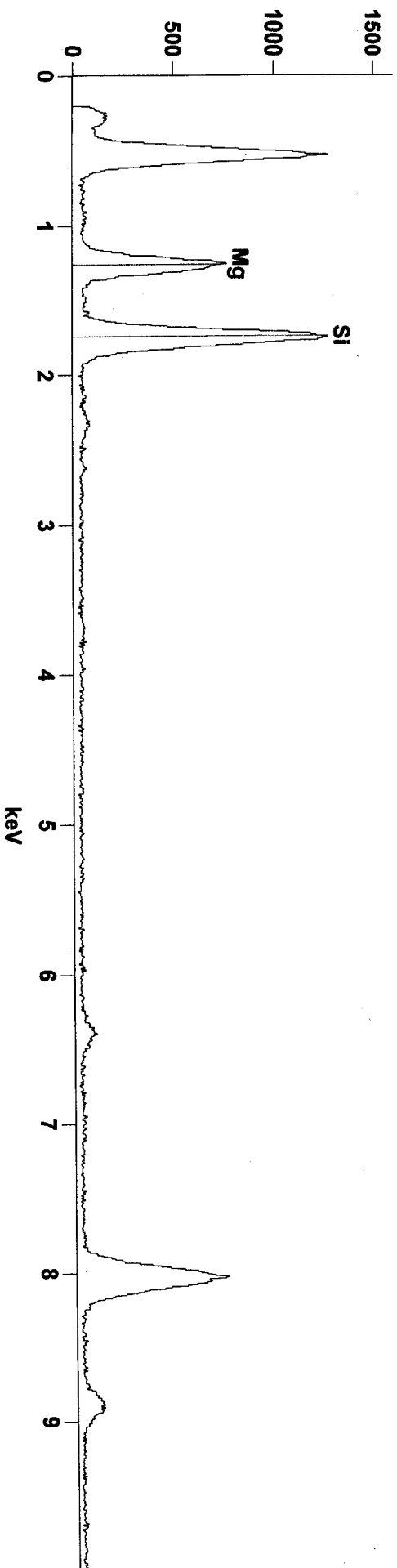
SAMPLE NO: SSAL6-02-0.33 BPC X 9,200

Grid	Grid Opening	Number of structures	Number of structures	Class	Type of Structure	Width	Length	Comments
		primary	Total			Mm	Mm	
B	B-3							
	B-6							
	E-4							
	F-1							
	F-4							
	G-1							
	G-4							
	H-1							
	H-4							
	I-1							
C	C-1							
	C-4							
	E-1							
	E-4							
	F-1							
	F-4							
	G-1							
	G-4							
	H-1							
	H-4							
	I-1							
	I-4							
	J-1							
D	D-1							
	E-1							
	E-4							
	F-1							
	F-4							
	G-1							
	G-4							
	H-1							
	H-4							
	I-1							

F 3.1- 6.5 Nonash at present.

Full scale counts: 1473

EDS CALIBRATION-H600B8-18-10RS



Wed Aug 18 06:44:50 2010
 Gaussian Fit With Standards Chi Squared:3.257
 Correction Method: Cliff-Lorimer (MBTS) w/o Absorbance

Live Time:112.4 sec.
 Acc.Voltage: 100.0 kV
 Take Off Angle: 35.0 deg.
 Detector: Det B- Quantum

Quantitative Results

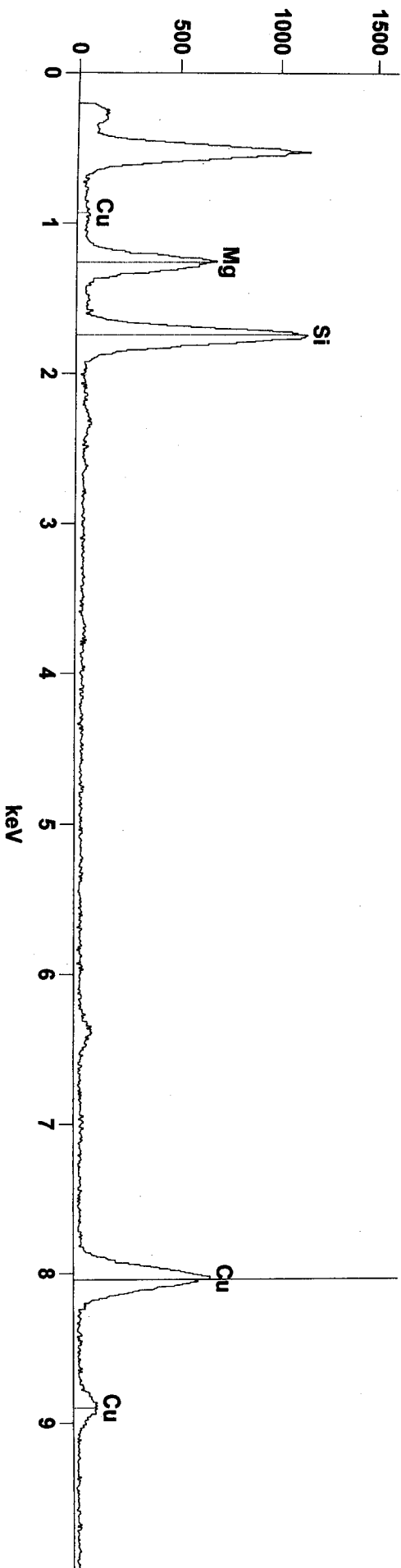
EDS CALIBRATION-H600B8-18-10RS

Element Line	Net Counts	Weight %	Weight % Error	Atom %	Atom % Error
Mg K	8616	50.57	---	54.18	+/- 0.64
Si K	16001	49.43	---	45.82	+/- 0.40
Total		100.00		100.00	

Full scale counts: 1473

EDS CALIBRATION-H600B8-18-10RS

Cursor: 8.042 keV
590 Counts



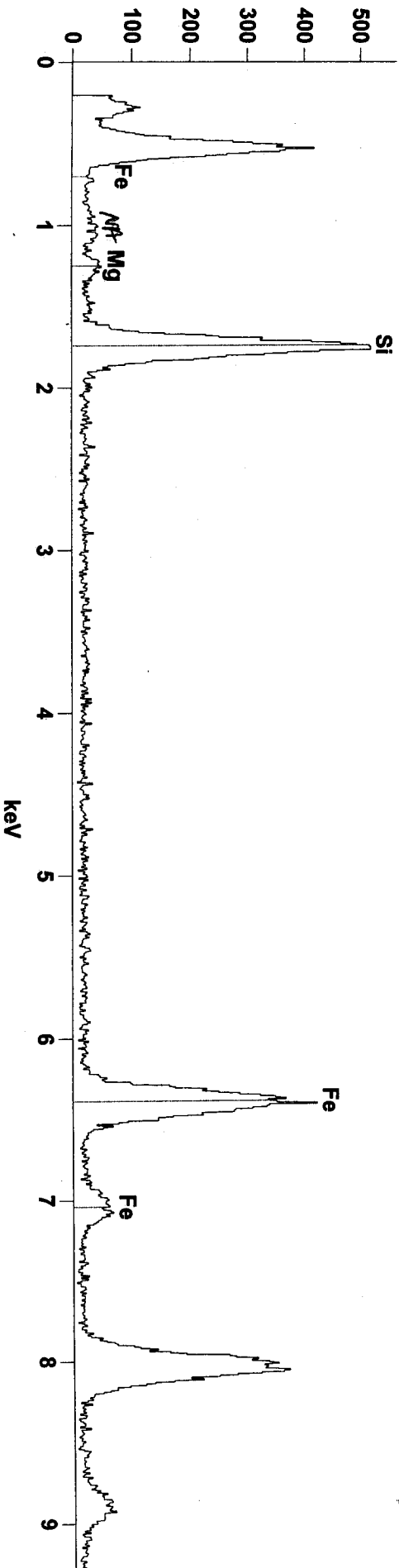
Chi Squared: 0.000

Quantitative results are unavailable for EDS CALIBRATION-H600B8-18-10RS.

Live Time: 96.3 sec.
Acc. Voltage: 100.0 kV
Take Off Angle: 35.0 deg.
Detector: Det B- Quantum

Full scale counts: 520

EDS CALIBRATION-H600B8-18-10-CROCI.



Wed Aug 18 06:34:08 2010
 Gaussian Fit With Standards Chi Squared:7.894
 Correction Method: Cliff-Lorimer (MBTS) w/o Absorbance

Live Time:56.4 sec.
 Acc.Voltage: 100.0 kV
 Take Off Angle: 35.0 deg.
 Detector: Det B- Quantum

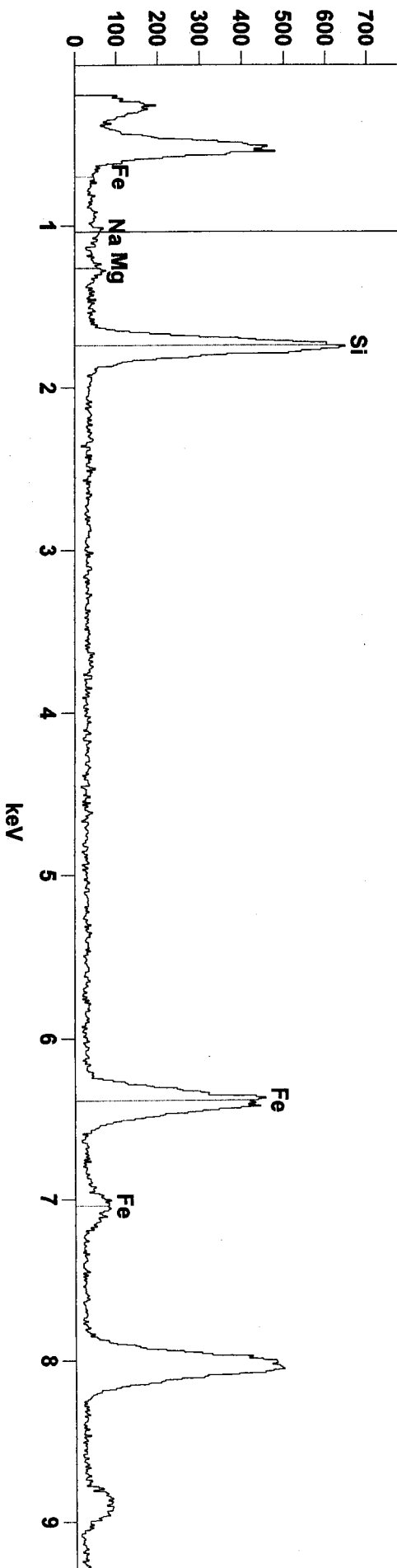
Quantitative Results EDS CALIBRATION-H600B8-18-10-CROCI.

Element Line	Net Counts	Weight %	Weight % Error	Atom %	Atom % Error
Mg K	247	3.05	---	4.87	+/- 0.51
Si K	6208	40.29	---	55.72	+/- 0.75
Fe K	6717	56.67	---	39.41	+/- 0.52
Total	100.00			100.00	

Full scale counts: 715

EDS CALIBRATION-H600B8-18-10 CROCI.

Cursor: 1.037 keV
59 Counts



Chi Squared:0.000

Quantitative results are unavailable for EDS CALIBRATION-H600B8-18-10 CROCI..

Live Time:97.0 sec.
Acc.Voltage: 100.0 kV
Take Off Angle: 35.0 deg.
Detector: Det B- Quantum