HOJ Hazmat Testing

REPORT OF
INITIAL TESTING AND INVENTORY RESULTS

HALL OF JUSTICE

211 WEST TEMPLE STREET
LOS ANGELES, CALIFORNIA

Prepared for:

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

Alhambra, California

December 14, 2004

MACTEC Project 4952-04-2862

MACTEC

MACTEC

December 14, 2004

Ms. Alicia Ramos
County of Los Angeles
Department of Public Works
900 South Fremont Street, 5th floor
Alhambra, California 91803-1331

Subject: **Initial Testing and Inventory Results**
Hall of Justice
211 West Temple Street
Los Angeles, California
MACTEC Project 4952-04-2862

Dear Ms. Ramos:

The County of Los Angeles Department of Public Works (DPW) requested that MACTEC Engineering and Consulting, Inc., (MACTEC) assess the conditions within the Hall of Justice to determine if personnel could safely conduct activities within the building to ready the building for further renovation. MACTEC understands these activities to include architectural and engineering assessments; trash, equipment and furniture removal; and chemical and hazardous waste removal.

MACTEC is pleased to submit this investigative report of our assessment of specific hazardous materials, airborne concentrations of specific chemicals and mold, and a chemical and select equipment inventory of materials in the subject building. The work was authorized under Contract Number PW-12746, Work Authorization Number MCP-5 dated September 8, 2004. All work was conducted in accordance with the terms and conditions of Contract Number PW-12746; with MACTEC's proposal number 4952-04-9334 dated June 10, 2004; and on verbal instructions.

MACTEC conducted air monitoring to determine airborne concentrations of asbestos, lead and mold; collected bulk samples and made x-ray fluorescence readings of lead coatings; collected wipe samples of dust for lead analysis; and conducted "micro-vacuum" sampling of dust for asbestos content. In addition to the collection of samples, MACTEC conducted a hazardous materials inventory of chemicals and select equipment present at the Hall of Justice.

We appreciate the opportunity to be of service to you. Please call us if you have any questions or if we may be of further service.

Sincerely,

MACTEC Engineering and Consulting, Inc.

Don E. Harman
Project Manager
California Asbestos Consultant No. 92-0044
Certified Lead Inspector/Assessor No. 10236

Richard Hamaker
Richard Hamaker, CIH
Senior Principal Scientist
California Asbestos Consultant No. 92-0722
Certified Lead Inspector/Assessor No 3387

by CAH with permission

MACTEC Engineering and Consulting, Inc.
200 Citadel Drive • Los Angeles, CA 90040
323-889-5300 • Fax: 323-721-6700

APPENDIX A

LABORATORY RESULTS

NIOSH FIBER COUNT (METHOD 7400, issue 2, A RULES)

Phase Contrast Microscopy of Air Samples

(Aspect Ratio is > 3:1, and >5µm in Length and, count in 20 to 100 fields)

Report No: 96232 **Date Received:** 9-17-04 **Filter Type:** MCE **Filter Area:** 385

Client: MACTEC **Date Analysed:** 9-23-04 **Mag:** 400x **Field Area:** 0.00785MM

Address: 200 CITADEL DRIVE **Date Sampled:** 9/15-17/04 **Project #:** 4952-04-2861 **Filter Size:** 25MM

LOS ANGELES, CA 90040 **Attention:** D HARMAN **File Name:** 96232MACTEC.AIR

Sample I.D.	Fields Counted	Fibers Counted	F/ Sq.mm	Fiber/Filter	Vol (Lit.)	Fibers/CC	LOD	LOQ	ANL.SENT.
001* 1	100	19.5	25	9564	1800.0	**0.0053**	0.0015	0.0171	0.0003
004* 3	100	22	28	10790	1800.0	**0.0060**	0.0015	0.0171	0.0003
007* 4	100	12.5	16	6131	1800.0	**0.0034**	0.0015	0.0171	0.0003
010* 9	100	7.5	10	3678	1800.0	**0.0020**	0.0015	0.0171	0.0003
013* 8	100	14.5	18	7111	1800.0	**0.0040**	0.0015	0.0171	0.0003
016* 7	100	14.5	18	7111	1800.0	**0.0040**	0.0015	0.0171	0.0003
019* 6	100	19.5	25	9564	1800.0	**0.0053**	0.0015	0.0171	0.0003
022* 5	100	21	27	10299	1800.0	**0.0057**	0.0015	0.0171	0.0003
025* B	100	3	4	1471	1800.0	**0.0008**	0.0015	0.0171	0.0003

iw

* initial samples.

LOD = LIMIT OF DETECTION (7 FIBERS/ Sq.mm)

LOQ = LIMIT OF QUANTITATION (80 FIBERS/ Sq.mm)

ANL.SENT = ANALYTICAL SENSITIVITY (1 FIBER/100)

N.A. = NOT AVAILABLE N.D. - NONE DETECTED

AIHA Registered Asbestos Analyst

I.D. 7795 CARL BERGMAN

I.D. 2033 JEFF WAN

I.D. 3276 S.AHMAD

B.M. Kolk, Laboratory Director

Interlaboratory Sr is taken as 0.45 Intralaboratory Sr is 0.3

Confidence interval is based on NIOSH 7400 with a subjective coefficient of variability = 0.3

EMS LABORATORIES 117 West Bellevue Dr. / Pasadena, CA 91105-2503 / 626-568-4065 / FAX:626-796-5282

SUBMITTAL FORM/Laboratory Services 96232

PAGE 1 OF 1

TURNAROUND TIME: STD ✓ 48 HR. ___ 24 HR. ___
<8 HR. ___ WKND ___ OTHER: ___

RELINQUISHED BY Don Harmay
TIME / DATE 1415 9/17/04
DATE OF SHIPMENT ___ CARRIER ___
CLIENT P.O. NO. ___
CLIENT JOB/PROJECT ID NO(S). Hos. 4952-04-2861
PACKAGE SHIPPED FROM ___
CLIENT FAX NO. 323-721-6700

CLIENT MACTEC
ADDRESS ___
TELEPHONE (323) 889-5378
CONTACT Don Harmay

RESULTS REQUESTED VIA VERBAL ☐ FAX ☐
(NOTE: Complete written reports will follow all analyses, in addition to any prior transmitted verbal or fax results.)

DATE/TIME OF SAMPLE COLLECTION 9/15 to 9/17
SAMPLE PRESERVATIVES None HOLDING TIMES N/A
NO. OF SAMPLES SENT 9 SAMPLER'S NAME SIGNATURE / PRINTED Scott Campbell
TYPE: ☐ WATER ☐ WASTE WATER ☐ SOIL ☐ FILTER ☐ SORBENT TUBE ☐ IMPINGER ☐ OTHER ___

(FOR EMS ONLY) EMS Sample No.	CLIENT SAMPLE NO.	DESCRIPTION LOCATION	ANALYSIS	VOLUME TIME WEIGHT
96232-1,4,7,10,13	1,4,7,10,13		PCM if readable	
↓ -16,19,22,25	16,19,22,25		than 74oz if not	
			Volume=1800	

96232

(SF 5/00)

FOR EMS ONLY

Laboratory No. ___
Received By [signature] Time 2:20 PM
Date of Package Delivery 09-17-04
Shipping Bill Retained: YES ☐ NONE ☑
Condition of Package on Receipt Good
Condition of Custody Seal None
(NOTE: If the package has sustained substantial damage or the custody seal is broken, stop and contact the project manager and the shipper.)
No. of Samples 9
Chain-of-Custody Signature ___
Date of Acceptance into Sample Bank 09-17-04
Misc. Info. ___
Disposition of Samples EMS

EMS LABORATORIES 117 West Bellevue Drive / Pasadena CA 91105-2503 / 626-568-4065

NIOSH FIBER COUNT (METHOD 7400, issue 2, A RULES)

Phase Contrast Microscopy of Air Samples

(Aspect Ratio is > 3:1, and >5µm in Length and, count in 20 to 100 fields)

Report No: 97283 **Date Received:** 11-18-04 **Filter Type:** MCE **Filter Area:** 385

Client: MACTEC **Date Analysed:** 11-18-04 **Mag:** 400x **Field Area:** 0.00785MM

Address: 200 CITADEL DRIVE **Date Sampled:** 11/16,17/04 **Project #:** HALL OF JUSTICE **Filter Size:** 25MM

LOS ANGELES, CA 90040 **Attention:** D HARMAN **File Name:** 97283MACTEC.AIR

Sample I.D.	Fields Counted	Fibers Counted	F/ Sq.mm	Fiber/Filter	Vol (Lit.)	Fibers/CC	LOD	LOQ	ANL.SENT
001	100	5.5	7	2697	1500.0	**0.0018**	0.0018	0.0205	0.0003
002	100	5	6	2452	1500.0	**0.0016**	0.0018	0.0205	0.0003
003	100	7.5	10	3678	1500.0	**0.0025**	0.0018	0.0205	0.0003
004	100	5.5	7	2697	1500.0	**0.0018**	0.0018	0.0205	0.0003
005	100	8.5	11	4169	1500.0	**0.0028**	0.0018	0.0205	0.0003
006	100	25.5	32	12506	1500.0	**0.0083**	0.0018	0.0205	0.0003
007	100	29.5	38	14468	1500.0	**0.0096**	0.0018	0.0205	0.0003
008	100	95	121	46592	1500.0	**0.031**	0.0018	0.0205	0.0003
009	100	8.5	11	4169	1500.0	**0.0028**	0.0018	0.0205	0.0003
010	100	24	31	11771	1500.0	**0.0078**	0.0018	0.0205	0.0003
011	100	32.5	41	15939	1500.0	**0.0106**	0.0018	0.0205	0.0003
012	100	6	8	2943	1500.0	**0.0020**	0.0018	0.0205	0.0003
013	100	35.5	45	17411	1500.0	**0.0116**	0.0018	0.0205	0.0003
014	100	30.5	39	14959	1500.0	**0.0100**	0.0018	0.0205	0.0003
015	100	53	68	25994	1500.0	**0.017**	0.0018	0.0205	0.0003
016	100	64	82	31389	1500.0	**0.021**	0.0018	0.0205	0.0003

LOD = LIMIT OF DETECTION (7 FIBERS/ Sq.mm)

LOQ = LIMIT OF QUANTITATION (80 FIBERS/ Sq.mm)

ANL.SENT = ANALYTICAL SENSITIVITY (1 FIBER/100)

N.A. = NOT AVAILABLE N.D. - NONE DETECTED

AIHA Registered Asbestos Analyst

I.D. 7795 CARL BERGMAN

I.D. 2033 JEFF WAN

I.D. 3276 S.AHMAD

B.M. Kolk, Laboratory Director

Interlaboratory Sr is taken as 0.45 Intralaboratory Sr is 0.3 Confidence interval is based on NIOSH 7400 with a subjective coefficient of variability = 0.3

EMS LABORATORIES 117 West Bellevue Dr. / Pasadena, CA 91105-2503 / 626-568-4065 / FAX:626-796-5282

SUBMITTAL FORM/*Laboratory Services*

PAGE ___ OF ___

TURNAROUND TIME: STD ___ 48 HR. ___ 24 HR. X
<8 HR. ___ WKND ___ OTHER: ___

- CLIENT ___
- ADDRESS ___
- TELEPHONE ___
- CONTACT ___

- RELINQUISHED BY ___
- TIME / DATE ___
- DATE OF SHIPMENT ___ CARRIER ___
- CLIENT P.O. NO. ___
- CLIENT JOB/PROJECT ID NO(S). ___
- PACKAGE SHIPPED FROM ___

- RESULTS REQUESTED VIA VERBAL ☐ FAX ☒
- CLIENT FAX NO. ___

(NOTE: Complete written reports will follow all analyses, in addition to any prior transmitted verbal or fax results.)

- DATE/TIME OF SAMPLE COLLECTION ___
- SAMPLE PRESERVATIVES ___ HOLDING TIMES N/A
- NO. OF SAMPLES SENT 16 SAMPLER'S NAME ___ (SIGNATURE) / ___ (PRINTED)
- TYPE: ☐ WATER ☐ WASTE WATER ☐ SOIL ☒ FILTER ☐ SORBENT TUBE ☐ IMPINGER ☐ OTHER ___

(FOR EMS ONLY) EMS Sample No.	CLIENT SAMPLE NO.	DESCRIPTION/LOCATION	ANALYSIS	VOLUME/TIME WEIGHT (IF APPLICABLE)
97283-01				
	1			
16	16			

15 lines

(SF 5/00)

FOR EMS ONLY

- Laboratory No. # 97283
- Received By ___ Time ___
- Date of Package Delivery 11-18-04
- Shipping Bill Retained: YES ☐ NONE ☐
- Condition of Package on Receipt ___
- Condition of Custody Seal ___

(NOTE: If the package has sustained substantial damage or the custody seal is broken, stop and contact the project manager and the shipper.)

- No. of Samples 16
- Chain-of-Custody Signature ___
- Date of Acceptance into Sample Bank 11-18-04
- Misc. Info. ___
- Disposition of Samples ___

SUBMITTAL FORM/*Laboratory Services* 97384

PAGE 1 OF 1

TURNAROUND TIME: STD ____ 48 HR. ____ 24 HR. ____
<8 HR. X WKND ____ OTHER: ____

RELINQUISHED BY Don E. Harmon
TIME / DATE 11/23

CLIENT MACTEC Eng & Consulting
ADDRESS 200 Citadel Drive
TELEPHONE (323) 889-5378
CONTACT D. Harmon

DATE OF SHIPMENT 11/23 CARRIER ____
CLIENT P.O. NO. ____
CLIENT JOB/PROJECT ID NO(S). 4952-04-2862/01
PACKAGE SHIPPED FROM ____

RESULTS REQUESTED VIA VERBAL ☐ FAX ☒ CLIENT FAX NO. (323) 721-6700
(NOTE: Complete written reports will follow all analyses, in addition to any prior transmitted verbal or fax results.)

DATE/TIME OF SAMPLE COLLECTION 11/19, 11/18
SAMPLE PRESERVATIVES — HOLDING TIMES —
NO. OF SAMPLES SENT 24 SAMPLER'S NAME ____ / ____ (SIGNATURE / PRINTED)
TYPE: ☐ WATER ☐ WASTE WATER ☐ SOIL ☐ FILTER ☐ SORBENT TUBE ☐ IMPINGER ☐ OTHER PCM

(FOR EMS ONLY) EMS Sample No.	CLIENT SAMPLE NO.	DESCRIPTION/LOCATION/ANALYSIS		VOLUME TIME/WEIGHT (IF APPLICABLE)
97384-17-40	17-40	Hall of Justice.	PCM	1500 L
		ASAP per Don dh		

97384

Laboratory No. ____ Received By Crystal Time 10:45 AM
Date of Package Delivery 11-23-04 Shipping Bill Retained: YES ☐ NONE ☒
Condition of Package on Receipt good Condition of Custody Seal none
(NOTE: If the package has sustained substantial damage or the custody seal is broken, stop and contact the project manager and the shipper.)

No. of Samples 24 Chain-of-Custody Signature ____
Date of Acceptance into Sample Bank 11-23-04 Misc. Info. ____
Disposition of Samples EMS

FOR EMS ONLY

NIOSH FIBER COUNT (METHOD 7400, issue 2, A RULES)

Phase Contrast Microscopy of Air Samples

(Aspect Ratio is > 3:1, and >5µm in Length and, count in 20 to 100 fields)

Report No: 97384 **Date Received:** 11-23-04 **Filter Type:** MCE **Filter Area:** 385

Client: MACTEC **Date Analysed:** 11-23-04 **Mag:** 400x **Field Area:** 0.00785MM

Address: 200 CITADEL DRIVE **Date Sampled:** 11/19,18/04 **Project #:** 4952-04-2862/01 **Filter Size:** 25MM

LOS ANGELES, CA 90040 **Attention:** D HARMAN **File Name:** 97384MACTEC.AIR

Sample I.D.	Fields Counted	Fibers Counted	F/ Sq.mm	Fiber/Filter	Vol (Lit.)	Fibers/CC	LOD	LOQ	ANL.SENT.
17	100	9	11	4414	1500.0	**0.0029**	0.0018	0.0205	0.0003
18	100	6.5	8	3188	1500.0	**0.0021**	0.0018	0.0205	0.0003
19	100	4.5	6	2207	1500.0	**0.0015**	0.0018	0.0205	0.0003
20	100	4	5	1962	1500.0	**0.0013**	0.0018	0.0205	0.0003
21	100	26.5	34	12997	1500.0	**0.0087**	0.0018	0.0205	0.0003
22	100	13.5	17	6621	1500.0	**0.0044**	0.0018	0.0205	0.0003
23	100	8	10	3924	1500.0	**0.0026**	0.0018	0.0205	0.0003
24	100	6.5	8	3188	1500.0	**0.0021**	0.0018	0.0205	0.0003
25	100	4	5	1962	1500.0	**0.0013**	0.0018	0.0205	0.0003
26	100	3	4	1471	1500.0	**0.0010**	0.0018	0.0205	0.0003
27	100	5	6	2452	1500.0	**0.0016**	0.0018	0.0205	0.0003
28	100	4.5	6	2207	1500.0	**0.0015**	0.0018	0.0205	0.0003
29	100	5.5	7	2697	1500.0	**0.0018**	0.0018	0.0205	0.0003
30	100	5	6	2452	1500.0	**0.0016**	0.0018	0.0205	0.0003
31	100	8.5	11	4169	1500.0	**0.0028**	0.0018	0.0205	0.0003
32	100	6	8	2943	1500.0	**0.0020**	0.0018	0.0205	0.0003
33	100	8	10	3924	1500.0	**0.0026**	0.0018	0.0205	0.0003
34	100	7	9	3433	1500.0	**0.0023**	0.0018	0.0205	0.0003

LOD = LIMIT OF DETECTION (7 FIBERS/ Sq.mm)

LOQ = LIMIT OF QUANTITATION (80 FIBERS/ Sq.mm)

ANL.SENT = ANALYTICAL SENSITIVITY (1 FIBER/100)

N.A. = NOT AVAILABLE N.D. - NONE DETECTED

AIHA Registered Asbestos Analyst

I.D. 7795 CARL BERGMAN

I.D. 2033 JEFF WAN

I.D. 3276 S.AHMAD

B.M. Kolk, Laboratory Director

Interlaboratory Sr is taken as 0.45 Intralaboratory Sr is 0.3 Confidence interval is based on NIOSH 7400 with a subjective coefficient of variability = 0.3

EMS LABORATORIES 117 West Bellevue Dr. / Pasadena, CA 91105-2503 / 626-568-4065 / FAX:626-796-5282

NIOSH FIBER COUNT (METHOD 7400, issue 2, A RULES)

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(Aspect Ratio is > 3:1, and >5µm in Length and, count in 20 to 100 fields)

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Client: MACTEC **Date Analysed:** 11-23-04 **Mag:** 400x **Field Area:** 0.00785MM

Address: 200 CITADEL DRIVE **Date Sampled:** 11/19,18/04 **Project #:** 4952-04-2862/01 **Filter Size:** 25MM

LOS ANGELES, CA 90040 **Attention:** D HARMAN **File Name:** 97384MACTEC.AIR1

Sample I.D.	Fields Counted	Fibers Counted	F/ Sq.mm	Fiber/Filter	Vol (Lit.)	Fibers/CC	LOD	LOQ	ANL.SENT.
35	100	2	3	981	1500.0	**0.0007**	0.0018	0.0205	0.0003
36	100	6	8	2943	1500.0	**0.0020**	0.0018	0.0205	0.0003
37	100	6.5	8	3188	1500.0	**0.0021**	0.0018	0.0205	0.0003
38	100	7	9	3433	1500.0	**0.0023**	0.0018	0.0205	0.0003
39	100	3	4	1471	1500.0	**0.0010**	0.0018	0.0205	0.0003
40	100	4	5	1962	1500.0	**0.0013**	0.0018	0.0205	0.0003

LOD = LIMIT OF DETECTION (7 FIBERS/ Sq.mm)

LOQ = LIMIT OF QUANTITATION (80 FIBERS/ Sq.mm)

ANL.SENT = ANALYTICAL SENSITIVITY (1 FIBER/100)

N.A. = NOT AVAILABLE N.D. - NONE DETECTED

AIHA Registered Asbestos Analyst

I.D. 7795 CARL BERGMAN

I.D. 2033 JEFF WAN

I.D. 3276 S.AHMAD

B.M. Kolk, Laboratory Director

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EMS LABORATORIES 117 West Bellevue Dr. / Pasadena, CA 91105-2503 / 626-568-4065 / FAX:626-796-5282

DATE:	November 29, 2004
CLIENT:	MACTEC 200 Citadel Dr. Los Angeles, CA 90040
ATTENTION:	Don Harman
REFERENCE:	Hall of Justice Asbestos PO# BPO18040461
REPORT NO:	97397
DATE COLLECTED:	11/16, 17/04 by Don Harman
TEM Requested:	11/23/04 at 1545
DATE ANALYZED:	11/24/04
SUBJECT:	ANALYSIS OF AIR SAMPLES BY TRANSMISSION ELECTRON MICROSCOPY
ACCREDITED:	National Institute of Standards and Technology through NVLAP (101218)

The samples were identified as: 008, 011, 013 to 016. The samples were previously analyzed by PLM. (See Report No. 97283)

The air samples were analyzed by the method described in NIOSH 7402, Issue #2, 15 August 1994, for asbestos fibers in the PCM equivalent range.

The results of the analyses and the detection limits are summarized on the following pages.

Respectfully submitted,

EMS LABORATORIES, INC.

B. M. Kolk
Laboratory Director

BMK/ah

NOTE: The results of the analysis are based upon the samples submitted to the laboratory. No representation is made regarding the sampling area other than that implied by the analytical results for the immediate vicinity of the samples analyzed as calculated from the data presented with those samples.
This report, from a NIST laboratory through NVLAP, must not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government.

Any deviation or exclusion from the test method is noted in this cover letter.
Unless otherwise noted in this cover letter, the samples were received properly packaged, clearly identified and intact.

MACTEC

FACSIMILE TRANSMITTAL SHEET

TO: Nicki
COMPANY:
PHONE:
FAX: (626) 796-5282
SUBJECT: 7402
 # PAGES: 1
(incl Cover)

FROM: Don E. Harman
DATE:
PHONE: (323)889-5378
FAX: (323)721-6700
Hard Copy to Follow?: ☐ Yes ☐ No
COPIES:

COMMENTS:

The following for 7402. Report No 97283

008
011
013
014
015
016

ASAP.

** TOTAL PAGE.01 **

SUBMITTAL FORM/*Laboratory Services*

PAGE 1 OF 1

TURNAROUND TIME: STD ____ 48 HR. ____ 24 HR. ____
<8 HR. ____ WKND ____ OTHER: 1 DAY

RELINQUISHED BY Via fax
TIME / DATE 11-23-01

CLIENT MACTEC
ADDRESS ____
TELEPHONE 323-889-5338
CONTACT Don Hermann

DATE OF SHIPMENT ____ CARRIER fax
CLIENT P.O. NO. ____
CLIENT JOB/PROJECT ID NO(S). ____
PACKAGE SHIPPED FROM ____

RESULTS REQUESTED VIA VERBAL ☐ FAX ☒ CLIENT FAX NO. 323-721-6700
(NOTE: Complete written reports will follow all analyses, in addition to any prior transmitted verbal or fax results.)

DATE/TIME OF SAMPLE COLLECTION ____
SAMPLE PRESERVATIVES ____ HOLDING TIMES ____
NO. OF SAMPLES SENT 6 SAMPLER'S NAME ____ (SIGNATURE / PRINTED)
TYPE: ☐ WATER ☐ WASTE WATER ☐ SOIL ☐ FILTER ☐ SORBENT TUBE ☐ IMPINGER ☐ OTHER ____

(FOR EMS ONLY) EMS Sample No.	CLIENT SAMPLE NO.	DESCRIPTION/LOCATION/ANALYSIS	VOLUME, TIME, WEIGHT (IF APPLICABLE)
97397-09	008	TSM	
-11	011		
-13	013		
-14	014		
-15	015		
-16	016		
		(Mail to 97283)	

97397

Laboratory No. ____ Received By ____ Time 3:45 pm
Date of Package Delivery 11-23-01 Next Condition of Package on Receipt In house Condition of Custody Seal None
Shipping Bill Retained: YES ☐ NONE ☒
(NOTE: If the package has sustained substantial damage or the custody seal is broken, stop and contact the project manager and the shipper.)

No. of Samples 6 Chain-of-Custody Signature ____
Date of Acceptance into Sample Bank 11-23-01 Misc. Info. ____
Disposition of Samples EMS

FOR EMS ONLY (5/00)

RESULTS OF AIR FILTER ANALYSIS *by TEM for Asbestos Structures*

▶EMS Laboratory No. 97397
▶Client Mactec ▶Date Received 11/23/04 ▶Verbal Results
▶Location ▶Date Analyzed 11/24/04 ▶Fax Results

DIRECT PREP ☒
INDIRECT PREP ☐

ASPECT RATIO
3:1 ☒
5:1 ☐

STRUCTURE SIZE
All Sizes (EPA) ☐ ≥5 µm Length ☐
≥0.5 µm Length ☐ PCM Range* ☒
≥5 µm Length ☐ *(≥0.25 µm Width, ≥5.0 µm Length)

Sample Identification	Volume(L)	Mass/m³ (ng/m³)	Structures/mm²	Structure/cc	95% CONFIDENCE LEVELS Analytical Sensitivity	Lower Limit	Upper Limit
8	1500	-	N.D.	N.D.	0.0007	0	0.003
11	1500	-	N.D.	N.D.	0.0007	0	0.003
13	1500	-	N.D.	N.D.	0.0007	0	0.003
14	1500	-	N.D.	N.D.	0.0007	0	0.003
15	1500	-	N.D.	N.D.	0.0007	0	0.003
16	1500	-	N.D.	N.D.	0.0007	0	0.003

TEM - 3A (02-04)

☐ "Asbestos-Containing Materials in Schools," U.S. EPA final rule, 40 CFR Part 763, October 30, 1987 (AHERA) counting rules.
☐ "Methodology for the Measurement of Airborne Asbestos by Electron Microscopy," USEPA 1984 (Yamate, et. al., 1984)
☒ PCM equivalent range by the method described in NIOSH 7402, Issue #2, 15 August 1994.
Comments

EMS LABORATORIES 117 West Bellevue Drive / Pasadena, CA 91105-2503 / 626-568-4065 / Fax: 626-796-5282

TEM ASBESTOS AIR REPORT

CLIENT: Mactec
EMS NO: 97397
FILTER TYPE AND AREA (mm^2): MCE 385
VOLUME OF AIR: 1500 L
METHOD OF ANALYSIS: NIOSH 7402- PCM Range

SAMPLE DESCRIPTION: 8
RECEIVED: 11/23/04 ANALYZED: 11/24/04
AREA OF SAMPLE ANALYZED (mm^2): 0.372
GRID OPENING AREA (mm^2): 0.0093
SCREEN MAGNIFICATION: 9,100/9,400X

ASBESTOS STRUCTURE DESCRIPTION	COUNTED IN TEM			CALCULATED VALUE
Total Number of Fibers				
Total Chrysotile Fibers	N.D.			N.D. /cc
Mass (ng)	N.D.			N.D. ng/m^3
Fiber Length: Range(um)	N.D. -	N.D.	*MEAN*	N.D. um
Fiber Diameter: Range(um)	N.D. -	N.D.	*MEAN*	N.D. um
Aspect Ratio: Range	N.D. -	N.D.	*MEAN*	N.D.
Fibers <5um/ Fibers >=5um	N.D. /	N.D.	N.D. / N.D.	/cc
Total Amphibole Fibers	N.D.		N.D.	/cc
Mass (ng)	N.D.		N.D.	ng/m^3
Fiber Length: Range(um)	N.D. -	N.D.	*MEAN*	N.D. um
Fiber Diameter: Range(um)	N.D. -	N.D.	*MEAN*	N.D. um
Aspect Ratio: Range	N.D. -	N.D.	*MEAN*	N.D.
Fibers <5um/ Fibers >=5um	N.D. /	N.D.	N.D. / N.D.	/cc
Total Number of Asbestos Bundles	N.D.			N.D. /cc
Mass (ng)	N.D.			N.D. ng/m^3
Total Number of Asbestos Cluster Clumps	N.D.			N.D. /cc
Mass (ng)	N.D.			N.D. ng/m^3
Total Number of Asbestos Matrix/Debris	N.D.			N.D. /cc
Mass (ng)	N.D.			N.D. ng/m^3
TOTAL NUMBER OF ASBESTOS STRUCTURES	N.D.			N.D. /cc
Chrysotile	N.D.			N.D. /cc
Amphibole	N.D.			N.D. /cc
Crocidolite	N.D.			N.D. /cc
Tremolite	N.D.			N.D. /cc
Amosite	N.D.			N.D. /cc
Anthophyllite	N.D.			N.D. /cc
Actinolite	N.D.			N.D. /cc
TOTAL NUMBER OF ASBESTOS FIBERS AND BUNDLES	N.D.			N.D. /cc
TOTAL NUMBER OF ASBESTOS STRUCTURES	N.D.			N.D. /cc
Sensitivity Level(Structures/cc)				0.0007
Lower 95% Confidence Limit(Structures/cc)				0
Upper 95% Confidence Limit(Structures/cc)				0.003
TOTAL MASS OF ASBESTOS STRUCTURES(ng)	N.D.			N.D. ng/m^3
TOTAL NUMBER OF UNIDENTIFIED STRUCTURES	N.D.			N.D. /cc
ASBESTOS STRUCTURES/mm^2	N.D.			

COMMENTS: MODERATE TO HEAVY DEBRIS

* TEM data is accurate to no more than one significant figure.

TEM ASBESTOS ANALYSIS

EMS Lab No. 97397
Client MACTEC
Sample No. 008

RECEIVING

METHOD OF ANALYSIS
EPA Yamate Level I ☐
Level II ☐
Level III ☐
AHERA ☐
ASPECT RATIO 3:1 ☑ 5:1 ☐

LENGTHS
All Sizes (EPA) ☐
(µm) : ≥ 0.5 ☐
(µm) : > 5.0 ☐
(µm) : > 10.0 ☐
PCM Range* ☑
*(>0.25 µm width, >5.0 µm length)

TYPE OF SAMPLE
Air ☑
Soil ☐
Bulk ☐
Water ☐
Wipe ☐
Other ☐
Dust/Microvac ☐

LTER TYPE/AREA (mm²)
MCE/385 ☑
MCE/314 ☐
MCE/1017 ☐
Other ☐

PORE SIZE
0.45 µm ☐
0.8 µm ☑
0.1 µm ☐
0.22 µm ☐
Other ☐

G.O. Area (mm²) 0.093
No. of G.O. to Analyze 40

PREP
DIRECT PREP ☐
INDIRECT PREP ☐
Volume 1200 liters
Working Volume _____ ml
Weight _____ grams
Ashed Area _____ %
Date 11-23-04
Prepared By

ANALYSIS
Grid Address A
Screen Magnification 9700 X
Camera Constant 38.4
Accelerating Voltage 100 KV
Beam Current 10 µA
Analyst C KOLK Date 11-23-04

Page 1 of 1

MICROSCOPE
H600A - Serial No. 542-36-01 ☐
H600B - Serial No. 542-05-06 ☑
H600C - Serial No. 542-24-03 ☐

A

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
C5	NSD																
C23	NSD																
C26	NSD																
C24	NSD																
E22	NSD																
E26	NSD																
E23	NSD																
E25	NSD																
F23	NSD																
F26	NSD																
F31	NSD																
F34	NSD																
E21	NSD																
E56	NSD																

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☑ Very Light ☐ Light ☐ Moderate ☑ Heavy ☑ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☑ Good ☐ Scrappy ☐ Undissolved Filter ☐ Folded ☐

TEM - 2A (8-01)

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TEM ASBESTOS ANALYSIS

EMS Lab No. 04-1347

Client MACTEC

Sample No. 0008

RECEIVING

ANALYSIS

Page 1 of 1

MICROSCOPE

Grid Address B

Screen Magnification 12K

Camera Constant 28.4

Accelerating Voltage 100 KV

Beam Current 10 µA

H600A – Serial No. 542-36-01 ☐

xH600B – Serial No. 542-05-06 ☑

H600C – Serial No. 542-24-03 ☐

Analyst [illegible] Date 11-24-04

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
B3	6	NSD															
C3	6	NSD															
E3	6	NSD															
C4	1	NSD															
C4	4	NSD															
G4	3	NSD															
F4	3	NSD															
F5	1	NSD															
G5	1	NSD															
F5	2	NSD															
E5	6	NSD															
C5	6	NSD															
C4	1	NSD															
C5	1	NSD															

16 Lines

OBSERVATIONS:

Clean ☐

Debris: ☑ Very Light ☐ Light ☐ Moderate ☑ Heavy ☐ Very Heavy ☐

Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐

Condition of the Grid: ☑ Good ☑ Scrappy ☐ Undissolved Filter ☐ Folded ☐

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TEM - 2B (8-01)

TEM ASBESTOS ANALYSIS

EMS Lab No. 47397
Client MACTEC
Sample No. 008

RECEIVING

ANALYSIS

Page [redacted] of [redacted]

MICROSCOPE

Grid Address C
Screen Magnification CNEX
Camera Constant 5.4
Accelerating Voltage 100 KV
Beam Current 10 µA

H600A – Serial No. 542-36-01 ☐
H600B – Serial No. 542-05-06 ☒
H600C – Serial No. 542-24-03 ☐

Analyst [signature] Date 11-22-04

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
C46	NSD																
E43	NSD																
E46	NSD																
F43	NSD																
G41	NSD																
G44	NSD																
H41	NSD																
H44	NSD																
G51	NSD																
G54	NSD																
G56	NSD																
H51	NSD																

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☐ Very Light ☐ Light ☐ Moderate ☒ Heavy ☒ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☐ Good ☐ Scrappy ☐ Undissolved Filter ☐ Folded ☐

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TEM ASBESTOS AIR REPORT

CLIENT: Mactec
EMS NO: 97397
FILTER TYPE AND AREA (mm^2): MCE 385
VOLUME OF AIR: 1500 L
METHOD OF ANALYSIS: NIOSH 7402- PCM Range

SAMPLE DESCRIPTION: 11
RECEIVED: 11/23/04 ANALYZED: 11/24/04
AREA OF SAMPLE ANALYZED (mm^2): 0.372
GRID OPENING AREA (mm^2): 0.0093
SCREEN MAGNIFICATION: 9,100/9,400X

ASBESTOS STRUCTURE DESCRIPTION	COUNTED IN TEM			CALCULATED VALUE	
Total Number of Fibers					
Total Chrysotile Fibers	N.D.			N.D.	/cc
Mass (ng)	N.D.			N.D.	ng/m^3
Fiber Length: Range(um)	N.D. -	N.D.	*MEAN*	N.D.	um
Fiber Diameter: Range(um)	N.D. -	N.D.	*MEAN*	N.D.	um
Aspect Ratio: Range	N.D. -	N.D.	*MEAN*	N.D.	
Fibers <5um/ Fibers >=5um	N.D. /	N.D.	N.D. / N.D.		/cc
Total Amphibole Fibers	N.D. *			N.D.	/cc
Mass (ng)	N.D.			N.D.	ng/m^3
Fiber Length: Range(um)	N.D. -	N.D.	*MEAN*	N.D.	um
Fiber Diameter: Range(um)	N.D. -	N.D.	*MEAN*	N.D.	um
Aspect Ratio: Range	N.D. -	N.D.	*MEAN*	N.D.	
Fibers <5um/ Fibers >=5um	N.D. /	N.D.	N.D. / N.D.		/cc
Total Number of Asbestos Bundles	N.D.			N.D.	/cc
Mass (ng)	N.D.			N.D.	ng/m^3
Total Number of Asbestos Cluster Clumps	N.D.			N.D.	/cc
Mass (ng)	N.D.			N.D.	ng/m^3
Total Number of Asbestos Matrix/Debris	N.D.			N.D.	/cc
Mass (ng)	N.D.			N.D.	ng/m^3
TOTAL NUMBER OF ASBESTOS STRUCTURES	N.D.			N.D.	/cc
Chrysotile	N.D.			N.D.	/cc
Amphibole	N.D.			N.D.	/cc
Crocidolite	N.D.			N.D.	/cc
Tremolite	N.D.			N.D.	/cc
Amosite	N.D.			N.D.	/cc
Anthophyllite	N.D.			N.D.	/cc
Actinolite	N.D.			N.D.	/cc
TOTAL NUMBER OF ASBESTOS FIBERS AND BUNDLES	N.D.			N.D.	/cc
TOTAL NUMBER OF ASBESTOS STRUCTURES	N.D.			N.D.	/cc
Sensitivity Level(Structures/cc)				0.0007	
Lower 95% Confidence Limit(Structures/cc)				0	
Upper 95% Confidence Limit(Structures/cc)				0.003	
TOTAL MASS OF ASBESTOS STRUCTURES(ng)	N.D.			N.D.	ng/m^3
TOTAL NUMBER OF UNIDENTIFIED STRUCTURES	N.D.			N.D.	/cc
ASBESTOS STRUCTURES/mm^2	N.D.				

COMMENTS: MODERATE TO HEAVY DEBRIS

* TEM data is accurate to no more than one significant figure.

TEM ASBESTOS ANALYSIS

EMS Lab No. 97397

Client MACTEC

Sample No. 011

RECEIVING

METHOD OF ANALYSIS
- EPA Yamate Level I ☐
- Level II ☐
- Level III ☐
- AHERA ☐
- ASPECT RATIO 3:1 ☑ 5:1 ☐

LENGTHS
- All Sizes (EPA) ☐
- (µm) : ≥ 0.5 ☐
- (µm) : > 5.0 ☐
- (µm) : > 10.0 ☐
- PCM Range* ☑
  *(>0.25 µm width, >5.0 µm length)

PREP

TYPE OF SAMPLE
- Air ☑
- Soil ☐
- Bulk ☐
- Water ☐
- Wipe ☐
- Other ☐
- Dust/Microvac ☐

FILTER TYPE/AREA (mm²)
- MCE/385 ☐
- MCE/314 ☐
- MCE/1017 ☐
- Other ☐

PORE SIZE
- 0.45 µm ☐
- 0.8 µm ☑
- 0.1 µm ☐
- 0.22 µm ☐
- Other ☐

G.O. Area (mm²) 0.0 093

No. of G.O. to Analyze 46

DIRECT PREP ☑

INDIRECT PREP ☐

Volume 1500 liters

Working Volume _____ ml

Weight _____ grams

Ashed Area _____ %

Date 11-23-04

Prepared By [illegible]

ANALYSIS

Grid Address A

Screen Magnification 9700 X

Camera Constant 2814

Accelerating Voltage 100 KV

Beam Current 10 µA

Analyst [illegible] Date 11-23-04

MICROSCOPE
- H600A - Serial No. 542-36-01 ☐
- H600B - Serial No. 542-05-06 ☑
- H600C - Serial No. 542-24-03 ☐

A

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
C31	NSD																
C34	NSD																
C21	NSD																
E34	NSD																
E1	NSD																
E24	NSD																
E3	NSD																
E36	NSD																
B41	NSD																
B46	NSD																
E5	NSD																
E46	NSD																
E51	NSD																
E54	NSD																

16 Lines

OBSERVATIONS:

Clean ☐					
Debris: ☑	Very Light ☐	Light ☐	Moderate ☑	Heavy ☐	Very Heavy ☐
Gypsum: ☐	Very Light ☐	Light ☐	Moderate ☐	Heavy ☐	Very Heavy ☐
Condition of the Grid: ☐	Good ☑	Scrappy ☐	Undissolved Filter ☐	Folded ☐	

TEM - 2A (8-01)

TEM ASBESTOS ANALYSIS

EMS Lab No. 47397
Client MACTEC
Sample No. 01

RECEIVING

ANALYSIS

Page [illegible] of [illegible]

MICROSCOPE

Grid Address B
Screen Magnification 7500 x
Camera Constant 25.0
Accelerating Voltage 100 KV
Beam Current 10 µA

H600A – Serial No. 542-36-01 ☐
H600B – Serial No. 542-05-06 ☐
H600C – Serial No. 542-24-03 ☐

Analyst LGOLK Date 1-24-04

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
C5	4	NSD															
C6	1	NSD															
C6	2	NSD															
C6	4	NSD															
C6	3	NSD															
E6	1	NSD															
G4	1	NSD															
E5	3	NSD															
C6	4	NSD															
B4	1	NSD															
C2	2	NSD															
E2	3	NSD															
E2	6	NSD															
G2	6	NSD															

16 Lines

OBSERVATIONS:

Clean ☐

Debris: ☐	Very Light ☐	Light ☐	Moderate ☐	Heavy ☐	Very Heavy ☐
Gypsum: ☐	Very Light ☐	Light ☐	Moderate ☐	Heavy ☐	Very Heavy ☐
Condition of the Grid: ☐	Good ☐	Scrappy ☐	Undissolved Filter ☐	Folded ☐	

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TEM ASBESTOS ANALYSIS

EMS Lab No. 97577

Client MACTEC

Sample No. 01

RECEIVING

ANALYSIS

Page [ ] of [ ]

MICROSCOPE

Grid Address C

Screen Magnification 1000 x

Camera Constant 28.4

Accelerating Voltage 100 KV

Beam Current 10 µA

H600A – Serial No. 542-36-01 ☐

H600B – Serial No. 542-05-06 ☒

H600C – Serial No. 542-24-03 ☐

Analyst CKoul Date 11-23-01

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
F3	NSD																
F5	NSD																
G3	NSD																
G4	NSD																
F3	NSD																
G4	NSD																
F6	NSD																
F4	NSD																
G4	NSD																
F1	NSD																
H4	NSD																
G5	NSD																

16 Lines

OBSERVATIONS:

Clean ☐

Debris: ☒ Very Light ☐ Light ☐ Moderate ☒ Heavy ☒ Very Heavy ☐

Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐

Condition of the Grid: ☐ Good ☒ Scrappy ☐ Undissolved Filter ☐ Folded ☐

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TEM ASBESTOS AIR REPORT

CLIENT: Mactec
EMS NO: 97397
FILTER TYPE AND AREA (mm^2): MCE 385
VOLUME OF AIR: 1500 L
METHOD OF ANALYSIS: NIOSH 7402- PCM Range

SAMPLE DESCRIPTION: 13
RECEIVED: 11/23/04 ANALYZED: 11/24/04
AREA OF SAMPLE ANALYZED (mm^2): 0.372
GRID OPENING AREA (mm^2): 0.0093
SCREEN MAGNIFICATION: 9,100/9,400X

ASBESTOS STRUCTURE DESCRIPTION	COUNTED IN TEM		CALCULATED VALUE	
Total Number of Fibers				
Total Chrysotile Fibers	N.D.		N.D.	/cc
Mass (ng)	N.D.		N.D.	ng/m^3
Fiber Length: Range(um)	N.D. - N.D.	*MEAN*	N.D.	um
Fiber Diameter: Range(um)	N.D. - N.D.	*MEAN*	N.D.	um
Aspect Ratio: Range	N.D. - N.D.	*MEAN*	N.D.	
Fibers <5um/ Fibers >=5um	N.D. / N.D.		N.D. / N.D.	/cc
Total Amphibole Fibers	N.D.		N.D.	/cc
Mass (ng)	N.D.		N.D.	ng/m^3
Fiber Length: Range(um)	N.D. - N.D.	*MEAN*	N.D.	um
Fiber Diameter: Range(um)	N.D. - N.D.	*MEAN*	N.D.	um
Aspect Ratio: Range	N.D. - N.D.	*MEAN*	N.D.	
Fibers <5um/ Fibers >=5um	N.D. / N.D.		N.D. / N.D.	/cc
Total Number of Asbestos Bundles	N.D.		N.D.	/cc
Mass (ng)	N.D.		N.D.	ng/m^3
Total Number of Asbestos Cluster Clumps	N.D.		N.D.	/cc
Mass (ng)	N.D.		N.D.	ng/m^3
Total Number of Asbestos Matrix/Debris	N.D.		N.D.	/cc
Mass (ng)	N.D.		N.D.	ng/m^3
TOTAL NUMBER OF ASBESTOS STRUCTURES	N.D.		N.D.	/cc
Chrysotile	N.D.		N.D.	/cc
Amphibole	N.D.		N.D.	/cc
Crocidolite	N.D.		N.D.	/cc
Tremolite	N.D.		N.D.	/cc
Amosite	N.D.		N.D.	/cc
Anthophyllite	N.D.		N.D.	/cc
Actinolite	N.D.		N.D.	/cc
TOTAL NUMBER OF ASBESTOS FIBERS AND BUNDLES	N.D.		N.D.	/cc
TOTAL NUMBER OF ASBESTOS STRUCTURES	N.D.		N.D.	/cc
Sensitivity Level(Structures/cc)			0.0007	
Lower 95% Confidence Limit(Structures/cc)			0	
Upper 95% Confidence Limit(Structures/cc)			0.003	
TOTAL MASS OF ASBESTOS STRUCTURES(ng)	N.D.		N.D.	ng/m^3
TOTAL NUMBER OF UNIDENTIFIED STRUCTURES	N.D.		N.D.	/cc
ASBESTOS STRUCTURES/mm^2	N.D.			

COMMENTS: MODERATE TO HEAVY DEBRIS

* TEM data is accurate to no more than one significant figure.

TEM ASBESTOS ANALYSIS

EMS Lab No. 97397
Client MACTEC
Sample No. 013

RECEIVING

METHOD OF ANALYSIS
EPA Yamate Level I ☐
Level II ☐
Level III ☐
AHERA ☐
ASPECT RATIO 3:1 ☑ 5:1 ☐

LENGTHS
All Sizes (EPA) ☐
(µm) : ≥ 0.5 ☐
(µm) : > 5.0 ☐
(µm) : > 10.0 ☐
PCM Range* ☑
*(>0.25 µm width, >5.0 µm length)

TYPE OF SAMPLE
Air ☑
Soil ☐
Bulk ☐
Water ☐
Wipe ☐
Other ☐
Dust/Microvac ☐

FILTER TYPE/AREA (mm²)
MCE/385 ☑
MCE/314 ☐
MCE/1017 ☐
Other ☐

PORE SIZE
0.45 µm ☐
0.8 µm ☑
0.1 µm ☐
0.22 µm ☐
Other ☐

G.O. Area (mm²) 0.0 093
No. of G.O. to Analyze 40

PREP

DIRECT PREP ☑
INDIRECT PREP ☐
Volume 400 liters
Working Volume ____ ml
Weight ____ grams
Ashed Area ____ %
Date 11-23-04
Prepared By LK

ANALYSIS

Grid Address A
Screen Magnification 2000 X
Camera Constant 28.4
Accelerating Voltage 100 KV
Beam Current 10 µA
Analyst [illegible] Date 11-23-04

MICROSCOPE
H600A - Serial No. 542-36-01 ☐
H600B - Serial No. 542-05-06 ☑
H600C - Serial No. 542-24-03 ☐

A

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
B3	4	NSD															
C3	1	NSD															
C3	4	NSD															
E3	1	NSD															
E2	4	NSD															
B4	1	NSD															
B4	2	NSD															
C4	1	NSD															
C4	4	NSD															
F2	1	NSD															
F4	1	NSD															
G4	6	NSD															
A3	3	NSD															
F5	2	NSD															

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☑ Very Light ☐ Light ☐ Moderate ☑ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☐ Good ☑ Scrappy ☐ Undissolved Filter ☐ Folded ☐

TEM - 2A (8-01)

TEM ASBESTOS ANALYSIS

EMS Lab No. 97397
Client WACTE
Sample No. 013

RECEIVING

e of

MICROSCOPE

H600A – Serial No. 542-36-01 ☐
xH600B – Serial No. 542-05-06 ☑
H600C – Serial No. 542-24-03 ☐

ANALYSIS

Grid Address B
Screen Magnification 9700 x
Camera Constant 284
Accelerating Voltage 100 KV
Beam Current 10 µA

Analyst LKoch Date 11-24-04

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
E23	NSD																
E26	NSD																
E24	NSD																
G23	NSD																
E43	NSD																
E41	NSD																
F43	NSD																
C54	NSD																
B46	NSD																
C51	NSD																
E54	NSD																
C64	NSD																
G56	NSD																
F57	NSD																

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☑ Very Light ☐ Light ☐ Moderate ☑ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☑ Good ☑ Scrappy ☐ Undissolved Filter ☐ Folded ☐

TEM ASBESTOS ANALYSIS

EMS Lab No. 97397
Client MACTEC
Sample No. 013

RECEIVING

ANALYSIS

MICROSCOPE

Grid Address K
Screen Magnification 9700 x
Camera Constant 28.9
Accelerating Voltage 100 KV
Beam Current 10 µA

H600A – Serial No. 542-36-01 ☐
H600B – Serial No. 542-05-06 ☑
H600C – Serial No. 542-24-03 ☐

Analyst [signature] Date 11-23-00

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
C3	NSD																
E3	NSD																
F3	NSD																
G3	NSD																
H3	NSD																
G3	NSD																
F3	NSD																
H2	NSD																
F3	NSD																
G3	NSD																
E3	NSD																
C56	NSD																

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☑ Very Light ☐ Light ☐ Moderate ☑ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☐ Good ☑ Scrappy ☐ Undissolved Filter ☐ Folded ☐

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TEM ASBESTOS AIR REPORT

CLIENT: Mactec
EMS NO: 97397
FILTER TYPE AND AREA (mm^2): MCE 385
VOLUME OF AIR: 1500 L
METHOD OF ANALYSIS: NIOSH 7402- PCM Range

SAMPLE DESCRIPTION: 14
RECEIVED: 11/23/04 ANALYZED: 11/24/04
AREA OF SAMPLE ANALYZED (mm^2): 0.372
GRID OPENING AREA (mm^2): 0.0093
SCREEN MAGNIFICATION: 9,100/9,400X

ASBESTOS STRUCTURE DESCRIPTION	COUNTED IN TEM	CALCULATED VALUE
Total Number of Fibers		
Total Chrysotile Fibers	N.D.	N.D. /cc
Mass (ng)	N.D.	N.D. ng/m^3
Fiber Length: Range(um)	N.D. - N.D. *MEAN*	N.D. um
Fiber Diameter: Range(um)	N.D. - N.D. *MEAN*	N.D. um
Aspect Ratio: Range	N.D. - N.D. *MEAN*	N.D.
Fibers <5um/ Fibers >=5um	N.D. / N.D.	N.D. / N.D. /cc
Total Amphibole Fibers	N.D.	N.D. /cc
Mass (ng)	N.D.	N.D. ng/m^3
Fiber Length: Range(um)	N.D. - N.D. *MEAN*	N.D. um
Fiber Diameter: Range(um)	N.D. - N.D. *MEAN*	N.D. um
Aspect Ratio: Range	N.D. - N.D. *MEAN*	N.D.
Fibers <5um/ Fibers >=5um	N.D. / N.D.	N.D. / N.D. /cc
Total Number of Asbestos Bundles	N.D.	N.D. /cc
Mass (ng)	N.D.	N.D. ng/m^3
Total Number of Asbestos Cluster Clumps	N.D.	N.D. /cc
Mass (ng)	N.D.	N.D. ng/m^3
Total Number of Asbestos Matrix/Debris	N.D.	N.D. /cc
Mass (ng)	N.D.	N.D. ng/m^3
TOTAL NUMBER OF ASBESTOS STRUCTURES	N.D.	N.D. /cc
Chrysotile	N.D.	N.D. /cc
Amphibole	N.D.	N.D. /cc
Crocidolite	N.D.	N.D. /cc
Tremolite	N.D.	N.D. /cc
Amosite	N.D.	N.D. /cc
Anthophyllite	N.D.	N.D. /cc
Actinolite	N.D.	N.D. /cc
TOTAL NUMBER OF ASBESTOS FIBERS AND BUNDLES	N.D.	N.D. /cc
TOTAL NUMBER OF ASBESTOS STRUCTURES	N.D.	N.D. /cc
Sensitivity Level(Structures/cc)		0.0007
Lower 95% Confidence Limit(Structures/cc)		0
Upper 95% Confidence Limit(Structures/cc)		0.003
TOTAL MASS OF ASBESTOS STRUCTURES(ng)	N.D.	N.D. ng/m^3
TOTAL NUMBER OF UNIDENTIFIED STRUCTURES	N.D.	N.D. /cc
ASBESTOS STRUCTURES/mm^2	N.D.	

COMMENTS: MODERATE DEBRIS

* TEM data is accurate to no more than one significant figure.

TEM ASBESTOS ANALYSIS

EMS Lab No. 97397
Client MMCTEC
Sample No. 014

RECEIVING

METHOD OF ANALYSIS
EPA Yamate Level I ☐
Level II ☐
Level III ☐
AHERA ☐
ASPECT RATIO 3:1 ☑ 5:1 ☐

LENGTHS
All Sizes (EPA) ☐
(µm) : ≥ 0.5 ☐
(µm) : > 5.0 ☐
(µm) : > 10.0 ☑
PCM Range* ☐
*(>0.25 µm width, >5.0 µm length)

PREP

FILTER TYPE/AREA (mm)
MCE/385 ☐
MCE/314 ☐
MCE/1017 ☐
Other ☐

TYPE OF SAMPLE
Air ☑
Soil ☐
Bulk ☐
Water ☐
Wipe ☐
Other ☐
Dust/Microvac ☐

PORE SIZE
0.45 µm ☐
0.8 µm ☑
0.1 µm ☐
0.22 µm ☐
Other ☐

G.O. Area (mm²) 0.0 093
No. of G.O. to Analyze 40

DIRECT PREP ☐
INDIRECT PREP ☑
Volume 1500 liters
Working Volume ____ ml
Weight ____ grams
Ashed Area ____ %
Date 11-23-04
Prepared By LK

ANALYSIS

Grid Address A
Screen Magnification 9700 X
Camera Constant 18.9
Accelerating Voltage 100 KV
Beam Current 10 µA
Analyst LKOLK Date 11-23-04

Page ____ of ____

MICROSCOPE
H600A - Serial No. 542-36-01 ☐
H600B - Serial No. 542-05-06 ☑
H600C - Serial No. 542-24-03 ☐

A

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
E3	1	NSD															
E3	2	NSD															
E3	3	NSD															
E3	4	NSD															
E3	5	NSD															
E3	6	NSD															
E4	1	NSD															
F4	1	PSD															
F4	2	NSD															
G4	1	NSD															
G4	2	NSD															
E5	6	NSD															
E6	1	NSD															
E6	4	NSD															

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☑ Very Light ☐ Light ☐ Moderate ☑ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☑ Good ☑ Scrappy ☐ Undissolved Filter ☐ Folded ☐

TEM - 2A (8-01)

TEM ASBESTOS ANALYSIS

EMS Lab No. 97357
Client MACTEC
Sample No. 014

RECEIVING

ANALYSIS

P f
MICROSCOPE

Grid Address 1-B
Screen Magnification 91400 x
Camera Constant 29.7
Accelerating Voltage 100 KV
Beam Current 10 µA

H600A – Serial No. 542-36-01 ☒
H600B – Serial No. 542-05-06 ☐
H600C – Serial No. 542-24-03 ☐

Analyst NJA Date 11/24/04

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
E6-1	NSD																
C5-4	NSD																
F5-3	NSD																
B5-6	NSD																
B4-6	NSD																
C3-3	NSD																
B3-6	NSD																
B3-3	NSD																
F4-1	NSD																
E4-1	NSD																
E3-3	NSD																
E2-6	NSD																
E2-3	NSD																
B3-4	NSD																

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☒ Very Light ☐ Light ☐ Moderate ☒ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☐ Good ☐ Scrappy ☐ Undissolved Filter ☐ Folded ☐

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TEM ASBESTOS ANALYSIS

EMS Lab No. 97397
Client MACTEC
Sample No. 014

RECEIVING

ANALYSIS

Page ___ of ___

MICROSCOPE

Grid Address C
Screen Magnification 7100 x
Camera Constant 28.4
Accelerating Voltage 100 KV
Beam Current 10 µA

H600A – Serial No. 542-36-01 ☐
H600B – Serial No. 542-05-06 ☑
H600C – Serial No. 542-24-03 ☐

Analyst [illegible] Date 11/30/04

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
B33	1	NSD															
B36	1	NSD															
E31	1	NSD															
E30	1	NSD															
F28	1	NSD															
G31	1	NSD															
G34	1	NSD															
F34	1	NSD															
K41	1	NSD															
K41	1	NSD															
F46	1	NSD															
G56	1	NSD															

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☑ Very Light ☐ Light ☐ Moderate ☑ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☑ Good ☑ Scrappy ☐ Undissolved Filter ☐ Folded ☐

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TEM ASBESTOS AIR REPORT

CLIENT: Mactec
EMS NO: 97397
FILTER TYPE AND AREA (mm^2): MCE 385
VOLUME OF AIR: 1500 L
METHOD OF ANALYSIS: NIOSH 7402- PCM Range

SAMPLE DESCRIPTION: 15
RECEIVED: 11/23/04 ANALYZED: 11/24/04
AREA OF SAMPLE ANALYZED (mm^2): 0.372
GRID OPENING AREA (mm^2): 0.0093
SCREEN MAGNIFICATION: 9,100/9,400X

ASBESTOS STRUCTURE DESCRIPTION	COUNTED IN TEM			CALCULATED VALUE	
Total Number of Fibers					
Total Chrysotile Fibers	N.D.			N.D.	/cc
Mass (ng)	N.D.			N.D.	ng/m^3
Fiber Length: Range(um)	N.D. -	N.D.	*MEAN*	N.D.	um
Fiber Diameter: Range(um)	N.D. -	N.D.	*MEAN*	N.D.	um
Aspect Ratio: Range	N.D. -	N.D.	*MEAN*	N.D.	
Fibers <5um/ Fibers >=5um	N.D. /	N.D.	N.D. / N.D.		/cc
Total Amphibole Fibers	N.D.			N.D.	/cc
Mass (ng)	N.D.			N.D.	ng/m^3
Fiber Length: Range(um)	N.D. -	N.D.	*MEAN*	N.D.	um
Fiber Diameter: Range(um)	N.D. -	N.D.	*MEAN*	N.D.	um
Aspect Ratio: Range	N.D. -	N.D.	*MEAN*	N.D.	
Fibers <5um/ Fibers >=5um	N.D. /	N.D.	N.D. / N.D.		/cc
Total Number of Asbestos Bundles	N.D.			N.D.	/cc
Mass (ng)	N.D.			N.D.	ng/m^3
Total Number of Asbestos Cluster Clumps	N.D.			N.D.	/cc
Mass (ng)	N.D.			N.D.	ng/m^3
Total Number of Asbestos Matrix/Debris	N.D.			N.D.	/cc
Mass (ng)	N.D.			N.D.	ng/m^3
TOTAL NUMBER OF ASBESTOS STRUCTURES	N.D.			N.D.	/cc
Chrysotile	N.D.			N.D.	/cc
Amphibole	N.D.			N.D.	/cc
Crocidolite	N.D.			N.D.	/cc
Tremolite	N.D.			N.D.	/cc
Amosite	N.D.			N.D.	/cc
Anthophyllite	N.D.			N.D.	/cc
Actinolite	N.D.			N.D.	/cc
TOTAL NUMBER OF ASBESTOS FIBERS AND BUNDLES	N.D.			N.D.	/cc
TOTAL NUMBER OF ASBESTOS STRUCTURES	N.D.			N.D.	/cc
Sensitivity Level(Structures/cc)				0.0007	
Lower 95% Confidence Limit(Structures/cc)				0	
Upper 95% Confidence Limit(Structures/cc)				0.003	
TOTAL MASS OF ASBESTOS STRUCTURES(ng)	N.D.			N.D.	ng/m^3
TOTAL NUMBER OF UNIDENTIFIED STRUCTURES	N.D.			N.D.	/cc
ASBESTOS STRUCTURES/mm^2	N.D.				

COMMENTS: MODERATE DEBRIS

* TEM data is accurate to no more than one significant figure.

TEM ASBESTOS ANALYSIS

RECEIVING

EMS Lab No. 97397
Client MACTEC
Sample No. 015

METHOD OF ANALYSIS
- EPA Yamate Level I ☐
- Level II ☐
- Level III ☐
- AHERA ☐
- ASPECT RATIO 3:1 ☑ 5:1 ☐

LENGTHS
- All Sizes (EPA) ☐
- (µm) : ≥ 0.5 ☐
- (µm) : > 5.0 ☐
- (µm) : > 10.0 ☐
- PCM Range* ☑
- *(>0.25 µm width, >5.0 µm length)

TYPE OF SAMPLE
- Air ☑
- Soil ☐
- Bulk ☐
- Water ☐
- Wipe ☐
- Other ☐
- Dust/Microvac ☐

FILTER TYPE/AREA (mm²)
- MCE/385 ☑
- MCE/314 ☐
- MCE/1017 ☐
- Other ___ ☐

PORE SIZE
- 0.45 µm ☐
- 0.8 µm ☑
- 0.1 µm ☐
- 0.22 µm ☐
- Other ☐

G.O. Area (mm²) 0.0 093
No. of G.O. to Analyze 40

PREP

DIRECT PREP ☑
INDIRECT PREP ☐
Volume 1500 liters
Working Volume ___ ml
Weight ___ grams
Ashed Area ___ %
Date 11-22-04
Prepared By LC

ANALYSIS

Grid Address A
Screen Magnification 9750 x
Camera Constant 2.89
Accelerating Voltage 100 KV
Beam Current 10 µA
Analyst K Su
Date 11-23-04

MICROSCOPE
- H600A - Serial No. 542-36-01 ☐
- H600B - Serial No. 542-05-06 ☑
- H600C - Serial No. 542-24-03 ☐

A

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
B34	NSD																
C36	NSD																
C33	NSD																
C36	NSD																
E33	NSD																
E36	NSD																
E44	NSD																
F41	NSD																
F46	NSD																
G46	NSD																
G51	NSD																
H43	NSD																
G56	NSD																
E64	NSD																

16 Lines

OBSERVATIONS:
- Clean ☐
- Debris: ☑ Very Light ☐ Light ☐ Moderate ☑ Heavy ☐ Very Heavy ☐
- Gypsum: ☑ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
- Condition of the Grid: ☐ Good ☑ Scrappy ☐ Undissolved Filter ☐ Folded ☐

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TEM ASBESTOS ANALYSIS

EMS Lab No. 97397
Client MACTEC
Sample No. 015

RECEIVING

ANALYSIS

Pa [redacted] 5

MICROSCOPE

Grid Address B
Screen Magnification 9200x
Camera Constant 28.4
Accelerating Voltage 100 KV
Beam Current 10 µA

H600A – Serial No. 542-36-01 ☐
H600B – Serial No. 542-05-06 ☑
H600C – Serial No. 542-24-03 ☐

Analyst [redacted] Date 11-23-04

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
B41	NSD																
B44	NSD																
C41	NSD																
E41	NSD																
G41	NSD																
H41	NSD																
K41	NSD																
H43	NSD																
G51	NSD																
F51	NSD																
F53	NSD																
B43	NSD																
G54	NSD																
G31	NSD																

16 Lines

OBSERVATIONS:

Clean ☐
Debris: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☐ Good ☐ Scrappy ☐ Undissolved Filter ☐ Folded ☐

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TEM ASBESTOS ANALYSIS

EMS Lab No. 97391
Client MACTEC
Sample No. 015

Page ___ of ___

MICROSCOPE

RECEIVING

ANALYSIS

Grid Address C
Screen Magnification 9200x
Camera Constant 28.4
Accelerating Voltage 100 KV
Beam Current 10 µA

H600A – Serial No. 542-36-01 ☐
H600B – Serial No. 542-05-06 ☑
H600C – Serial No. 542-24-03 ☐

Analyst [signature] Date 11/24/04

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
F3	NSD																
C3	NSD																
E3	NSD																
G3	NSD																
H3	NSD																
H4	NSD																
H6	NSD																
G5	NSD																
E5	NSD																
B4	NSD																
C3	NSD																
E4	NSD																

16 Lines

OBSERVATIONS:
Clean ☐
Debris ☑ Very Light ☐ Light ☐ Moderate ☑ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☑ Good ☐ Scrappy ☐ Undissolved Filter ☐ Folded ☐

EMS LABORATORIES 117 West Bellevue Drive • Pasadena, CA 91105-2503 • (626) 568-4065

TEM ASBESTOS AIR REPORT

CLIENT: Mactec
EMS NO: 97397
FILTER TYPE AND AREA (mm^2): MCE 385
VOLUME OF AIR: 1500 L
METHOD OF ANALYSIS: NIOSH 7402- PCM Range

SAMPLE DESCRIPTION: 16
RECEIVED: 11/23/04 ANALYZED: 11/24/04
AREA OF SAMPLE ANALYZED (mm^2): 0.372
GRID OPENING AREA (mm^2): 0.0093
SCREEN MAGNIFICATION: 9,100/9,400X

ASBESTOS STRUCTURE DESCRIPTION	COUNTED IN TEM		CALCULATED VALUE
Total Number of Fibers			
Total Chrysotile Fibers	N.D.		N.D. /cc
Mass (ng)	N.D.		N.D. ng/m^3
Fiber Length: Range(um)	N.D. - N.D.	*MEAN*	N.D. um
Fiber Diameter: Range(um)	N.D. - N.D.	*MEAN*	N.D. um
Aspect Ratio: Range	N.D. - N.D.	*MEAN*	N.D.
Fibers <5um/ Fibers >=5um	N.D. / N.D.	N.D. / N.D.	/cc
Total Amphibole Fibers	N.D.		N.D. /cc
Mass (ng)	N.D.		N.D. ng/m^3
Fiber Length: Range(um)	N.D. - N.D.	*MEAN*	N.D. um
Fiber Diameter: Range(um)	N.D. - N.D.	*MEAN*	N.D. um
Aspect Ratio: Range	N.D. - N.D.	*MEAN*	N.D.
Fibers <5um/ Fibers >=5um	N.D. / N.D.	N.D. / N.D.	/cc
Total Number of Asbestos Bundles	N.D.		N.D. /cc
Mass (ng)	N.D.		N.D. ng/m^3
Total Number of Asbestos Cluster Clumps	N.D.		N.D. /cc
Mass (ng)	N.D.		N.D. ng/m^3
Total Number of Asbestos Matrix/Debris	N.D.		N.D. /cc
Mass (ng)	N.D.		N.D. ng/m^3
TOTAL NUMBER OF ASBESTOS STRUCTURES	N.D.		N.D. /cc
Chrysotile	N.D.		N.D. /cc
Amphibole	N.D.		N.D. /cc
Crocidolite	N.D.		N.D. /cc
Tremolite	N.D.		N.D. /cc
Amosite	N.D.		N.D. /cc
Anthophyllite	N.D.		N.D. /cc
Actinolite	N.D.		N.D. /cc
TOTAL NUMBER OF ASBESTOS FIBERS AND BUNDLES	N.D.		N.D. /cc
TOTAL NUMBER OF ASBESTOS STRUCTURES	N.D.		N.D. /cc
Sensitivity Level(Structures/cc)			0.0007
Lower 95% Confidence Limit(Structures/cc)			0
Upper 95% Confidence Limit(Structures/cc)			0.003
TOTAL MASS OF ASBESTOS STRUCTURES(ng)	N.D.		N.D. ng/m^3
TOTAL NUMBER OF UNIDENTIFIED STRUCTURES	N.D.		N.D. /cc
ASBESTOS STRUCTURES/mm^2	N.D.		

COMMENTS: MODERATE DEBRIS

* TEM data is accurate to no more than one significant figure.

TEM ASBESTOS ANALYSIS

Page ____ of ____

EMS Lab No. 97397
Client MACTEC
Sample No. D16

RECEIVING

METHOD OF ANALYSIS
EPA Yamate Level I ☐
Level II ☐
Level III ☐
AHERA ☐
ASPECT RATIO 3:1 ☒ 5:1 ☐

LENGTHS
All Sizes (EPA) ☐
(µm) : ≥ 0.5 ☐
(µm) : > 5.0 ☐
(µm) : > 10.0 ☒
PCM Range* ☐
*(>0.25 µm width, >5.0 µm length)

TYPE OF SAMPLE
Air ☒
Soil ☐
Bulk ☐
Water ☐
Wipe ☐
Other ☐
Dust/Microvac ☐

FILTER TYPE/AREA (mm²)
MCE/385 ☒
MCE/314 ☐
MCE/1017 ☐
Other ☐

PORE SIZE
0.45 µm ☐
0.8 µm ☒
0.1 µm ☐
0.22 µm ☐
Other ☐

G.O. Area (mm²) 0.0 0933
No. of G.O. to Analyze 40

PREP
DIRECT PREP ☒
INDIRECT PREP ☐
Volume 1560 liters
Working Volume ____ ml
Weight ____ grams
Ashed Area ____ %
Date 11-23-04
Prepared By [signature]

ANALYSIS
Grid Address A
Screen Magnification 9200 X
Camera Constant 78.9
Accelerating Voltage 100 KV
Beam Current 10 µA
Analyst [signature] Date 11-24-04

MICROSCOPE
H600A - Serial No. 542-36-01 ☐
H600B - Serial No. 542-05-06 ☒
H600C - Serial No. 542-24-03 ☐

A

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
C31	NSD																
C34	NSD																
E33	UST																
F31	NSD																
G31	NSD																
H33	NSD																
H33	NSD																
H44	NSD																
H46	NSD																
G46	NSD																
G43	NSD																
F51	NSD																
F54	NSD																
E46	NSD																

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☒ Very Light ☐ Light ☐ Moderate ☒ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☐ Good ☒ Scrappy ☐ Undissolved Filter ☐ Folded ☐

TEM - 2A (8-01)

TEM ASBESTOS ANALYSIS

EMS Lab No. 47317

Client MACTEC

Sample No. 016

RECEIVING

ANALYSIS

Page of

MICROSCOPE

Grid Address B

Screen Magnification 6200x

Camera Constant 28.4

Accelerating Voltage 100 KV

Beam Current 10 µA

H600A – Serial No. 542-36-01 ☐

H600B – Serial No. 542-05-06 ☒

H600C – Serial No. 542-24-03 ☐

Analyst [signature] Date 1-24-04

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
G26	NS1																
F31	NS2																
C32	NS3																
C36	NS4																
Q29	NS5																
G64	NS6																
F64	NS7																
E64	NS8																
C56	NS9																
B51	NS10																
B41	NS11																
B54	NS12																
G54	NS13																
E24	NS14																
C41	NS15																

16 Lines

OBSERVATIONS:

Clean ☐

Debris: ☐ Very Light ☐ Light ☐ Moderate ☒ Heavy ☐ Very Heavy ☐

Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐

Condition of the Grid: ☒ Good ☒ Scrappy ☐ Undissolved Filter ☐ Folded ☐

EMS LABORATORIES 117 West Bellevue Drive • Pasadena, CA 91105-2503 • (626) 568-4065

TEM ASBESTOS ANALYSIS

EMS Lab No. 97397
Client MACTEC
Sample No. 016

RECEIVING

ANALYSIS

MICROSCOPE

Grid Address C
Screen Magnification 9700 x
Camera Constant 28.9
Accelerating Voltage 100 KV
Beam Current 10 µA

H600A – Serial No. 542-36-01 ☐
H600B – Serial No. 542-05-06 ☒
H600C – Serial No. 542-24-03 ☐

Analyst [illegible] Date 11-24-04

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
B34	NSD																
C36	NSD																
E33	NSD																
F32	NSD																
G41	NSD																
H33	NSD																
I51	NSD																
K41	NSD																
C51	NSD																
B56	NSD																
E56	PSD																
F61	NSD																

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☒ Very Light ☐ Light ☐ Moderate ☒ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☐ Good ☒ Scrappy ☐ Undissolved Filter ☐ Folded ☐

EMS LABORATORIES 117 West Bellevue Drive • Pasadena, CA 91105-2503 • (626) 568-4065

09-20-04 EMS LABORATORIES CHEMISTRY REPORT page 2

CLIENT: MACTEC LABORATORY NUMBER: 96235

ELEMENT	DETECTION LIMIT (micro grams)
LEAD	< 2

SAMPLE NAME / ELEMENT	WEIGHT (micro grams)
BLANK	
LEAD	< 2

METHOD: NIOSH 7082

micro grams/m^3 = micro grams per cubic meter

SAMPLE NAME / ELEMENT	WEIGHT (micro grams)	CONCENTRATION (micro grams/m^3)
2	FILTER VOLUME 1200 liters	
LEAD	< 2	< 2
5	FILTER VOLUME 1200 liters	
LEAD	< 2	< 2
8	FILTER VOLUME 1200 liters	
LEAD	< 2	< 2
11	FILTER VOLUME 1200 liters	
LEAD	< 2	< 2
14	FILTER VOLUME 1200 liters	
LEAD	< 2	< 2
17	FILTER VOLUME 1200 liters	
LEAD	< 2	< 2
20	FILTER VOLUME 1200 liters	
LEAD	< 2	< 2
23	FILTER VOLUME 1200 liters	
LEAD	< 2	< 2
26	FILTER VOLUME 1200 liters	
LEAD	< 2	< 2

CHEMIST FSL

SUBMITTAL FORM/Laboratory Services

96235

PAGE 1 OF 1

TURNAROUND TIME: STD ✓ 48 HR. 24 HR. <8 HR. WKND OTHER:

RELINQUISHED BY Curt Harvey

TIME / DATE 1415 9/17/04

CLIENT MACTEC

DATE OF SHIPMENT CARRIER

ADDRESS

CLIENT P.O. NO.

CLIENT JOB/PROJECT ID NO(S). H+S 4952-04-2861

TELEPHONE (323) 889-5378

CONTACT Don Harvey

PACKAGE SHIPPED FROM

RESULTS REQUESTED VIA VERBAL ☐ FAX ✓

CLIENT FAX NO. (323) 721-6700

(NOTE: Complete written reports will follow all analyses, in addition to any prior transmitted verbal or fax results.)

DATE/TIME OF SAMPLE COLLECTION 9/15 - 9/17

SAMPLE PRESERVATIVES None HOLDING TIMES NA

NO. OF SAMPLES SENT 9 SAMPLER'S NAME /Scott Campbell (SIGNATURE) (PRINTED)

TYPE: ☐ WATER ☐ WASTE WATER ☐ SOIL ☐ FILTER ☐ SORBENT TUBE ☐ IMPINGER ☐ OTHER

(FOR EMS ONLY) EMS Sample No.	CLIENT SAMPLE NO.	DESCRIPTION/LOCATION/ANALYSIS	VOLUME/TIME/WEIGHT/AREA/COUNTS
96235-2,5,8,11,14	2, 5, 8, 11, 14	lead in air	1200 L
✓ - 17,20,23,26	17, 20, 23, 26		

96235

(SF 5/00)

FOR EMS ONLY

Laboratory No.

Received By Cynthia Time 1:20 pm

Date of Package Delivery 09-17-04

Shipping Bill Retained: YES ☐ NONE ☒

Condition of Package on Receipt good

Condition of Custody Seal none

(NOTE: If the package has sustained substantial damage or the custody seal is broken, stop and contact the project manager and the shipper.)

No. of Samples 9

Chain-of-Custody Signature

Date of Acceptance into Sample Bank 09-17-04

Misc. Info.

Disposition of Samples EMS

EMS LABORATORIES 117 West Bellevue Drive / Pasadena CA 91105-2503 / 626-568-4065

Report No:	96234	**Magnification:**	600X (PCM)
Client:	MACTEC	**Sample Type:**	Zefon Air-O-Cell (Total spores)
Date Received:	9/17/2004	**Analyst:**	JEFF WAN
Date Completed:	9/28/2004	**File Name:**	96234MACTEC.AIR
Attention:	DON HARMAN	**Project:**	4952-04-2861
AIHA EMPAT No:	101634	**QC Analyst:**	

SAMPLE ID:		3		6		9
VOLUME (CUBIC METER):		0.75		0.75		0.75
NUMERICAL FACTOR:		3.92		3.92		3.92
DETECTION LIMIT	1	4	1	4	1	4
LOCATION:		N.A.		N.A.		N.A.
DEBRIS SCALE:		HEAVY		MODERATE		HEAVY
SAMPLE DESCRIPTION:		AIR		AIR		AIR
POLLEN	**RW.CT.**	**POLLEN/M3**	**RW.CT.**	**POLLEN/M3**	**RW.CT.**	**POLLEN/M3**
UNKNOWN POLLEN	6	20	5	20	7	30
TOTAL	**6**	**20**	**5**	**20**	**7**	**30**
MOLD SPORES	**RW.CT.**	**SPORE/M3**	**RW.CT.**	**SPORE/M3**	**RW.CT.**	**SPORE/M3**
AGARICUS						
AGROCYBB	1	4	1	4	6	20
ALTERNARIA	2	8	1	4	2	8
ASCOSPORES	1	4	1	4	2	8
ASPERGILLUS/PENICILLIUM	20	78	2	8	38	150
BASIDIOSPORES					1	4
CHAETOMIUM	1	4	1	4		
CHLOROPHYLLUM					1	4
CLADOSPORIUM	30	120	21	82	28	110
CURVULARIA					1	4
DRECHSLERA / BIPOLARIS						
EPICOCUM			2	8	3	10
EXSEROHILUM						
FUSARIUM						
MILDEW						
NIGROSPORA						
PENICILLIUM						
PERICONIA						
PITHOMYCES					1	4
RUST	1	4			2	8
SMUT, MYXOMYCETES	2	8	1	4	2	8
STACHYBOTRYS						
STEMPHYLLUM					2	8
TORULA	1	4				
UNKNOWN SPORE						
UNKNOWN HYPHAE	5	20			6	20
TOTAL SPORES/M3	**64**	**254**	**30**	**118**	**95**	**366**

COMMENTS:

RW.CT. = RAW COUNT ND = NONE DETECTED M3 =CUBIC METER

COMMENTS: INTERPRETATION IS LEFT TO THE COMPANY AND/OR PERSONS WHO CONDUCTED THE FIELD SAMPLING.

Note: The results of the analysis are based upon the samples submitted to the laboratory. No representation is made regarding the sampling area other than that implied by the analytical results for the immediate vicinity of the samples analyzed as calculated from the data presented with those samples.

ANALYST:

Report No:	**96234**	**Magnification:**	**600X (PCM)**
Client:	**MACTEC**	**Sample Type:**	**Zefon Air-O-Cell (Total spores)**
Date Received:	**9/17/2004**	**Analyst:**	**JEFF WAN**
Date Completed:	**9/28/2004**	**File Name:**	**96234MACTEC.AIR**
Attention:	**DON HARMAN**	**Project:**	**4952-04-2861**
AIHA EMPAT NO:	**101634**	**QC Analyst:**	**0**

SAMPLE ID:	12		15		18	
VOLUME (CUBIC METER):	1	0.75	1	0.75	1	0.75
NUMERICAL FACTOR:		3.92		3.92		3.92
DETECTION LIMIT		4		4		4
LOCATION:		N.A.		N.A.		N.A.
DEBRIS SCALE:		MODERATE		HEAVY		HEAVY
SAMPLE DESCRIPTION:		AIR		AIR		AIR
POLLEN	**RW.CT.**	**POLLEN/M3**	**RW.CT.**	**POLLEN/M3**	**RW.CT.**	**POLLEN/M3**
UNKNOWN POLLEN	6	20	3	10	2	8
TOTAL	6	20	3	10	2	8
MOLD SPORES	**RW.CT.**	**SPORE/M3**	**RW.CT.**	**SPORE/M3**	**RW.CT.**	**SPORE/M3**
AGARICUS						
AGROCYBE	1	4	3	10	4	20
ALTERNARIA	3	10	4	20	4	20
ASCOSPORES	1	4	3	10	8	30
ASPERGILLUS/PENICILLIUM	1	4	2	8		
BASIDIOSPORES			2	8		
CHAETOMIUM			3	10		
CHLOROPHYLLUM			2	8		
CLADOSPORIUM	25	98	32	130	28	110
CURVULARIA						
DRECHSLERA / BIPOLARIS			2	8	5	20
EPICOCUM						
EXSEROHILUM						
FUSARIUM						
MILDEW						
NIGROSPORA						
PENICILLIUM						
PERICONIA						
PITHOMYCES			4	20		
RUST			2	8		
SMUT, MYXOMYCETES			4	20	2	8
STACHYBOTRYS			1	4		
STEMPHYLLUM						
TORULA					1	4
UNKNOWN SPORE						
UNKNOWN HYPHAE			3	10	6	20
TOTAL SPORES/M3	**31**	**120**	**67**	**274**	**58**	**232**

COMMENTS:

RW.CT. = RAW COUNT ND = NONE DETECTED M3 =CUBIC METER

COMMENTS: INTERPRETATION IS LEFT TO THE COMPANY AND/OR PERSONS WHO CONDUCTED THE FIELD SAMPLING.
Note: The results of the analysis are based upon the samples submitted to the laboratory.
No representation is made regarding the sampling area other than that implied by the analytical results for the immediate vicinity of the samples analyzed as calculated from the data presented with those samples.

ANALYST:

Report No:	96234	**Magnification:**	600X (PCM)
Client:	MACTEC	**Sample Type:**	Zefon Air-O-Cell (Total spores)
Date Received:	9/17/2004	**Analyst:**	JEFF WAN
Date Completed:	9/28/2004	**File Name:**	96234MACTEC.AIR
Attention:	DON HARMAN	**Project:**	4952-04-2861
AIHA EMPAT NO:	101634	**QC Analyst:**	0

SAMPLE ID:	21		24		27	
VOLUME (CUBIC METER):		0.75		0.75		0.75
NUMERICAL FACTOR:		3.92		3.92		3.92
DETECTION LIMIT	1	4	1	4	1	4
LOCATION:		N.A.		N.A.		N.A.
DEBRIS SCALE:		HEAVY		HEAVY		LIGHT
SAMPLE DESCRIPTION:		AIR		AIR		AIR
POLLEN	**RW.CT.**	**POLLEN/M3**	**RW.CT.**	**POLLEN/M3**	**RW.CT.**	**POLLEN/M3**
UNKNOWN POLLEN	9	40	6	20		
TOTAL	9	40	6	20	0	0
MOLD SPORES	**RW.CT.**	**SPORE/M3**	**RW.CT.**	**SPORE/M3**	**RW.CT.**	**SPORE/M3**
AGARICUS						
AGROCYBE	2	8	5	20		
ALTERNARIA	8	30	7	30	1	4
ASCOSPORES	3	10	9	40		
ASPERGILLUS/PENICILLIUM						
BASIDIOSPORES						
CHAETOMIUM	1	4				
CHLOROPHYLLUM			1	4		
CLADOSPORIUM	26	100	28	110		
CURVULARIA						
DRECHSLERA / BIPOLARIS	4	20	1	4		
EPICOCUM	1	4	1	4		
EXSEROHILUM						
FUSARIUM						
MILDEW						
NIGROSPORA						
PENICILLIUM						
PERICONIA						
PITHOMYCES						
RUST			2	8		
SMUT, MYXOMYCETES	6	20	10	39		
STACHYBOTRYS	4	20				
STEMPHYLLUM						
TORULA			1	4		
UNKNOWN SPORE						
UNKNOWN HYPHAE	5	20	9	40		
TOTAL SPORES/M3	60	236	74	303	1	4

COMMENTS:

RW.CT. = RAW COUNT ND = NONE DETECTED M3 =CUBIC METER

COMMENTS: INTERPRETATION IS LEFT TO THE COMPANY AND/OR PERSONS WHO CONDUCTED THE FIELD SAMPLING.

Note: The results of the analysis are based upon the samples submitted to the laboratory. No representation is made regarding the sampling area other than that implied by the analytical results for the immediate vicinity of the samples analyzed as calculated from the data presented with those samples.

ANALYST:

SUBMITTAL FORM/Laboratory Services 46234

PAGE ___ OF ___

TURNAROUND TIME: STD ☑ 48 HR. ☐ 24 HR. ☐ <8 HR. ☐ WKND ☐ OTHER: ☐

RELINQUISHED BY Dave Haim

TIME / DATE 1415 9/17

CLIENT MACTEC

DATE OF SHIPMENT ___ CARRIER ___

ADDRESS ___

CLIENT P.O. NO. ___

CLIENT JOB/PROJECT ID NO(S). 4952-04-2261

TELEPHONE (323) 109-5378

CONTACT Dave Harmon

PACKAGE SHIPPED FROM ___

RESULTS REQUESTED VIA VERBAL ☐ FAX ☑ CLIENT FAX NO. (323) 721-6700

(NOTE: Complete written reports will follow all analyses, in addition to any prior transmitted verbal or fax results.)

DATE/TIME OF SAMPLE COLLECTION 9/15 to 9/16

SAMPLE PRESERVATIVES None HOLDING TIMES N/A

NO. OF SAMPLES SENT 9 SAMPLER'S NAME ___ / SIGNATURE PRINTED

TYPE: ☐ WATER ☐ WASTE WATER ☐ SOIL ☐ FILTER ☐ SORBENT TUBE ☐ IMPINGER ☐ OTHER ___

(FOR EMS ONLY) EMS Sample No.	CLIENT SAMPLE NO.	DESCRIPTION/LOCATION/ANALYSIS		VOLUME/ TIME/WEIGHT (IF APPLICABLE)
96234-3,6,9,12,15	3,6,9,12,15	Aircell		750L
↓ 18,21,24,26	18,21,24,26			

96234

(SF 5/00)

FOR EMS ONLY

Laboratory No. ___ Received By Crystal Time 2:20 PM

Date of Package Delivery 09-17-04 Shipping Bill Retained: YES ☐ NONE ☒

Condition of Package on Receipt Good Condition of Custody Seal None

(NOTE: If the package has sustained substantial damage or the custody seal is broken, stop and contact the project manager and the shipper.)

No. of Samples 9 Chain-of-Custody Signature ___

Date of Acceptance into Sample Bank 09-17-04 EMS Misc. Info. ___

Disposition of Samples ___

TEM ASBESTOS ANALYSIS

EMS Lab No. 96233
Client MACTEC
Sample No. 029

RECEIVING

METHOD OF ANALYSIS: EPA Yamate Level I ☐ Level II ☐ Level III ☐ AHERA ☐ ASPECT RATIO 3:1 ☐ 5:1 ☒

LENGTHS: All Sizes (EPA) ☐ (µm) : ≥ 0.5 ☒ (µm) : > 5.0 ☐ (µm) : > 10.0 ☐ PCM Range* ☐ (*>0.25 µm width, >5.0 µm length)

TYPE OF SAMPLE: Air ☐ Soil ☐ Bulk ☐ Water ☐ Wipe ☐ Other ☐ Dust/Microvac ☒

FILTER TYPE & DIA (mm): MCE/385 ☐ MCE/314 ☐ MCE/1017 ☐ Other ☐

PORE SIZE: 0.45 µm ☐ 0.8 µm ☐ 0.1 µm ☐ 0.22 µm ☐ Other ☐

G.O. Area (mm²) 0.0 095
No. of G.O. to Analyze 10

PREP

SEMI-QUANT.

DIRECT PREP ☐ INDIRECT PREP ☐
Volume ____ liters
Working Volume 50 ml
Weight 0.0123 grams
Ashed Area ____ %

Date 09-25-04
Prepared By JAP

ANALYSIS

Grid Address A
Screen Magnification 7200 X
Camera Constant 28.4
Accelerating Voltage 100 KV
Beam Current 10 µA

Analyst V Vora Date 9-26-04

Page ____ of ____

MICROSCOPE
H600A - Serial No. 542-36-01 ☐
H600B - Serial No. 542-05-06 ☒
H600C - Serial No. 542-24-03 ☐

A

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
A33	NSD		<5µm	>5	µm												<5 >5 µm
C4	NSD																0 0
F4	NSD		1			✓						7	10				1 0 EDS
E34	NSD																0 0
C33	NSD			1													0 1

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☒ Very Light ☐ Light ☐ Moderate ☒ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☒ Good ☒ Scrappy ☐ Undissolved Filter ☐ Folded ☐

TEM - 2A (8-01)

EMS LABORATORIES 117 West Bellevue Drive • Pasadena, CA 91105-2503 • (626) 568-4065

26-Sep-2004 15:23:51

96233,029AN1,LK Preset= 100 secs
Vert= 200 counts Disp= 1 Elapsed= 12 secs

Energy	Counts	X-Ray Lines
1.27	234.	Mg K , Mg K , Mg K , As L , As L , As L
1.76	354.	Si K , Si K , W M , W M
2.62	43.	Cl K , Cl K
6.40	72.	Fe K , Fe K

Quantex>
0.000 Range= 10.230 keV 10.110
Integral 0 = 63

TEM ASBESTOS ANALYSIS

EMS Lab No. 96233
Client MACTEC
Sample No. 029

RECEIVING

ANALYSIS

P[redacted]
MICROSCOPE

Grid Address B
Screen Magnification 19,400x
Camera Constant 27.7
Accelerating Voltage 100 KV
Beam Current 10 µA

H600A – Serial No. 542-36-01 ☐
H600B – Serial No. 542-05-06 ☐
H600C – Serial No. 542-24-03 ☑

Analyst NJA Date 9/27

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
	1		<5M >5Mm														
E6-1			11 ✓	1		✓											
F6-1			11			✓											
G5-3	NSD																
G5-1			11			✓											
G4-6			11	1		✓											

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☑ Very Light ☐ Light ☐ Moderate ☑ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☑ Good ☑ Scrappy ☐ Undissolved Filter ☐ Folded ☐

TEM ASBESTOS ANALYSIS

EMS Lab No. 96233
Client MACTEC
Sample No. 030

RECEIVING

METHOD OF ANALYSIS
EPA Yamate Level I ☐
Level II ☐
Level III ☐
AHERA ☐
ASPECT RATIO 3:1 ☐ 5:1 ☒

LENGTHS
All Sizes (EPA) ☐
(µm) : ≥ 0.5 ☒
(µm) : > 5.0 ☐
(µm) : > 10.0 ☐
PCM Range* ☐
*(>0.25 µm width, >5.0 µm length)

TYPE OF SAMPLE
Air ☐
Soil ☐
Bulk ☐
Water ☐
Wipe ☐
Other ☐
Dust/Microvac ☒

FILTER TYPE/AREA (mm²)
MCE/385 ☐
MCE/314 ☐
MCE/1017 ☐
Other ☐

PORE SIZE
0.45 µm ☐
0.8 µm ☐
0.1 µm ☐
0.22 µm ☐
Other ☐

G.O. Area (mm²) 0.0 095
No. of G.O. to Analyze 10

PREP
SEMI-QUANT.
DIRECT PREP ☐
INDIRECT PREP ☐
Volume ____ liters
Working Volume 100 ml
Weight 0.0124 grams
Ashed Area ____ %
Date 09-25-04
Prepared By JAP

ANALYSIS
A
Grid Address ____
Screen Magnification 19.0K
Camera Constant 38.4
Accelerating Voltage 100 KV
Beam Current 10 µA
Analyst ____ Date 9-26-04

Page ____ of ____

MICROSCOPE
H600A - Serial No. 542-36-01 ☐
H600B - Serial No. 542-05-06 ☒
H600C - Serial No. 542-24-03 ☐

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
			<5	>5	µm												<5 >5 µm
B5	NSD																
E4	NSD																
A4	NSD																
C3	NSD																
B2	NSD																

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☒ Very Light ☐ Light ☐ Moderate ☒ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☒ Good ☒ Scrappy ☐ Undissolved Filter ☐ Folded ☐

TEM - 2A (8-01)

TEM ASBESTOS ANALYSIS

EMS Lab No. 96230
Client MACTEC
Sample No. 030

RECEIVING

ANALYSIS

MICROSCOPE

Grid Address B 19,400
Screen Magnification 19,400 x
Camera Constant 29.8
Accelerating Voltage 100 KV
Beam Current 10 µA

H600A – Serial No. 542-36-01 ☐
H600B – Serial No. 542-05-06 ☐
H600C – Serial No. 542-24-03 ☑

Analyst NJA Date 9/27

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
G2-3	NSD																
F2-3	NSD																
H4-1	NSD																
F5-1	NSD																
E3-5	NSD																

16 Lines

OBSERVATIONS:

Clean ☐
Debris: ☑ Very Light ☐ Light ☐ Moderate ☑ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☑ Good ☑ Scrappy ☐ Undissolved Filter ☐ Folded ☐

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TEM ASBESTOS ANALYSIS

EMS Lab No. 96233
Client MACTEC
Sample No. 031

RECEIVING

METHOD OF ANALYSIS
EPA Yamate Level I ☐
Level II ☐
Level III ☐
AHERA ☐
ASPECT RATIO 3:1 ☐ 5:1 ☒

LENGTHS
All Sizes (EPA) ☐
(µm) : ≥ 0.5 ☒
(µm) : > 5.0 ☐
(µm) : > 10.0 ☐
PCM Range* ☐
*(>0.25 µm width, >5.0 µm length)

TYPE OF SAMPLE
Air ☐
Soil ☐
Bulk ☐
Water ☐
Wipe ☐
Other ☐
Dust/Microvac ☒

FILTER TYP…A (mm)
MCE/385 ☐
MCE/314 ☐
MCE/1017 ☐
Other ☐

PORE SIZE
0.45 µm ☐
0.8 µm ☐
0.1 µm ☐
0.22 µm ☐
Other ☐

G.O. Area (mm²) 0.0 095
No. of G.O. to Analyze 10

PREP

DIRECT PREP ☐
INDIRECT PREP ☐
Volume ____ liters
Working Volume 100 ml
Weight 0.0120 grams
Ashed Area ____ %

Date 09-22-04
Prepared By JAP

ANALYSIS

Grid Address A
Screen Magnification 1900 X
Camera Constant 29.1
Accelerating Voltage 100 KV
Beam Current 10 µA

Analyst Radke Date 9/23

Page ____ of ____

MICROSCOPE
H600A - Serial No. 542-36-01 ☒
H600B - Serial No. 542-05-06 ☐
H600C - Serial No. 542-24-03 ☐

A

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
C2-6		NYI	<5	75													
E2-3		NYI															
F3-4			2			✓					EDS	10	10				EDS
G3-3			1			✓											
H4-1			1			✓											

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☐ Very Light ☐ Light ☐ Moderate ☒ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☐ Good ☐ Scrappy ☐ Undissolved Filter ☐ Folded ☐

TEM - 2A (8-01)

23-Sep-2004 09:28:29

96233,31,A,#01,RS
Vert= 200 counts Disp= 1
Preset= Off
Elapsed= 41 secs

Energy	Counts	X-Ray Lines
1.28	139.	Mg K , Mg K , Mg K
1.78	121.	Si K , Si K

Quantex>
0.000 Range= 10.230 keV 10.110
Integral 0 = 087

TEM ASBESTOS ANALYSIS

EMS Lab No. 96233

Client MACTEC

Sample No. 03

RECEIVING

ANALYSIS

Page [redacted] of [redacted]

MICROSCOPE

Grid Address B

Screen Magnification 19200X

Camera Constant 128.4

Accelerating Voltage 100 KV

Beam Current 10 µA

H600A – Serial No. 542-36-01 ☐

H600B – Serial No. 542-05-06 ☒

H600C – Serial No. 542-24-03 ☐

Analyst S. A Date 9/23/04

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
E56	NSD																
E53	NSD																
B46	NSD																
B33	NSD																
CB4	NSD																

16 Lines

OBSERVATIONS:

Clean ☐

Debris: ☒ Very Light ☐ Light ☐ Moderate ☒ Heavy ☐ Very Heavy ☐

Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐

Condition of the Grid: ☐ Good ☒ Scrappy ☐ Undissolved Filter ☐ Folded ☐

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TEM ASBESTOS ANALYSIS

EMS Lab No. 96233
Client MACTEC
Sample No. 032

RECEIVING

METHOD OF ANALYSIS
EPA Yamate Level I ☐
Level II ☐
Level III ☐
AHERA ☐
ASPECT RATIO 3:1 ☐ 5:1 ☒

LENGTHS
All Sizes (EPA) ☐
(µm) : ≥ 0.5 ☒
(µm) : > 5.0 ☐
(µm) : > 10.0 ☐
PCM Range* ☐
*(>0.25 µm width, >5.0 µm length)

TYPE OF SAMPLE
Air ☐
Soil ☐
Bulk ☐
Water ☐
Wipe ☐
Other ☐
Dust/Microvac ☒

FILTER TYPE/AREA (mm²)
MCE/385 ☐
MCE/314 ☐
MCE/1017 ☐
Other ☐

PORE SIZE
0.45 µm ☐
0.8 µm ☐
0.1 µm ☐
0.22 µm ☐
Other ☐

G.O. Area (mm²) 0.0 095
No. of G.O. to Analyze 10

PREP
SEMI-QUANT.
DIRECT PREP ☐
INDIRECT PREP ☐
Volume ____ liters
Working Volume 100 ml
Weight 0.0125 grams
Ashed Area ____ %
Date 09-25-04
Prepared By JAP

ANALYSIS
Grid Address A
Screen Magnification 1400X X
Camera Constant 18.4
Accelerating Voltage 100 KV
Beam Current 10 µA
Analyst [signature] Date 9-26-04

Page ____ of ____

MICROSCOPE
H600A - Serial No. 542-36-01 ☐
H600B - Serial No. 542-05-06 ☒
H600C - Serial No. 542-24-03 ☐

A

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
B44	NSD																
C46	NSD																
E46	NSD																CONTAINS NON-REGULATED FIBERS BY EDS.
E56	NSD																
E43	NSD																

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☒ Very Light ☐ Light ☐ Moderate ☒ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☒ Good ☒ Scrappy ☐ Undissolved Filter ☐ Folded ☐

TEM - 2A (8-01)

26-Sep-2004 16:23:57

96233,032A#1,LK Preset= 100 secs
Vert= 200 counts Disp= 1 Elapsed= 12 secs

Energy	Counts	X-Ray Lines
1.05	143.	Na K , Na K , Na K , Zn L , Ga L , Zn L , Ga L , Zn L , Zn L
1.27	169.	Mg K , Mg K , Mg K , As L , As L , As L
1.50	100.	Al K , Al K
1.76	1552.	Si K , Si K , W M , W M
3.71	35.	Ca K , Ca K
6.40	615.	Fe K , Fe K
Quantex>	62.	Fe K , Fe K

0.000 Range= 10.230 keV 10.110

Integral B = 271

TEM ASBESTOS ANALYSIS

EMS Lab No. 96233
Client MACTEC
Sample No. 032

RECEIVING

ANALYSIS

MICROSCOPE

Grid Address B
Screen Magnification 19,400 x
Camera Constant 29.7
Accelerating Voltage 100 KV
Beam Current 10 µA

H600A – Serial No. 542-36-01 ☑
H600B – Serial No. 542-05-06 ☐ NJA
H600C – Serial No. 542-24-03 ☐ NJA

Analyst NJA Date 9/27/02

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
E5-4			<5M	>5M													
E5-4			1	1		✓											
F5-1			1	1		✓											
C4-1	NSD																
C3-6	NSD																

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☑ Very Light ☐ Light ☐ Moderate ☑ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☑ Good ☑ Scrappy ☐ Undissolved Filter ☐ Folded ☐

TEM ASBESTOS ANALYSIS

Page of

EMS Lab No. 96233
Client MACTEC
Sample No. 033

RECEIVING

METHOD OF ANALYSIS
EPA Yamate Level I ☐
Level II ☐
Level III ☐
AHERA ☐
ASPECT RATIO 3:1 ☐ 5:1 ☑

LENGTHS
All Sizes (EPA) ☐
(µm) : ≥ 0.5 ☑
(µm) : > 5.0 ☐
(µm) : > 10.0 ☐
PCM Range* ☐
*(>0.25 µm width, >5.0 µm length)

TYPE OF SAMPLE
Air ☐
Soil ☐
Bulk ☐
Water ☐
Wipe ☐
Other ☐
Dust/Microvac ☑

TYPE/AREA (mm²)
MCE/385 ☐
MCE/314 ☐
MCE/1017 ☐
Other ☐

PORE SIZE
0.45 µm ☐
0.8 µm ☐
0.1 µm ☐
0.22 µm ☐
Other ☐

G.O. Area (mm²) 0.0 095
No. of G.O. to Analyze 10

PREP

DIRECT PREP ☐
INDIRECT PREP ☐
Volume ____ liters
Working Volume 100 ml
Weight 0.0121 grams
Ashed Area ____ %
Date 09-22-04
Prepared By JAP

ANALYSIS

Grid Address A
Screen Magnification 19200(x)
Camera Constant 28-4
Accelerating Voltage 100 KV
Beam Current 10 µA
Analyst SA
Date 9/23/04

MICROSCOPE
H600A - Serial No. 542-36-01 ☐
H600B - Serial No. 542-05-06 ☑
H600C - Serial No. 542-24-03 ☐

A

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
E56	NSD		<5um	75um.													<5um 75um
F5-1			1			✓						6	10				2 0
C43			1			✓											
E33	NSD																
I4UI	NSD																

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☐ Very Light ☐ Light ☐ Moderate ☑ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☐ Good ☐ Scrappy ☐ Undissolved Filter ☐ Folded ☐

23-Sep-2004 09:46:04

96233,33,A,#01,SA Preset= Off
Vert= 200 counts Disp= 1 Elapsed= 7 secs

Energy	Counts	X-Ray Lines
1.25	143.	Mg K , Mg K , Mg K
1.77	280.	Si K , Si K
2.32	26.	S K , S K
3.31	24.	K K , K K
3.62	17.	K K , K K
6.43	86.	Fe K , Fe K
8.59	10.	Zn K , Zn K

Quantex>
0.000 Range= 10.230 keV 10.110
Integral 0 = 3811

TEM ASBESTOS ANALYSIS

EMS Lab No. 96233

Client MACTEC

Sample No. 033

RECEIVING

ANALYSIS

MICROSCOPE

Grid Address B

Screen Magnification 19KX

Camera Constant 21.4

Accelerating Voltage 100 KV

Beam Current 10 µA

H600A – Serial No. 542-36-01 ☒

H600B – Serial No. 542-05-06 ☐

H600C – Serial No. 542-24-03 ☐

Analyst Radke Date 9/23

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
F3-3		NSD	<5n	15n													
F4-6		NSD															
H5-1			1			✓											
H5-4		NSD															
G6-4		NSD															

16 Lines

OBSERVATIONS:

Clean ☐

Debris: ☐ Very Light ☐ Light ☐ Moderate ☒ Heavy ☒ Very Heavy ☐

Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐

Condition of the Grid: ☐ Good ☐ Scrappy ☐ Undissolved Filter ☐ Folded ☐

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TEM ASBESTOS ANALYSIS

EMS Lab No. 96233
Client MACTEC
Sample No. 034

Page ___ of ___

RECEIVING

METHOD OF ANALYSIS
- EPA Yamate Level I ☐
- Level II ☐
- Level III ☐
- AHERA ☐
- ASPECT RATIO 3:1 ☐ 5:1 ☑

LENGTHS
- All Sizes (EPA) ☐
- (µm) : ≥ 0.5 ☑
- (µm) : > 5.0 ☐
- (µm) : > 10.0 ☐
- PCM Range* ☐

*(>0.25 µm width, >5.0 µm length)

TYPE OF SAMPLE
- Air ☐
- Soil ☐
- Bulk ☐
- Water ☐
- Wipe ☐
- Other ☐
- Dust/Microvac ☑

TYPE/AREA (mm²)
- MCE/385 ☐
- MCE/314 ☐
- MCE/1017 ☐
- Other ☐

PORE SIZE
- 0.45 µm ☐
- 0.8 µm ☐
- 0.1 µm ☐
- 0.22 µm ☐
- Other ☐

G.O. Area (mm²) 0.0 095
No. of G.O. to Analyze 10

PREP

SEMI-QUANT.

DIRECT PREP ☐
INDIRECT PREP ☐
Volume ______ liters
Working Volume 50 ml
Weight 0.0120 grams
Ashed Area ______ %
Date 09-25-04
Prepared By JAP

ANALYSIS

Grid Address A
Screen Magnification 19100 x
Camera Constant 38.4
Accelerating Voltage 100 KV
Beam Current 10 µA

MICROSCOPE
- H600A - Serial No. 542-36-01 ☐
- H600B - Serial No. 542-05-06 ☑
- H600C - Serial No. 542-24-03 ☐

A

Analyst L Kozu Date 9-26-04

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
F43	NSD		<5	>5	µm												<5 ≥ 75 µm
C14	NSD																
B46	NSD																
C44	NSD																
F33	NSD																

16 Lines

OBSERVATIONS:
- Clean ☐
- Debris: ☑ Very Light ☐ Light ☐ Moderate ☑ Heavy ☐ Very Heavy ☐
- Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
- Condition of the Grid: ☑ Good ☑ Scrappy ☐ Undissolved Filter ☐ Folded ☐

TEM ASBESTOS ANALYSIS

EMS Lab No. 96233
Client MACTEC
Sample No. 034

RECEIVING

ANALYSIS

P[illegible]
MICROSCOPE

Grid Address B
Screen Magnification 91 200 x
Camera Constant 28.4
Accelerating Voltage 100 KV
Beam Current 10 µA

H600A – Serial No. 542-36-01 ☐
H600B – Serial No. 542-05-06 ☒
H600C – Serial No. 542-24-03 ☐

Analyst NJA Date 9/27/04

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
H3-3	NSD		<5M	>5Mm													
K4-1	NSD																
G4-1	NSD																
E4-6	NSD																
E3-1	NSD																

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☒ Very Light ☐ Light ☐ Moderate ☒ Heavy ☒ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☒ Good ☒ Scrappy ☐ Undissolved Filter ☐ Folded ☐

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TEM ASBESTOS ANALYSIS

EMS Lab No. 96233
Client MACTEC
Sample No. 035

RECEIVING

METHOD OF ANALYSIS
EPA Yamate Level I ☐
Level II ☐
Level III ☐
AHERA ☐
ASPECT RATIO 3:1 ☐ 5:1 ☐

LENGTHS
All Sizes (EPA) ☐
(µm) : ≥ 0.5 ☑
(µm) : > 5.0 ☐
(µm) : > 10.0 ☐
PCM Range* ☐
*(>0.25 µm width, >5.0 µm length)

TYPE OF SAMPLE
Air ☐
Soil ☐
Bulk ☐
Water ☐
Wipe ☐
Other ☐
Dust/Microvac ☑

TYPE/AREA (mm²)
MCE/385 ☐
MCE/314 ☐
MCE/1017 ☐
Other ☐

PORE SIZE
0.45 µm ☐
0.8 µm ☐
0.1 µm ☐
0.22 µm ☐
Other ☐

G.O. Area (mm²) 0.0 095
No. of G.O. to Analyze 10

PREP

DIRECT PREP ☐
INDIRECT PREP ☐
Volume _____ liters
Working Volume 50 ml
Weight 0.0123 grams
Ashed Area _____ %

Date 09-22-04
Prepared By JKP

ANALYSIS

Grid Address A
Screen Magnification 9K
Camera Constant 28-4
Accelerating Voltage 100 KV
Beam Current 10 µA

MICROSCOPE
H600A - Serial No. 542-36-01 ☐
H600B - Serial No. 542-05-06 ☑
H600C - Serial No. 542-24-03 ☐

Page A of

Analyst SA Date 9/23/0

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
F5 U	NSO		<5um	75um.													<5um 75um
C5-4			1			✓						7	10				CHRY 6
F46							✓										
F36			1					✓									
C34			3			✓											

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☑ Very Light ☐ Light ☐ Moderate ☑ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☐ Good ☑ Scrappy ☐ Undissolved Filter ☐ Folded ☐

TEM - 2A (8-01)

23-Sep-2004 10:02:29

96233,35,A,#01,SA
Vert= 200 counts Disp= 1

Preset= Off
Elapsed= 16 secs

Energy	Counts	X-Ray Lines
1.20	177.	Mg K , Mg K , Mg K
1.76	259.	Si K , Si K

Quantex>
0.000 Range= 10.230 keV 10.110
Integral 0 = 0587

TEM ASBESTOS ANALYSIS

EMS Lab No. 96233
Client MACTEC
Sample No. Q35

RECEIVING

ANALYSIS

P[redacted] of [redacted]

MICROSCOPE

Grid Address B
Screen Magnification 1900x
Camera Constant 29.1
Accelerating Voltage 100 KV
Beam Current 10 µA

H600A – Serial No. 542-36-01 ☑
H600B – Serial No. 542-05-06 ☐
H600C – Serial No. 542-24-03 ☐

Analyst Ratho Date 9/23/03

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
H4-6		ND	<1	>5													
F5-4			2			✓											
H4-3		ND															
H1-4		ND															
F5-3		✓	1	1		✓											

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☑ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☐ Good ☐ Scrappy ☐ Undissolved Filter ☐ Folded ☐

TEM ASBESTOS ANALYSIS

EMS Lab No. 96233
Client MACTEC
Sample No. 018

RECEIVING

METHOD OF ANALYSIS
EPA Yamate Level I ☐
Level II ☐
Level III ☐
AHERA ☐
ASPECT RATIO 3:1 ☐ 5:1 ☐

LENGTHS
All Sizes (EPA) ☐
(µm) : ≥ 0.5 ☐
(µm) : > 5.0 ☐
(µm) : > 10.0 ☐
PCM Range* ☐
*(>0.25 µm width, >5.0 µm length)

PREP

TYPE OF SAMPLE
Air ☐
Soil ☐
Bulk ☐
Water ☐
Wipe ☐
Other ☐
Dust/Microvac ☑

ER TYPE/AHERA (mm²)
MCE/385 ☐
MCE/314 ☐
MCE/1017 ☑
Other ☐

PORE SIZE
0.45 µm ☐
0.8 µm ☐
0.1 µm ☐
0.22 µm ☑
Other ☐

G.O. Area (mm²) 0.0 095
No. of G.O. to Analyze 10

DIRECT PREP ☐
INDIRECT PREP ☐
Volume 100 liters
Working Volume ____ ml
Weight 0.0122 grams
Ashed Area ____ %
Date 9-24-04
Prepared By [illegible]

ANALYSIS

Grid Address A
Screen Magnification 4200x
Camera Constant 28.4
Accelerating Voltage 100 KV
Beam Current 10 µA
Analyst [illegible] Date 9-24-04

Page ____ of ____

MICROSCOPE
H600A - Serial No. 542-36-01 ☐
H600B - Serial No. 542-05-06 ☑
H600C - Serial No. 542-24-03 ☐

A

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
E31			<5	>5	µm	/						6	10				<5 >5 µm EDS
E36			1	1		/											1 1
G44			1			/											1 Ø
M51			1			/											1 Ø
E46			NSD														Ø Ø

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☑ Very Light ☐ Light ☐ Moderate ☑ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☐ Good ☑ Scrappy ☐ Undissolved Filter ☐ Folded ☐

TEM - 2A (8-01)

24-Sep-2004 10:29:29

96233-010A Preset= 100 secs
Vert= 500 counts Disp= 1 Elapsed= 25 secs

Energy	Counts	X-Ray Lines
1.20	116.	Mg K , Mg K , Mg K , As L , As L , As L
1.75	180.	Si K , Si K , W M , W M

Quantex>
0.000 Range= 10.230 keV 10.110
Integral 0 = 4606

TEM ASBESTOS ANALYSIS

EMS Lab No. 96233
Client MACTEC
Sample No. 018

Page ___ of ___

MICROSCOPE

ANALYSIS

Grid Address B
Screen Magnification 9700x
Camera Constant 9.8.4
Accelerating Voltage 100 KV
Beam Current 10 µA

H600A – Serial No. 542-36-01 ☐
H600B – Serial No. 542-05-06 ☒
H600C – Serial No. 542-24-03 ☐

Analyst LCOLK Date 9-26-04

RECEIVING

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
B8	NSD		<5	>5	µm												<5 µm ~~0~~ >5 µm ~~0~~
C16			1														1 ~~0~~ EDS
F5	NSD																~~0~~ ~~0~~
G5	NSD																~~0~~ ~~0~~
H3	NSD																~~0~~ ~~0~~

16 Lines

OBSERVATIONS:

Clean ☐
Debris: ☒ Very Light ☐ Light ☐ Moderate ☒ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☒ Good ☒ Scrappy ☐ Undissolved Filter ☐ Folded ☐

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26-Sep-2004 17:35:08

96233,010E#1,LK Preset= 100 secs
Vert= 200 counts Disp= 1 Elapsed= 23 secs

1.27	220.	Mg K , Mg K , Mg K , As L , As L , As L
1.76	368.	Si K , Si K , W M , W M
6.40	296.	Fe K , Fe K

Quantex>
Quantex>
0.000 Range= 10.230 keV 10.110
Integral 0 = 105

TEM ASBESTOS ANALYSIS

EMS Lab No. 96233
Client MACTEC
Sample No. 019

RECEIVING

METHOD OF ANALYSIS
EPA Yamate Level I ☐
Level II ☐
Level III ☐
AHERA ☐
ASPECT RATIO 3:1 ☐ 5:1 ☑

LENGTHS
All Sizes (EPA) ☐
(µm) : ≥ 0.5 ☑
(µm) : > 5.0 ☐
(µm) : > 10.0 ☐
PCM Range* ☐
*(>0.25 µm width, >5.0 µm length)

TYPE OF SAMPLE
Air ☐
Soil ☐
Bulk ☐
Water ☐
Wipe ☐
Other ☐
Dust/Microvac ☑

TYPE/AREA (mm²)
MCE/385 ☐
MCE/314 ☐
MCE/1017 ☐
Other ☐

PORE SIZE
0.45 µm ☐
0.8 µm ☐
0.1 µm ☐
0.22 µm ☐
Other ☐

G.O. Area (mm²) 0.0 095
No. of G.O. to Analyze 10

PREP
DIRECT PREP ☐
INDIRECT PREP ☐
Volume ____ liters
Working Volume 100 ml
Weight 0.0122 grams
Ashed Area ____ %
Date 09-22-04
Prepared By JAP

ANALYSIS
Grid Address A
Screen Magnification 9700 X
Camera Constant 3864
Accelerating Voltage 100 KV
Beam Current 10 µA
Analyst [signature] Date 9-22-04

Page ____ of ____

MICROSCOPE
H600A - Serial No. 542-36-01 ☐
H600B - Serial No. 542-05-06 ☑
H600C - Serial No. 542-24-03 ☐

A

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
C5	NSD		<5µm	25µm													<5µm NSD / 25µm NSD
E3	NSD																NSD / NSD
B9			11			✓											2 / NSD
E33	NSD																NSD / NSD
F5			1														1 / NSD
~~F34~~ F34	NSD																NSD / NSD

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☑ Very Light ☐ Light ☐ Moderate ☑ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☑ Good ☑ Scrappy ☐ Undissolved Filter ☐ Folded ☐

TEM - 2A (8-01)

TEM ASBESTOS ANALYSIS

EMS Lab No. 96233
Client MACTEC
Sample No. 019

RECEIVING

ANALYSIS

MICROSCOPE

Grid Address B
Screen Magnification 1900 x
Camera Constant 25.1
Accelerating Voltage 100 KV
Beam Current 10 µA

H600A – Serial No. 542-36-01 ☑
H600B – Serial No. 542-05-06 ☐
H600C – Serial No. 542-24-03 ☐

Analyst Radhe Date 9/23/4

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Al	Comments
F4-3		NM	<1	/													EDS
E4-1			1			✓						10	10				
F3 3		NDS															
E5-4		NDS															
H5-6			2	1		✓											

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☐ Very Light ☐ Light ☐ Moderate ☒ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☐ Good ☐ Scrappy ☐ Undissolved Filter ☐ Folded ☐

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23-Sep-2004 00:36:10

96233,19,B,#01,RS
Vert= 500 counts Disp= 1
Preset= Off
Elapsed= 125 secs

Energy	Counts	X-Ray Lines
1.27	1344.	Mg K , Mg K , Mg K
1.76	1273.	Si K , Si K

Quantex>
0.000 Range= 10.230 keV 10.110
Integral 0 = 7040

TEM ASBESTOS ANALYSIS

EMS Lab No. 96233
Client MACTEC
Sample No. 020

Page ___ of ___

RECEIVING

METHOD OF ANALYSIS
EPA Yamate Level I ☐
Level II ☐
Level III ☐
AHERA ☐
ASPECT RATIO 3:1 ☐ 5:1 ☐

LENGTHS
All Sizes (EPA) ☐
(µm) : ≥ 0.5 ☐
(µm) : > 5.0 ☐
(µm) : > 10.0 ☐
PCM Range* ☐
*(>0.25 µm width, >5.0 µm length)

PREP

TYPE OF SAMPLE
Air ☐
Soil ☐
Bulk ☐
Water ☐
Wipe ☐
Other ☐
Dust/Microvac ☑

TYPE/AREA (mm²)
MCE/385 ☐
MCE/314 ☐
MCE/1017 ☑
Other ☐

PORE SIZE
0.45 µm ☐
0.8 µm ☐
0.1 µm ☐
0.22 µm ☑
Other ☐

G.O. Area (mm²) 0.0 0.95
No. of G.O. to Analyze 10

DIRECT PREP ☐
INDIRECT PREP ☐
Volume 100 liters
Working Volume ___ ml
Weight 0.0122 grams
Ashed Area ___ %
Date 9-24-04
Prepared By ~~CK~~ JAP

ANALYSIS

Grid Address A
Screen Magnification 1900 X
Camera Constant 284
Accelerating Voltage 100 KV
Beam Current 10 µA
Analyst Vlock Date 9-24-04

MICROSCOPE
H600A - Serial No. 542-36-01 ☐
H600B - Serial No. 542-05-06 ☑
H600C - Serial No. 542-24-03 ☐

A

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
B54			<5	<5	µm	/						6	10				<5 ≠5 µm EDS
E51				1		/											0 1
F56			1			/											1 0
G53			USD														0 0
E61			USD														0 0

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☑ Very Light ☐ Light ☐ Moderate ☑ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☑ Good ☑ Scrappy ☐ Undissolved Filter ☐ Folded ☐

TEM - 2A (8-01)

24-Sep-2004 18:40:24

96233-0200A Preset= 100 secs
Vert= 500 counts Disp= 1 Elapsed= 21 secs

Energy	Counts	X-Ray Lines
1.20	163.	Mg K , Mg K , Mg K , As L , As L , As L
1.76	263.	Si K , Si K , W M , W M
3.70	52.	Ca K , Ca K
4.52	714.	Ti K , Ti K
4.95	97.	V K , V K , Ti K , Ti K

Quantex>
0.000 Range= 10.230 keV 10.110
Integral 0 = 6506

TEM ASBESTOS ANALYSIS

EMS Lab No. 96233

Client MACTEC

Sample No. 020

RECEIVING

ANALYSIS

P[redacted]

MICROSCOPE

Grid Address B

Screen Magnification 1900X

Camera Constant 7.84

Accelerating Voltage 100 KV

Beam Current 10 µA

H600A – Serial No. 542-36-01 ☐

H600B – Serial No. 542-05-06 ☒

H600C – Serial No. 542-24-03 ☐

Analyst Leone Date 9-16-04

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
H/B3	NSD		<5	>5	µm												<5 - >5 µm
G4	NSD																
H5	NSD																
F4	NSD																
E4	NSD																

16 Lines

OBSERVATIONS:

Clean ☐

Debris: ☒ Very Light ☐ Light ☐ Moderate ☒ Heavy ☐ Very Heavy ☐

Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐

Condition of the Grid: ☒ Good ☒ Scrappy ☐ Undissolved Filter ☐ Folded ☐

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TEM ASBESTOS ANALYSIS

EMS Lab No. 96233
Client MAETEC
Sample No. 021

RECEIVING

METHOD OF ANALYSIS
EPA Yamate Level I ☐
Level II ☐
Level III ☐
AHERA ☐
ASPECT RATIO 3:1 ☐ 5:1 ☐

LENGTHS
All Sizes (EPA) ☐
(µm) : ≥ 0.5 ☐
(µm) : > 5.0 ☐
(µm) : > 10.0 ☐
PCM Range* ☐
*(>0.25 µm width, >5.0 µm length)

PREP

TYPE OF SAMPLE
Air ☐
Soil ☐
Bulk ☐
Water ☐
Wipe ☐
Other ☐
Dust/Microvac ☑

TYPE/AREA (mm²)
MCE/385 ☐
MCE/314 ☐
MCE/1017 ☑
Other ☐

PORE SIZE
0.45 µm ☐
0.8 µm ☐
0.1 µm ☐
0.22 µm ☑
Other ☐

G.O. Area (mm²) 0.0 095
No. of G.O. to Analyze 10

DIRECT PREP ☐
INDIRECT PREP ☐
Volume 100 liters
Working Volume ____ ml
Weight 0.0123 grams
Ashed Area ____ %
Date 9-24-04
Prepared By [illegible]

ANALYSIS

Grid Address A
Screen Magnification 10K x
Camera Constant 25.4
Accelerating Voltage 100 KV
Beam Current 10 µA

Analyst [illegible] Date 9-24-04

Page A of

MICROSCOPE
H600A - Serial No. 542-36-01 ☐
H600B - Serial No. 542-05-06 ☑
H600C - Serial No. 542-24-03 ☐

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
C4	NSD		25	75	[illegible]												25 75 µm
F5	1			1		/						6	10				0 1 EDS
C4	NSD																0 0
E3			1			/											1 0
F4	NSD																0 0

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☑ Very Light ☐ Light ☐ Moderate ☑ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☐ Good ☐ Scrappy ☐ Undissolved Filter ☐ Folded ☐

TEM - 2A (8-01)

24-Sep-2004 10:57:53

96233-021A
Vert= 500 counts Disp= 1

Preset= 100 secs
Elapsed= 28 secs

Energy	Counts	X-Ray Lines
1.26	122.	Mg K , Mg K , Mg K , As L , As L
1.78	215.	Si K , Si K , W M , W M

Quantex>
0.000 Range= 10.230 keV 10.110
Integral 0 = 11657

TEM ASBESTOS ANALYSIS

EMS Lab No. 96233
Client MACTEC
Sample No. 02

RECEIVING

ANALYSIS

MICROSCOPE

Grid Address P
Screen Magnification 9200x
Camera Constant 28.4
Accelerating Voltage 100 KV
Beam Current 10 µA

H600A – Serial No. 542-36-01 ☐
H600B – Serial No. 542-05-06 ☒
H600C – Serial No. 542-24-03 ☐

Analyst [signature] Date 9-26-04

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
B5	NSD		<5	>5	µm												<5 >5 µm
E3	NSD																∅ ∅
F23	NSD																∅ ∅
F16			1	1													1 1
H13	NSD																∅ ∅

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☒ Very Light ☐ Light ☐ Moderate ☒ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☒ Good ☒ Scrappy ☐ Undissolved Filter ☐ Folded ☐

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TEM ASBESTOS ANALYSIS

RECEIVING

EMS Lab No. 96233
Client MAETEE
Sample No. 022

METHOD OF ANALYSIS
- EPA Yamate Level I ☐
- Level II ☐
- Level III ☐
- AHERA ☐
- ASPECT RATIO 3:1 ☐ 5:1 ☐

LENGTHS
- All Sizes (EPA) ☐
- (µm) : ≥ 0.5 ☐
- (µm) : > 5.0 ☐
- (µm) : > 10.0 ☐
- PCM Range* ☐

*(>0.25 µm width, >5.0 µm length)

TYPE OF SAMPLE
- Air ☐
- Soil ☐
- Bulk ☐
- Water ☐
- Wipe ☐
- Other ☐
- Dust/Microvac ☑

G.O. Area (mm²) 0.0 095
No. of G.O. to Analyze 10

FILTER TYPE/AREA (mm²)
- MCE/385 ☐
- MCE/314 ☐
- MCE/1017 ☑
- Other ☐

PORE SIZE
- 0.45 µm ☐
- 0.8 µm ☐
- 0.1 µm ☐
- 0.22 µm ☑
- Other ☐

PREP
- DIRECT PREP ☐
- INDIRECT PREP ☐

Volume 600 liters
Working Volume ______ ml
Weight 0.0122 grams
Ashed Area ______ %
Date 9-24-04
Prepared By JAD

ANALYSIS

Grid Address A
Screen Magnification 10,000 X
Camera Constant 28
Accelerating Voltage 100 KV
Beam Current 10 µA

Page of

MICROSCOPE
- H600A - Serial No. 542-36-01 ☐
- H600B - Serial No. 542-05-06 ☑
- H600C - Serial No. 542-24-03 ☐

A

Analyst LBeall Date 9-26-04

Grid Opening	Structure Number	Structure	Width	Length	Thickness	Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	Na	Mg	Si	Ca	Fe	Id	Comments
			<5	>5	µm												<5 ≥5 µm
C4 1	NSD																NSD
A4 4	NSD																NSD
G3 3	NSD																NSD
F3 1	NSD																NSD 1 non asbestos fibre 1/10
H4 1			1	1		✓						7	10				〃 〃 ~~[illegible]~~ UK

16 Lines

OBSERVATIONS:
- Clean ☐
- Debris: ☑ Very Light ☐ Light ☐ Moderate ☑ Heavy ☐ Very Heavy ☐
- Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
- Condition of the Grid: ☐ Good ☐ Scrappy ☐ Undissolved Filter ☐ Folded ☐

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26-Sep-2004 11:44:01

96233,022A #1,LK Preset= 100 secs
Vert= 500 counts Disp= 1 Elapsed= 67 secs

Energy	Counts	X-Ray Lines
1.27	493.	Mg K , Mg K , Mg K , As L , As L , As L
1.76	744.	Si K , Si K , W M , W M

Quantex>
0.000 Range= 10.230 keV 10.110
Integral 0 = 116

TEM ASBESTOS ANALYSIS

EMS Lab No. 96233

Client MACTEC

Sample No. 022

RECEIVING

ANALYSIS

MICROSCOPE

Grid Address B

Screen Magnification 4200x

Camera Constant 29.4

Accelerating Voltage 100 KV

Beam Current 10 µA

H600A – Serial No. 542-36-01 ☐

H600B – Serial No. 542-05-06 ☒

H600C – Serial No. 542-24-03 ☐

Analyst [signature] Date 9-26-04

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
F14			<5	~5	µm	✓											<5 1 >5 0 µm
E10	NSD																0 0
F23	NS			1		✓											0 1
G23	NSD																0 0
C33			1			✓											1 0

16 Lines

OBSERVATIONS:

Clean ☐

Debris: ☒ Very Light ☐ Light ☐ Moderate ☒ Heavy ☐ Very Heavy ☐

Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐

Condition of the Grid: ☒ Good ☒ Scrappy ☐ Undissolved Filter ☐ Folded ☐

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TEM ASBESTOS ANALYSIS

EMS Lab No. 96233
Client Mr ACTEC
Sample No. 023

RECEIVING

METHOD OF ANALYSIS
EPA Yamate Level I ☐
Level II ☐
Level III ☐
AHERA ☐
ASPECT RATIO 3:1 ☐ 5:1 ☐

LENGTHS
All Sizes (EPA) ☐
(µm) : ≥ 0.5 ☐
(µm) : > 5.0 ☐
(µm) : > 10.0 ☐
PCM Range* ☐
*(>0.25 µm width, >5.0 µm length)

PREP

TYPE OF SAMPLE
Air ☐
Soil ☐
Bulk ☐
Water ☐
Wipe ☐
Other ☐
Dust/Microvac ☑

ER TYPE/AREA (mm²)
MCE/385 ☐
MCE/314 ☐
MCE/1017 ☑
Other ☐

PORE SIZE
0.45 µm ☐
0.8 µm ☐
0.1 µm ☐
0.22 µm ☑
Other ☐

G.O. Area (mm²) 0.0 095
No. of G.O. to Analyze 10

DIRECT PREP ☐
INDIRECT PREP ☐
Volume 100 liters
Working Volume ____ ml
Weight 0.0122 grams
Ashed Area ____ %
Date 9-27-04
Prepared By [illegible]

ANALYSIS

Grid Address [illegible]
Screen Magnification 1000 X
Camera Constant 5.24
Accelerating Voltage 100 KV
Beam Current 10 µA
Analyst [illegible]
Date 9-26-04

Page ____ of ____

MICROSCOPE
H600A - Serial No. 542-36-01 ☐
H600B - Serial No. 542-05-06 ☑
H600C - Serial No. 542-24-03 ☐

A

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
C33			<5	25	µm												<5 25 µm EDS
E41	NSD																NSD
E33	NSD																NSD
F33			1	1													1 1
	NSD																NSD

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☑ Very Light ☐ Light ☐ Moderate ☑ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☑ Good ☑ Scrappy ☐ Undissolved Filter ☐ Folded ☐

TEM - 2A (8-01)

26-Sep-2004 11:59:26

96233,0230,#1,LK Preset= 100 secs
Vert= 500 counts Disp= 1 Elapsed= 21 secs

Energy	Counts	X-Ray Lines
1.20	258.	Mg K , Mg K , Mg K , As L , As L , As L
1.76	377.	Si K , Si K , W M , W M
3.70	87.	Ca K , Ca K
6.42	77.	Fe K , Fe K

Quantex>
0.000 Range= 10.230 keV 10.110
Integral 0 = 95

TEM ASBESTOS ANALYSIS

EMS Lab No. 96233

Client MACTEC

Sample No. 023

RECEIVING

ANALYSIS

MICROSCOPE

Grid Address B3

Screen Magnification 19700x

Camera Constant 25.4

Accelerating Voltage 100 KV

Beam Current 10 µA

H600A – Serial No. 542-36-01 ☐

H600B – Serial No. 542-05-06 ☐

H600C – Serial No. 542-24-03 ☐

Analyst LKelle Date 9-26-01

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
B4 3			<5	>5		✓											<5 >5 µm
C5 4	NSD																✓ ✓
E4 6	NSD																✓ ✓
C4 3	NSD																✓ ✓
E3 1	NSD																✓ ✓

16 Lines

OBSERVATIONS:

Clean ☐

Debris: ☑ Very Light ☐ Light ☐ Moderate ☑ Heavy ☐ Very Heavy ☐

Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐

Condition of the Grid: ☐ Good ☑ Scrappy ☐ Undissolved Filter ☐ Folded ☐

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TEM ASBESTOS ANALYSIS

EMS Lab No. 96233
Client MACTEC
Sample No. 024

RECEIVING

METHOD OF ANALYSIS
EPA Yamate Level I ☐
Level II ☐
Level III ☐
AHERA ☐
ASPECT RATIO 3:1 ☐ 5:1 ☐

LENGTHS
All Sizes (EPA) ☐
(µm) : ≥ 0.5 ☐
(µm) : > 5.0 ☐
(µm) : > 10.0 ☐
PCM Range* ☐
*(>0.25 µm width, >5.0 µm length)

PREP

TYPE OF SAMPLE
Air ☐
Soil ☐
Bulk ☐
Water ☐
Wipe ☐
Other ☐
Dust/Microvac ☑

FILTER TYPE/AREA (mm²)
MCE/385 ☐
MCE/314 ☐
MCE/1017 ☑
Other ☐

PORE SIZE
0.45 µm ☐
0.8 µm ☐
0.1 µm ☐
0.22 µm ☑
Other ☐

G.O. Area (mm²) 0.0 095
No. of G.O. to Analyze 10

DIRECT PREP ☐
INDIRECT PREP ☐
Volume 100 liters
Working Volume ____ ml
Weight 0.0122 grams
Ashed Area ____ %
Date 92404
Prepared By [illegible]

ANALYSIS

Grid Address A 14200 X
Screen Magnification
Camera Constant 28.4
Accelerating Voltage 100 KV
Beam Current 10 µA
Analyst LClaus Date 9-26-0

MICROSCOPE
H600A - Serial No. 542-36-01 ☐
H600B - Serial No. 542-05-06 ☑
H600C - Serial No. 542-24-03 ☐

Page A of

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
F4			<5 11	11	µm	/						6	10				<5 ≥5 µm
E3	NSD																2 2
G3	NSD																0 0
H4	NSD																0 0
F3	NSD																0 0
																	0 0

16 Lines

OBSERVATIONS:

Clean ☐						
Debris: ☑	Very Light ☐	Light ☐	Moderate ☑	Heavy ☐	Very Heavy ☐	
Gypsum: ☐	Very Light ☐	Light ☐	Moderate ☐	Heavy ☐	Very Heavy ☐	
Condition of the Grid: ☐	Good ☑	Scrappy ☐	Undissolved Filter ☐	Folded ☐		

TEM - 2A (8-01)

TEM ASBESTOS ANALYSIS

EMS Lab No. 96233
Client MACTEC
Sample No. 024

RECEIVING

ANALYSIS

Page [redacted] of [redacted]

MICROSCOPE

Grid Address B
Screen Magnification 1970x
Camera Constant 28.4
Accelerating Voltage 100 KV
Beam Current 10 µA

H600A – Serial No. 542-36-01 ☐
H600B – Serial No. 542-05-06 ☑
H600C – Serial No. 542-24-03 ☐

Analyst [redacted] Date 9/26/01

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
C7	NSD		<5	>5	µm												<5 Ø >5 Ø µm
E43	NSD																Ø Ø
C54			1			✓											1 Ø
E61	NSD																Ø Ø
F53	NSD																Ø Ø

16 Lines

OBSERVATIONS:

Clean ☐						
Debris: ☑	Very Light ☐	Light ☐	Moderate ☑	Heavy ☐	Very Heavy ☐	
Gypsum: ☐	Very Light ☐	Light ☐	Moderate ☐	Heavy ☐	Very Heavy ☐	
Condition of the Grid: ☑	Good ☑	Scrappy ☐	Undissolved Filter ☐	Folded ☐		

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26-Sep-2004 12:15:18

96233,024AN1,LK
Vert= 500 counts Disp= 1

Preset= 100 secs
Elapsed= 22 secs

Energy	Counts	X-Ray Lines
1.26	255.	Mg K , Mg K , Mg K , As L , As L
1.75	402.	Si K , Si K , W M , W M
3.71	57.	Ca K , Ca K
6.43	81.	Fe K , Fe K

Quantex>
0.000 Range= 10.230 keV 10.110
Integral 8 = 87

23-Sep-2004 08:40:00

96233,25,A,#01,SA
Vert= 500 counts Disp= 1
Preset= Off
Elapsed= 140 secs

Energy	Counts	X-Ray Lines
1.27	1356.	Mg K , Mg K , Mg K
1.76	1287.	Si K , Si K

Quantex>
0.000 Range= 10.230 keV 10.110
Integral 0 = 9068

TEM ASBESTOS ANALYSIS

RECEIVING

EMS Lab No. 96233

Client MACTEC

Sample No. 025

METHOD OF ANALYSIS
- EPA Yamate Level I ☐
- Level II ☐
- Level III ☐
- AHERA ☐
- ASPECT RATIO 3:1 ☐ 5:1 ☑

LENGTHS
- All Sizes (EPA) ☐
- (µm) : ≥ 0.5 ☑
- (µm) : > 5.0 ☐
- (µm) : > 10.0 ☐
- PCM Range* ☐

*(>0.25 µm width, >5.0 µm length)

TYPE OF SAMPLE
- Air ☐
- Soil ☐
- Bulk ☐
- Water ☐
- Wipe ☐
- Other ☐
- Dust/Microvac ☑

FILTER TYPE/AREA (mm²)
- MCE/385 ☐
- MCE/314 ☐
- MCE/1017 ☐
- Other ☐

PORE SIZE
- 0.45 µm ☐
- 0.8 µm ☐
- 0.1 µm ☐
- 0.22 µm ☐
- Other ☐

G.O. Area (mm²) 0.0 095

No. of G.O. to Analyze 10

PREP

DIRECT PREP ☐

INDIRECT PREP ☐

Volume ______ liters

Working Volume 50 ml

Weight 0.0121 grams

Ashed Area ______ %

Date 09-22-04

Prepared By JAP

ANALYSIS

Grid Address 9200

Screen Magnification 28K

Camera Constant

Accelerating Voltage 100 KV

Beam Current 10 µA

Page ___ of ___

MICROSCOPE
- H600A - Serial No. 542-36-01 ☐
- H600B - Serial No. 542-05-06 ☑
- H600C - Serial No. 542-24-03 ☐

A

Analyst SA Date 9/23/04

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
F5 3			<5um	75u													<5um 75um.
E5 1	NSD		NSD														3 0
F5 3			1			✓						5	10				
E3 3			2			✓											
C3 3																	
F3 3	NSD																
G3 4	NSD																

16 Lines

OBSERVATIONS: Clean ☑

Debris: ☐	Very Light ☐	Light ☐	Moderate ☑	Heavy ☐	Very Heavy ☐
Gypsum: ☐	Very Light ☐	Light ☐	Moderate ☐	Heavy ☐	Very Heavy ☐
Condition of the Grid: ☐	Good ☐	Scrappy ☐	Undissolved Filter ☐	Folded ☐	

TEM ASBESTOS ANALYSIS

EMS Lab No. 96233
Client MACTEC
Sample No. 025

Page 6 of 6

MICROSCOPE

ANALYSIS

Grid Address B
Screen Magnification 9.4KX
Camera Constant 219.V
Accelerating Voltage 100 KV
Beam Current 90 µA

H600A – Serial No. 542-36-01 ☑
H600B – Serial No. 542-05-06 ☐
H600C – Serial No. 542-24-03 ☐

Analyst Radka Date 9/23/6

RECEIVING

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
W-4		NAG															
H-3		NAG															
E-4		NAG															
E3-6		NAG															
C2-6		NAG															

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☐ Very Light ☐ Light ☐ Moderate ☑ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☐ Good ☐ Scrappy ☐ Undissolved Filter ☐ Folded ☐

TEM - 2B (8-01)

TEM ASBESTOS ANALYSIS

EMS Lab No. 96233

Client MACTEC

Sample No. 026

RECEIVING

METHOD OF ANALYSIS
- EPA Yamate Level I ☐
- Level II ☐
- Level III ☐
- AHERA ☐
- ASPECT RATIO 3:1 ☐ 5:1 ☐

LENGTHS
- All Sizes (EPA) ☐
- (µm) : ≥ 0.5 ☐
- (µm) : > 5.0 ☐
- (µm) : > 10.0 ☐
- PCM Range* ☐
  *(>0.25 µm width, >5.0 µm length)

PREP

TYPE OF SAMPLE
- Air ☐
- Soil ☐
- Bulk ☐
- Water ☐
- Wipe ☐
- Other ☐
- Dust/Microvac ☑

TER TYPE/AREA (mm²)
- MCE/385 ☐
- MCE/314 ☐
- MCE/1017 ☑
- Other ☐

PORE SIZE
- 0.45 µm ☐
- 0.8 µm ☐
- 0.1 µm ☐
- 0.22 µm ☐
- Other ☑

G.O. Area (mm²) 0.0 095

No. of G.O. to Analyze 10

DIRECT PREP ☐

INDIRECT PREP ☐

Volume 100 liters

Working Volume ____ ml

Weight 0.0123 grams

Ashed Area ____ %

Date 9-24-04

Prepared By JAP

ANALYSIS

Grid Address A

Screen Magnification 4200 X

Camera Constant 7.64

Accelerating Voltage 100 KV

Beam Current 10 µA

Analyst [illegible] Date 9-26-04

MICROSCOPE
- H600A - Serial No. 542-36-01 ☐
- H600B - Serial No. 542-05-06 ☑
- H600C - Serial No. 542-24-03 ☐

A

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
B41	NSP		<5	>5													<5 µm >5 µm
C46	NSP																Ø Ø
E40	NSP																Ø Ø
G41	NSP																Ø Ø
H43			1	1		✓						5	10				1 1 Ø [illegible] EDS

16 Lines

OBSERVATIONS:

Clean ☐						
Debris: ☐	Very Light ☐	Light ☐	Moderate ☑	Heavy ☐	Very Heavy ☐	
Gypsum: ☐	Very Light ☐	Light ☐	Moderate ☐	Heavy ☐	Very Heavy ☐	
Condition of the Grid: ☑	Good ☑	Scrappy ☐	Undissolved Filter ☐	Folded ☐		

TEM - 2A (8-01)

26-Sep-2004 13:30:03

96233,026A#1,LK Preset= 100 secs
Vert= 500 counts Disp= 1 Elapsed= 24 secs

Energy	Counts	X-Ray Lines
1.28	164.	Mg K , Mg K , Mg K , As L , As L , As L
1.75	357.	Si K , Si K , W M , W M

Quantex>
0.000 Range= 10.230 keV 10.110
Integral 0 = 57

TEM ASBESTOS ANALYSIS

EMS Lab No. 46233

Client MALTEC

Sample No. 026

RECEIVING

ANALYSIS

Page of

MICROSCOPE

Grid Address B1

Screen Magnification 19706x

Camera Constant 2.84

Accelerating Voltage 100 KV

Beam Current 10 µA

H600A – Serial No. 542-36-01 ☐

H600B – Serial No. 542-05-06 ☒

H600C – Serial No. 542-24-03 ☐

Analyst C Kou Date 9-26-04

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
E3	NSD																
E3	NSD																
B4	NSD																
E4	NSD																
B5	NSD																

16 Lines

OBSERVATIONS:

Clean ☐

Debris: ☒ Very Light ☐ Light ☐ Moderate ☒ Heavy ☐ Very Heavy ☐

Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐

Condition of the Grid: ☒ Good ☒ Scrappy ☐ Undissolved Filter ☐ Folded ☐

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TEM ASBESTOS ANALYSIS

EMS Lab No. 96233
Client MACTEC
Sample No. 027

RECEIVING

METHOD OF ANALYSIS
EPA Yamate Level I ☐
Level II ☐
Level III ☐
AHERA ☐
ASPECT RATIO 3:1 ☐ 5:1 ☐

LENGTHS
All Sizes (EPA) ☐
(µm) : ≥ 0.5 ☐
(µm) : > 5.0 ☐
(µm) : > 10.0 ☐
PCM Range* ☐
*(>0.25 µm width, >5.0 µm length)

PREP

TYPE OF SAMPLE
Air ☐
Soil ☐
Bulk ☐
Water ☐
Wipe ☐
Other ☐
Dust/Microvac ☐

FILTER TYPE/AREA (mm²)
MCE/385 ☐
MCE/314 ☐
MCE/1017 ☐
Other ☐

PORE SIZE
0.45 µm ☐
0.8 µm ☐
0.1 µm ☐
0.22 µm ☐
Other ☐

G.O. Area (mm²) 0.0 0.95
No. of G.O. to Analyze 10

DIRECT PREP ☐
INDIRECT PREP ☐
Volume 106 liters
Working Volume ___ ml
Weight 0.0122 grams
Ashed Area ___ %
Date 9-24-04
Prepared By JAP

ANALYSIS

MICROSCOPE
H600A - Serial No. 542-36-01 ☐
H600B - Serial No. 542-05-06 ☑
H600C - Serial No. 542-24-03 ☐

Grid Address A1
Screen Magnification 4200 X
Camera Constant 2.54
Accelerating Voltage 100 KV
Beam Current 10 µA

Analyst [signature] Date 9-26-04

A

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
G5	NSD		<5	>5	µm												<5 >5 µm
E46	NSD																0 0
E5	NSD																0 0
G33	NSD																0 0
H31	NSD																0 0

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☐ Very Light ☐ Light ☐ Moderate ☑ Heavy ☐ Very Heavy ☐
Gypsum: ☑ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☐ Good ☑ Scrappy ☐ Undissolved Filter ☐ Folded ☐

TEM - 2A (8-01)

TEM ASBESTOS ANALYSIS

EMS Lab No. 96233
Client MACTEC
Sample No. 027

Page ___ of ___

MICROSCOPE

ANALYSIS

Grid Address 13
Screen Magnification 19,400x
Camera Constant 27.7
Accelerating Voltage 100 KV
Beam Current 10 µA

H600A – Serial No. 542-36-01 ☐
H600B – Serial No. 542-05-06 ☐
H600C – Serial No. 542-24-03 ☒

Analyst NJA Date 9/26

RECEIVING

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
			<5M	75Mm													
F2-4	NSD		0	0													
C4-6	NSD																
F5-1	NSD																
B4-1	NSD																
F2-3	NSD																

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☒ Very Light ☐ Light ☒ Moderate ☒ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☒ Good ☒ Scrappy ☐ Undissolved Filter ☐ Folded ☐

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TEM ASBESTOS ANALYSIS

EMS Lab No. 96233
Client MACTEC
Sample No. 028

RECEIVING

METHOD OF ANALYSIS
EPA Yamate Level I ☐
Level II ☐
Level III ☐
AHERA ☐
ASPECT RATIO 3:1 ☐ 5:1 ☑

LENGTHS
All Sizes (EPA) ☐
(µm) : ≥ 0.5 ☑
(µm) : > 5.0 ☐
(µm) : > 10.0 ☐
PCM Range* ☐
*(>0.25 µm width, >5.0 µm length)

TYPE OF SAMPLE
Air ☐
Soil ☐
Bulk ☐
Water ☐
Wipe ☐
Other ☐
Dust/Microvac ☑

ER TYPE/AREA (mm²)
MCE/385 ☐
MCE/314 ☐
MCE/1017 ☐
Other ☐

PORE SIZE
0.45 µm ☐
0.8 µm ☐
0.1 µm ☐
0.22 µm ☐
Other ☐

G.O. Area (mm²) 0.0 095
No. of G.O. to Analyze 10

PREP

SEMI-QUANT

DIRECT PREP ☐
INDIRECT PREP ☐
Volume ____ liters
Working Volume 100 ml
Weight 0.0123 grams
Ashed Area ____ %

Date 09-25-04
Prepared By JAP

ANALYSIS

Grid Address A
Screen Magnification 19200 X
Camera Constant 284
Accelerating Voltage 100 KV
Beam Current 10 µA

Analyst [signature] Date 9-26-04

Page ____ of ____

MICROSCOPE
H600A - Serial No. 542-36-01 ☐
H600B - Serial No. 542-05-06 ☑
H600C - Serial No. 542-24-03 ☐

A

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
F5	NSD		<5	>5	µm												<5µm Ø >5µm Ø
C3	NSD																Ø Ø
G4			1'			/						~~57~~	10				1 Ø EDS
F33	NSD																Ø Ø
E33	NSD																Ø Ø

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☑ Very Light ☐ Light ☐ Moderate ☑ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☐ Good ☑ Scrappy ☐ Undissolved Filter ☐ Folded ☐

TEM - 2A (8-01)

26-Sep-2004 15:10:14

96233,020@#1,LK
Vert= 200 counts Disp= 1
Preset= 100 secs
Elapsed= 24 secs

Energy	Counts	X-Ray Lines
1.28	160.	Mg K , Mg K , Mg K , As L , As L , As L
1.76	248.	Si K , Si K , W M , W M
3.64	27.	Ca K , Sb L
6.42	51.	Fe K , Fe K

Quantex>
0.000 Range= 10.230 keV 10.110
Integral 8 = 103

TEM ASBESTOS ANALYSIS

EMS Lab No. 96233
Client MACTEC
Sample No. 028

RECEIVING

ANALYSIS

e of
MICROSCOPE

Grid Address B
Screen Magnification 19,400 x
Camera Constant 27.7
Accelerating Voltage 100 KV
Beam Current 10 µA

H600A – Serial No. 542-36-01 ☐
H600B – Serial No. 542-05-06 ☐
H600C – Serial No. 542-24-03 ☑

Analyst NJA Date 9/27

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
E3-1	NSD		<5M	>5M	m												
F3-3	NSD																
G4-1	NSD																
K4-1	NSD																
H4-3	NSD																

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☑ Very Light ☐ Light ☑ Moderate ☑ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☑ Good ☑ Scrappy ☐ Undissolved Filter ☐ Folded ☐

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DATE: September 29, 2004

CLIENT: MACTEC Engineering
200 Citadel Dr.
Los Angeles, CA 90040

ATTENTION: Don Harman

REFERENCE: 4952042861
PO# BPO18040461 REPORT NO: 96233

DATE COLLECTED: 9/16, 17/04 by S. Campbell DATE ANALYZED: 9/24, 28/04

ACCREDITATION: National Institute of Standards and Technology through NVLAP

SUBJECT: SEMI-QUANTITATIVE ASBESTOS ANALYSIS BY TEM

The microvac samples for semi-quantitative asbestos analysis were suspended in known volumes of fiber-free water and sonicated to disperse the material. A droplet on prepared TEM grid is weighed for each sample. An area of 0.104 sq. ft (15 sq. in.) was sampled. The semi-quantitative micro-vac results for samples 1-35 are as follows:

Sample	Total Asbestos Structures/ft^2	Fibers>5µm in length Structures/ft^2	Analytical Sensitivity Structures/ft^2
1	320 X 10^6	150 X 10^6	3.0 X 10^6
2	60 X 10^6	6 X 10^6.	6.0 X10^6
3	Too much debris; could not be analyzed		
4	250 X 10^6	12 X 10^6	3.0 X 10^6
5	27 X 10^6	<3.0 X 10^6	3.0 X 10^6
6	49 X 10^6	12 X 10^6	6.1 X 10^6
7	<6.0 X 10^6	<6.0 X 10^6	6.0 X 10^6
8	48 X 10^6	6.0 X 10^6	6.0 X 10^6
9	42 X 10^6	6.0 X 10^6	6.0 X 10^6
10	33 X 10^6	6.0 X 10^6	3.0 X 10^6
11	24 X 10^6	<6.0 X 10^6	6.0 X 10^6
12	12 X 10^6	<3.0 X 10^6	3.0 X 10^6
13	83 X 10^6	12 X 10^6	3.0 X 10^6
14	35 X 10^6	<6.0 X 10^6	6.0 X 10^6
15	18 X 10^6	5.9 X 10^6	5.9 X 10^6
16	15 X 10^6	<3.0 X 10^6	3.0 X 10^6
17	<6.0 X 10^6	<6.0 X 10^6	6.0 X 10^6
18	35 X 10^6	5.9 X 10^6	5.9 X 10^6
19	41 X 10^6	5.9 X 10^6	5.9 X 10^6
20	18 X 10^6	12 X 10^6	5.9 X 10^6
21	23 X 10^6	12 X 10^6	5.8 X 10^6
22	29 X 10^6	12 X 10^6	5.9 X 10^6
23	29 X 10^6	18 X 10^6	5.9 X 10^6
24	29 X 10^6	12 X 10^6	5.9 X 10^6
25	9.0 X 10^6	<3.0 X 10^6	3.0 X 10^6
26	12 X 10^6	5.8 X 10^6	5.8 X 10^6
27	<5.9 X 10^6	<5.9 X 10^6	5.9 X 10^6
28	5.8 X 10^6	<5.8 X 10^6	5.8 X 10^6
29	35 X 10^6	8.7 X 10^6	2.9 X 10^6

CONTINUE PG. 2

CLIENT: MACTEC Engineering
REFERENCE: 4952042861, PO# BPO18040461
REPORT NO: 96233

30	$<5.8 \times 10^6$	$<5.8 \times 10^6$	5.8×10^6
31	24×10^6	$<6.0 \times 10^6$	6.0×10^6
32	29×10^6	$<5.7 \times 10^6$	5.7×10^6
33	18×10^6	$<5.9 \times 10^6$	5.9×10^6
34	$<3.0 \times 10^6$	$<3.0 \times 10^6$	3.0×10^6
35	29×10^6	2.9×10^6	2.9×10^6

The samples were heavy with debris. The analytical sensitivity of 1×10^6 structures per square foot could not be reached.

The asbestiform is chrysotile. Sample 001 had both chrysotile and crocidolite; Sample 006 had amosite and chrysotile.

The analytical sensitivity suggested in full quantitative method is approximately asbestos 1×10^6 asbestos structures per square foot. The present guidelines about contamination levels indicate that above 10 structures/ft^2 is considered a low level of contamination and above 100×10^6 asbestos structures /ft^2 is considered significantly contaminated.

The results of the analyses and the detection limits are summarized on the following pages.

Respectfully submitted,

EMS LABORATORIES, INC.

B. M. Kolk
Laboratory Director

BMK/ah

NOTE: The results of the analysis are based upon the samples submitted to the laboratory. No representation is made regarding the sampling area other than that implied by the analytical results for the immediate vicinity of the samples analyzed as calculated from the data presented with those samples.
This report, from a NIST laboratory through NVLAP, must not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government.
This report shall not be reproduced, except in full, without the written approval of EMS Laboratories, Inc.
Any deviation or exclusion from the test method is noted in this cover letter.
Unless otherwise noted in this cover letter, the samples were received properly packaged, clearly identified and intact.

SUBMITTAL FORM/*Laboratory Services* 96233

PAGE ___ OF ___

TURNAROUND TIME: STD ✓ 48 HR. ___ 24 HR. ___
<8 HR. ___ WKND ___ OTHER: ___

RELINQUISHED BY Don Harman
TIME / DATE 1415 9/17/04

CLIENT MACTEC
ADDRESS ___
TELEPHONE (323) 889-5378
CONTACT Don Harman

DATE OF SHIPMENT ___ CARRIER ___
CLIENT P.O. NO. ___
CLIENT JOB/PROJECT ID NO(S). HCJ 495204286 1
PACKAGE SHIPPED FROM ___

RESULTS REQUESTED VIA VERBAL ☐ FAX ☒
CLIENT FAX NO. (323) ~~889~~ 721-6700
(NOTE: Complete written reports will follow all analyses, in addition to any prior transmitted verbal or fax results.)

DATE/TIME OF SAMPLE COLLECTION 9/16 & 9/17
SAMPLE PRESERVATIVES None HOLDING TIMES N/A
NO. OF SAMPLES SENT 35 SAMPLER'S NAME ___ / Scott Campbell
SIGNATURE PRINTED

TYPE: ☐ WATER ☐ WASTE WATER ☐ SOIL ☐ FILTER ☐ SORBENT TUBE ☐ IMPINGER ☒ OTHER ___

(FOR EMS ONLY) EMS Sample No.	CLIENT SAMPLE NO.	DESCRIPTION/LOCATION/ANALYSIS	VOLUME, TIME, WEIGHT (IF APPLICABLE)
96233-1735	1 – 35	Microvac for Asbestos	15 cm
		~~Volume = 1000 cc~~	

(SF 5/00)

96233

FOR EMS ONLY

Laboratory No. ___ Received By ___ Time 2:20 PM
Date of Package Delivery 09-17-04 Shipping Bill Retained: YES ☐ NONE ☒
Condition of Package on Receipt Good Condition of Custody Seal None
(NOTE: If the package has sustained substantial damage or the custody seal is broken, stop and contact the project manager and the shipper.)
No. of Samples 35 Chain-of-Custody Signature ___
Date of Acceptance into Sample Bank 09-17-04 Misc. Info. ___
Disposition of Samples EMS

EMS LABORATORIES 117 West Bellevue Drive / Pasadena CA 91105-2503 / 626-568-4065

TEM ASBESTOS ANALYSIS

Semiquantitative

EMS Lab No. 96233
Client MACTEC
Sample No. 001

Page ___ of ___

RECEIVING

METHOD OF ANALYSIS: EPA Yamate Level I ☐ Level II ☐ Level III ☐ AHERA ☐ ASPECT RATIO 3:1 ☐ 5:1 ☒

LENGTHS: All Sizes (EPA) ☐ (µm) : ≥ 0.5 ☒ (µm) : > 5.0 ☐ (µm) : > 10.0 ☐ PCM Range* ☐ (*>0.25 µm width, >5.0 µm length)

PREP

TYPE OF SAMPLE: Air ☐ Soil ☐ Bulk ☐ Water ☐ Wipe ☐ Other ☐ Dust/Microvac ☒

FILTER TYPE/AREA (mm²): MCE/385 ☐ MCE/314 ☐ MCE/1017 ☐ Other ☐

PORE SIZE: 0.45 µm ☐ 0.8 µm ☐ 0.1 µm ☐ 0.22 µm ☐ Other ☐

G.O. Area (mm²) 0.0095
No. of G.O. to Analyze 10

DIRECT PREP ☐
INDIRECT PREP ☐
Volume ___ liters
Working Volume 50 ml
Weight 0.0120 grams
Ashed Area ___ %

Date 9-22-04
Prepared By JAP

area - 0.1 Ah²

ANALYSIS

Grid Address A1
Screen Magnification 19400X
Camera Constant 29.8
Accelerating Voltage 100 KV
Beam Current 10 µA

MICROSCOPE: H600A - Serial No. 542-36-01 ☒ H600B - Serial No. 542-05-06 ☐ H600C - Serial No. 542-24-03 ☐

A

Analyst Radle Date 9/23/04

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
B5-1			1	1		✓	✓										
C5-1			4	1		✓											
E3-3			3	2		✓	✓										crocidolite
E4-4			2	1		✓	✓										crocidolite
G3-3			2	1		✓	✓										crocidolite
																	<5µm 75µm
																	58 50

16 Lines

OBSERVATIONS: Clean ☐ Debris: ☐ Very Light ☐ Light ☐ Moderate ☒ Heavy ☐ Very Heavy ☐ Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐ Condition of the Grid: ☐ Good ☒ Scrappy ☐ Undissolved Filter ☐ Folded ☐

TEM - 2A (8-01)

TEM ASBESTOS ANALYSIS

EMS Lab No. 96233
Client MACTEC
Sample No. 001

Page ___ of ___

MICROSCOPE

ANALYSIS

Grid Address B
Screen Magnification 19kX
Camera Constant 29.4
Accelerating Voltage 100 KV
Beam Current 10 µA

H600A – Serial No. 542-36-01 ☐
H600B – Serial No. 542-05-06 ☐
H600C – Serial No. 542-24-03 ☐

Analyst Heather SA. Date 9/23/04

RECEIVING

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
E33			25um	25um.													
E33			5	10		✓	✓										~~Amosite~~ crocidolite
G46			8	4		✓	✓										crocidolite
H46			11	9		✓	✓										
H36			10	11		✓											
G34			12	10		✓											
																	<5um 46
																	>5um. 44

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☐ Good ☐ Scrappy ☐ Undissolved Filter ☐ Folded ☐

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TEM ASBESTOS ANALYSIS

SEM-QUANT

EMS Lab No. 96233
Client MACTEC
Sample No. 002

RECEIVING

METHOD OF ANALYSIS
EPA Yamate Level I ☐
Level II ☐
Level III ☐
AHERA ☐
ASPECT RATIO 3:1 ☐ 5:1 ☑

LENGTHS
All Sizes (EPA) ☐
(µm) : ≥ 0.5 ☑
(µm) : > 5.0 ☐
(µm) : > 10.0 ☐
PCM Range* ☐
*(>0.25 µm width, >5.0 µm length)

TYPE OF SAMPLE
Air ☐
Soil ☐
Bulk ☐
Water ☐
Wipe ☐
Other ☐
Dust/Microvac ☑

G.O. Area (mm²) 0.0 095
No. of G.O. to Analyze 10

FILTER TYPE/AREA
MCE/385 ☐
MCE/314 ☐
MCE/1017 ☐
Other ☐

PORE SIZE
0.45 µm ☐
0.8 µm ☐
0.1 µm ☐
0.22 µm ☐
Other ☐

PREP
DIRECT PREP ☐
INDIRECT PREP ☐
Volume ______ liters
Working Volume 100 ml
Weight 0.0119 grams
Ashed Area ______ %
Date 09-23-04
Prepared By JAP

ANALYSIS
Grid Address A
Screen Magnification 9.1 KX x
Camera Constant 19.7
Accelerating Voltage 100 KV
Beam Current 10 µA
Analyst L Kolk
Date 9-23-04

Page ___ of ___

MICROSCOPE
H600A - Serial No. 542-36-01 ☑
H600B - Serial No. 542-05-06 ☐
H600C - Serial No. 542-24-03 ☐

A

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments	
C4			<5µm	75µm													<5 µm	75 µm
B3			|	|													∅	|
G3			|														1	∅
F5			|||														1	∅
G5	NSD																3	∅
																	∅	∅

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☑ Very Light ☐ Light ☐ Moderate ☑ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☑ Good ☑ Scrappy ☐ Undissolved Filter ☐ Folded ☐

23-Sep-2004 15:04:37

96233,002A#1,LK Preset= Off
Vert= 1000 counts Disp= 1 Elapsed= 103 secs

Energy	Counts	X-Ray Lines
1.27	376.	Mg K , Mg K , Mg K
1.76	551.	Si K , Si K
6.41	843.	Fe K , Fe K

Quantex>
0.000 Range= 10.230 keV 10.110
Integral 0 = 11650

TEM ASBESTOS ANALYSIS

EMS Lab No. 96233
Client MACTEC
Sample No. 002

RECEIVING

ANALYSIS

[redacted] of [redacted]
MICROSCOPE

Grid Address B
Screen Magnification 9400x
Camera Constant 29.1
Accelerating Voltage 100 KV
Beam Current 40 µA

H600A – Serial No. 542-36-01 ☑
H600B – Serial No. 542-05-06 ☐
H600C – Serial No. 542-24-03 ☐

Analyst Radke Date 9/29/6

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
F5-3			5n	7n		✓											
E5-6		NB															
C5-4			1			✓											
B5-4			1			✓											
B4-6		ND															

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☐ Good ☐ Scrappy ☐ Undissolved Filter ☐ Folded ☐

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TEM ASBESTOS ANALYSIS

[illegible]

EMS Lab No. 96233
Client Maclec
Sample No. 004

RECEIVING

METHOD OF ANALYSIS
- EPA Yamate Level I ☐
- Level II ☐
- Level III ☐
- AHERA ☐
- ASPECT RATIO 3:1 ☐ 5:1 ☐

LENGTHS
- All Sizes (EPA) ☐
- (µm) : ≥ 0.5 ☐
- (µm) : > 5.0 ☐
- (µm) : > 10.0 ☐
- PCM Range* ☐

*(>0.25 µm width, >5.0 µm length)

TYPE OF SAMPLE
- Air ☐
- Soil ☐
- Bulk ☐
- Water ☐
- Wipe ☐
- Other ☐
- Dust/Microvac ☐

FILTER TYPE/AREA (mm²)
- MCE/385 ☐
- MCE/314 ☐
- MCE/1017 ☐
- Other ☐

PORE SIZE
- 0.45 µm ☐
- 0.8 µm ☐
- 0.1 µm ☐
- 0.22 µm ☐
- Other ☐

G.O. Area (mm²) 0.0095
No. of G.O. to Analyze 10

PREP

- DIRECT PREP ☐
- INDIRECT PREP ☐

Volume ______ liters
Working Volume 50 ml
Weight 0.0119 grams
Ashed Area ______ %
Date 9-22-04
Prepared By JAP

ANALYSIS

Grid Address A
Screen Magnification 19Kx
Camera Constant 28.4
Accelerating Voltage 100 KV
Beam Current 10 µA
Analyst SA
Date 9/23/04

Page ___ of ___

MICROSCOPE
- H600A - Serial No. 542-36-01 ☐
- H600B - Serial No. 542-05-06 ☒
- H600C - Serial No. 542-24-03 ☐

A

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
Cu4.			~~45~~ 5µm.														
E43																	
C5 l																	
C5 l																	
G46	1		✓									710					Gyf#1

16 Lines

OBSERVATIONS:
- Clean ☐
- Debris: ☒ Very Light ☐ Light ☐ Moderate ☒ Heavy ☐ Very Heavy ☐
- Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
- Condition of the Grid: ☐ Good ☒ Scrappy ☐ Undissolved Filter ☐ Folded ☐

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23-Sep-2004 08:11:16

96233,04,A,#01,SA
Vert= 500 counts Disp= 1

Preset= Off
Elapsed= 19 secs

Energy	Counts	X-Ray Lines
1.28	548.	Mg K , Mg K , Mg K
1.77	831.	Si K , Si K
3.71	60.	Ca K , Ca K
6.43	57.	Fe K , Fe K

Quantex>
0.000 Range= 10.230 keV 10.110
Integral 0 = 7453

TEM ASBESTOS ANALYSIS

EMS Lab No. 96233

Client MACTEC

Sample No. 004

RECEIVING

ANALYSIS

Page [redacted] of [redacted]

MICROSCOPE

Grid Address B

Screen Magnification 19000 x

Camera Constant 26.8

Accelerating Voltage 100 KV

Beam Current 10 µA

H600A – Serial No. 542-36-01 ☒

H600B – Serial No. 542-05-06 ☐

H600C – Serial No. 542-24-03 ☐

Rad La.

Analyst _____ Date _____

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
F33		NSP	<5µ	<5µ													
G3-1		NSP															
F26		NSP															
H4-1			1.3			✓											
H4-6			0.5	4		✓											

16 Lines

OBSERVATIONS:

Debris: ☐ Very Light ☐ Light ☐ Moderate ☒ Heavy ☐ Very Heavy ☐

Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐

Condition of the Grid: ☐ Good ☐ Scrappy ☐ Undissolved Filter ☐ Folded ☐

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TEM ASBESTOS ANALYSIS

EMS Lab No. 96233
Client MACTEC
Sample No. 005

RECEIVING

METHOD OF ANALYSIS
EPA Yamate Level I ☐
Level II ☐
Level III ☐
AHERA ☐
ASPECT RATIO 3:1 ☐ 5:1 ☑

LENGTHS
All Sizes (EPA) ☐
(µm) : ≥ 0.5 ☑
(µm) : > 5.0 ☐
(µm) : > 10.0 ☐
PCM Range* ☐
*(>0.25 µm width, >5.0 µm length)

TYPE OF SAMPLE
Air ☐
Soil ☐
Bulk ☐
Water ☐
Wipe ☐
Other ☐
Dust/Microvac ☑

ER TYPE/AREA (mm²)
MCE/385 ☐
MCE/314 ☐
MCE/1017 ☐
Other ☐

PORE SIZE
0.45 µm ☐
0.8 µm ☐
0.1 µm ☐
0.22 µm ☐
Other ☐

G.O. Area (mm²) 0.0 095
No. of G.O. to Analyze 10

PREP
SEM/-QUANT
DIRECT PREP ☐
INDIRECT PREP ☐
Volume ____ liters
Working Volume 50 ml
Weight 0.0121 grams
Ashed Area ____ %
Date 09-23-04
Prepared By JAP

ANALYSIS
Grid Address A
Screen Magnification 19700x
Camera Constant 29.7
Accelerating Voltage 100 KV
Beam Current 10 µA
Analyst KDL Date 9-23-04

Page ____ of ____

MICROSCOPE
H600A - Serial No. 542-36-01 ☑
H600B - Serial No. 542-05-06 ☐
H600C - Serial No. 542-24-03 ☐

A

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
E11			<5µm	>5µm		✓						10	10				<5 AR >3µm
C13			11														2 0
F33			1														1 0
G33			WSD														1 0
H33			NSD														0 0
C11																	0 0

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☑ Very Light ☐ Light ☐ Moderate ☑ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☑ Good ☑ Scrappy ☐ Undissolved Filter ☐ Folded ☐

TEM - 2A (8-01)

23-Sep-2004 15:41:55

96233,0054,#1,LK Preset= Off
Vert= 1000 counts Disp= 1 Elapsed= 81 secs

Energy	Counts	X-Ray Lines
1.27	395.	Mg K , Mg K , Mg K
1.76	370.	Si K , Si K

Quantex)
0.000 Range= 10.230 keV 10.110
Integral 0 = 4206

TEM ASBESTOS ANALYSIS

EMS Lab No. 96233

Client MACTEC

Sample No. 005

RECEIVING

ANALYSIS

	of	

MICROSCOPE

Grid Address 1
Screen Magnification 19400 x

Camera Constant 25.8

Accelerating Voltage 100 KV

Beam Current 10 µA

- H600A – Serial No. 542-36-01 ☐
- H600B – Serial No. 542-05-06 ☐
- H600C – Serial No. 542-24-03 ☐

Analyst Radha Date 9/24/0

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
C4-1			3	75		✓											
C3-6			2			✓											
E2-3		ND															
E2-6		ND															
G3-6		ND															

16 Lines

OBSERVATIONS:

Clean ☐						
Debris: ☐	Very Light ☐	Light ☐	Moderate ☒	Heavy ☐	Very Heavy ☐	
Gypsum: ☐	Very Light ☐	Light ☐	Moderate ☐	Heavy ☐	Very Heavy ☐	
Condition of the Grid: ☐	Good ☐	Scrappy ☐	Undissolved Filter ☐	Folded ☐		

TEM ASBESTOS ANALYSIS

EMS Lab No. 96233
Client MACTEC
Sample No. 006

RECEIVING

METHOD OF ANALYSIS
- EPA Yamate Level I ☐
- Level II ☐
- Level III ☐
- AHERA ☐
- ASPECT RATIO 3:1 ☐ 5:1 ☑

LENGTHS
- All Sizes (EPA) ☐
- (µm) : ≥ 0.5 ☑
- (µm) : > 5.0 ☐
- (µm) : > 10.0 ☐
- PCM Range* ☐

*(>0.25 µm width, >5.0 µm length)

TYPE OF SAMPLE
- Air ☐
- Soil ☐
- Bulk ☐
- Water ☐
- Wipe ☐
- Other ☐
- Dust/Microvac ☑

[FILT]ER TYPE/AREA (mm²)
- MCE/385 ☐
- MCE/314 ☐
- MCE/1017 ☐
- Other ☐

PORE SIZE
- 0.45 µm ☐
- 0.8 µm ☐
- 0.1 µm ☐
- 0.22 µm ☐
- Other ☐

G.O. Area (mm²) 0.0 095
No. of G.O. to Analyze 10

PREP

SEMI-QUANT

DIRECT PREP ☐
INDIRECT PREP ☐
Volume ____ liters
Working Volume 100 ml
Weight 0.018 grams
Ashed Area ____ %
Date 09-23-04
Prepared By JAP

ANALYSIS

Grid Address A
Screen Magnification 19400 x
Camera Constant 19.7
Accelerating Voltage 100 KV
Beam Current 10 µA

Page ____ of ____

MICROSCOPE
- H600A - Serial No. 542-36-01 ☐
- H600B - Serial No. 542-05-06 ☐
- H600C - Serial No. 542-24-03 ☐

A

Analyst [signature] Date 9-23-04

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
			<5µm	>5µm													≤5µm ≥5µm
B36			1														1 ø
F43			1														1 ø
G43			1	1													1 1
F54	NSD																ø ø
G33			1														1 ø

16 Lines

OBSERVATIONS:

Clean	☐					
Debris:	☑	Very Light ☐	Light ☑	Moderate ☑	Heavy ☐	Very Heavy ☐
Gypsum:	☐	Very Light ☐	Light ☐	Moderate ☐	Heavy ☐	Very Heavy ☐
Condition of the Grid:	☑	Good ☐	Scrappy ☐	Undissolved Filter ☐	Folded ☐	

23-Sep-2004 16:24:24

96233,0064#1,LK Preset= Off
Vert= 1000 counts Disp= 1 Elapsed= 70 secs

Energy	Counts	X-Ray Lines
1.27	395.	Mg K , Mg K , Mg K
1.76	377.	Si K , Si K

Quantex>
0.000 Range= 10.230 keV 10.110
Integral 0 = 4750

TEM ASBESTOS ANALYSIS

EMS Lab No. 96233
Client MACTEC
Sample No. 006

RECEIVING

ANALYSIS

Page [redacted] of [redacted]

MICROSCOPE

Grid Address B4UC
Screen Magnification 26k.1
Camera Constant
Accelerating Voltage 100 KV
Beam Current 10 µA

H600A – Serial No. 542-36-01 ☒
H600B – Serial No. 542-05-06 ☐
H600C – Serial No. 542-24-03 ☐

Analyst Radle Date 9/24/a

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
F3-0		ND	3	7.5													
F4-4		ND					✓										
E4-0			1			✓											
E5-4		ND	3														
G5-3			2			✓	✓										amosite

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☐ Good ☐ Scrappy ☐ Undissolved Filter ☐ Folded ☐

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24-Sep-2004 07:50:36

96233,006,B,#01,RS
Vert= 500 counts Disp= 1

Preset= 100 secs
Elapsed= 19 secs

Energy	Counts	X-Ray Lines
1.20	273.	Mg K , Mg K , Mg K , As L , As L , As L
1.76	2583.	Si K , Si K , W M , W M
3.71	116.	Ca K , Ca K
5.90	55.	Mn K , Mn K
6.41	1675.	Fe K , Fe K
7.04	193.	Fe K , Fe K

Quantex>
0.000 Range= 10.230 keV 10.110
Integral 0 = 19226

TEM ASBESTOS ANALYSIS

EMS Lab No. 96233
Client MACTEC
Sample No. 007

RECEIVING

METHOD OF ANALYSIS
EPA Yamate Level I ☐
Level II ☐
Level III ☐
AHERA ☐
ASPECT RATIO 3:1 ☐ 5:1 ☑

LENGTHS
All Sizes (EPA) ☐
(µm) : ≥ 0.5 ☑
(µm) : > 5.0 ☐
(µm) : > 10.0 ☐
PCM Range* ☐
*(>0.25 µm width, >5.0 µm length)

TYPE OF SAMPLE
Air ☐
Soil ☐
Bulk ☐
Water ☐
Wipe ☐
Other ☐
Dust/Microvac ☑

FILTER TYPE/AREA (mm²)
MCE/385 ☐
MCE/314 ☐
MCE/1017 ☐
Other ☐

PORE SIZE
0.45 µm ☐
0.8 µm ☐
0.1 µm ☐
0.22 µm ☐
Other ☐

G.O. Area (mm²) 0.0 095
No. of G.O. to Analyze

PREP

SEMI-QUANT

DIRECT PREP ☐
INDIRECT PREP ☐
Volume ____ liters
Working Volume 100 ml
Weight 0.0120 grams
Ashed Area ____ %

Date 09-23-04
Prepared By JAP

ANALYSIS

Grid Address A 19
Screen Magnification 1940X
Camera Constant 59.7
Accelerating Voltage 100 KV
Beam Current 10 µA

Analyst [signature] Date 9-23-04

Page A of

MICROSCOPE
H600A - Serial No. 542-36-01 ☑
H600B - Serial No. 542-05-06 ☐
H600C - Serial No. 542-24-03 ☐

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
G1	NS		<5µm >5µm														<5µm >5µm
F43	NS																∅ ∅
E33	NS																∅ ∅
C34	NS																∅ ∅
F33	NS																∅ ∅
																	∅ ∅

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☑ Very Light ☐ Light ☑ Moderate ☐ Heavy ☐ Very Heavy ☐
Gypsum: ☑ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☐ Good ☑ Scrappy ☐ Undissolved Filter ☐ Folded ☐

TEM - 2A (8-01)

TEM ASBESTOS ANALYSIS

Page of

EMS Lab No. 96233

Client MACTEC

Sample No. 007

RECEIVING

ANALYSIS

MICROSCOPE

Grid Address B

Screen Magnification 10K x

Camera Constant 24.8

Accelerating Voltage 100 KV

Beam Current 10 µA

H600A – Serial No. 542-36-01 ☒

H600B – Serial No. 542-05-06 ☐

H600C – Serial No. 542-24-03 ☐

Analyst Radke Date 9/24/01

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
3	1	ND	.5	.5													
3	3	ND															
3	3	ND															
4	4	ND															
4	1	ND															

16 Lines

OBSERVATIONS:

Clean ☐

Debris: ☐ Very Light ☐ Light ☐ Moderate ☒ Heavy ☐ Very Heavy ☐

Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐

Condition of the Grid: ☐ Good ☐ Scrappy ☐ Undissolved Filter ☐ Folded ☐

TEM ASBESTOS ANALYSIS

EMS Lab No. 96233
Client MACTEC
Sample No. 008

RECEIVING

METHOD OF ANALYSIS
EPA Yamate Level I ☐
Level II ☐
Level III ☐
AHERA ☐
ASPECT RATIO 3:1 ☐ 5:1 ☑

LENGTHS
All Sizes (EPA) ☐
(µm) : ≥ 0.5 ☑
(µm) : > 5.0 ☐
(µm) : > 10.0 ☐
PCM Range* ☐
*(>0.25 µm width, >5.0 µm length)

TYPE OF SAMPLE
Air ☐
Soil ☐
Bulk ☐
Water ☐
Wipe ☐
Other ☐
Dust/Microvac ☑

FILTER AREA
MCE/385 ☐
MCE/314 ☐
MCE/1017 ☐
Other ☐

PORE SIZE
0.45 µm ☐
0.8 µm ☐
0.1 µm ☐
0.22 µm ☐
Other ☐

G.O. Area (mm²) 0.0 095
No. of G.O. to Analyze 10

PREP

SEMI-QUANT

DIRECT PREP ☐
INDIRECT PREP ☐
Volume ____ liters
Working Volume 100 ml
Weight 0.0120 grams
Ashed Area ____ %

Date 09-23-04
Prepared By JAP

ANALYSIS

Grid Address A
Screen Magnification 9700 X
Camera Constant 29.4
Accelerating Voltage 100 KV
Beam Current 10 µA

Analyst [signature] Date 9-23-04

Page ____ of ____

MICROSCOPE
H600A - Serial No. 542-36-01 ☑
H600B - Serial No. 542-05-06 ☐
H600C - Serial No. 542-24-03 ☐

A

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
E33	NSD		<5µm	75µm													<5µm NSD 2 1 0 1
C31			11														75µm NSD 0 0 1 0
C24			1														
E56				1													
T61			1														

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☑ Very Light ☐ Light ☑ VL Moderate ☑ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☑ Good ☐ Scrappy ☐ Undissolved Filter ☐ Folded ☐

TEM - 2A (8-01)

23-Sep-2004 18:29:51

96233,0000#1,LK
Vert= 1000 counts Disp= 1

Preset= Off
Elapsed= 49 secs

Energy	Counts	X-Ray Lines
1.28	708.	Mg K , Mg K , Mg K
1.76	791.	Si K , Si K

Quantex>
0.000 Range= 10.230 keV 10.110
Integral 0 = 5755

TEM ASBESTOS ANALYSIS

EMS Lab No. 96233
Client MACTEC
Sample No. 008

RECEIVING

ANALYSIS

Page [redacted] of [redacted]

MICROSCOPE

Grid Address B
Screen Magnification 9200 x
Camera Constant 2824
Accelerating Voltage 100 KV
Beam Current 10 µA

H600A – Serial No. 542-36-01 ☐
H600B – Serial No. 542-05-06 ☑
H600C – Serial No. 542-24-03 ☐

Analyst SA Date 9/24/01

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
B4-1	NSD		<5um	>5um													<5um 7510
C5-1			1														3
E5-6	NSD		2														
G6-1	NSD																
H5-3	NSD																

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☑ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☐ Good ☑ Scrappy ☐ Undissolved Filter ☐ Folded ☐

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TEM - 2B (8-01)

TEM ASBESTOS ANALYSIS

EMS Lab No. 96233
Client Mactec
Sample No. 009.

RECEIVING

METHOD OF ANALYSIS
EPA Yamate Level I ☐
Level II ☐
Level III ☐
AHERA ☐
ASPECT RATIO 3:1 ☐ 5:1 ☐

LENGTHS
All Sizes (EPA) ☐
(µm) : ≥ 0.5 ☑
(µm) : > 5.0 ☐
(µm) : > 10.0 ☐
PCM Range* ☐
*(>0.25 µm width, >5.0 µm length)

TYPE OF SAMPLE
Air ☐
Soil ☐
Bulk ☐
Water ☐
Wipe ☐
Other ☐
Dust/Microvac ☑

FILTER TYPE/AREA (mm²)
MCE/385 ☐
MCE/314 ☐
MCE/1017 ☐
Other ☐

PORE SIZE
0.45 µm ☐
0.8 µm ☐
0.1 µm ☐
0.22 µm ☐
Other ☐

G.O. Area (mm²) 0.0095
No. of G.O. to Analyze 10

PREP
DIRECT PREP ☐
INDIRECT PREP ☐
Volume ____ liters
Working Volume 100 ml
Weight 0.0120 grams
Ashed Area ____ %
Date 9-23-04
Prepared By JAP.

ANALYSIS
Grid Address A
Screen Magnification 19200 X
Camera Constant 28.4
Accelerating Voltage 100 KV
Beam Current 10 µA
Analyst Radke. Date 9/24/04

Page ____ of ____

MICROSCOPE
H600A - Serial No. 542-36-01 ☐
H600B - Serial No. 542-05-06 ☐
H600C - Serial No. 542-24-03 ☑

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
C5-4		NSD	CS	1SA													
E4-6			1	1		✓											
R5-1		NSD															
C3-3			1			✓											
F3-4			2			✓											

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☐ Very Light ☐ Light ☐ Moderate ☒ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☐ Good ☐ Scrappy ☐ Undissolved Filter ☐ Folded ☐

TEM - 2A (8-01)

23-Sep-2004 18:48:19

96233,0090#1,LK Preset= Off
Vert= 1000 counts Disp= 1 Elapsed= 60 secs

Energy	Counts	X-Ray Lines
1.27	175.	Mg K , Mg K , Mg K
1.75	259.	Si K , Si K

Quantex>
0.000 Range= 10.230 keV 10.110
Integral 0 = 3359

TEM ASBESTOS ANALYSIS

EMS Lab No. 96233
Client MACTEC
Sample No. 009

RECEIVING

ANALYSIS

Page [ ] of [ ]

MICROSCOPE

Grid Address B
Screen Magnification 10K
Camera Constant 2617
Accelerating Voltage 100 KV
Beam Current 10 µA

H600A – Serial No. 542-36-01 ☒
H600B – Serial No. 542-05-06 ☐
H600C – Serial No. 542-24-03 ☐

Analyst RadLa Date 9/24/

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
F3-B		NF	<5	<5													
F4-4		NF															
F4-9			1			✓											
F5-1			1			✓											
U5-B		NF															

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☐ Very Light ☐ Light ☐ Moderate ☒ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☐ Good ☐ Scrappy ☐ Undissolved Filter ☐ Folded ☐

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TEM ASBESTOS ANALYSIS

EMS Lab No. 96233
Client MACTEC
Sample No. ~~004~~ 10

RECEIVING

METHOD OF ANALYSIS
EPA Yamate Level I [ ]
Level II [ ]
Level III [ ]
AHERA [ ]
ASPECT RATIO 3:1 [ ] 5:1 [x]

LENGTHS
All Sizes (EPA) [ ]
(µm) : ≥ 0.5 [x]
(µm) : > 5.0 [ ]
(µm) : > 10.0 [ ]
PCM Range* [x]
*(>0.25 µm width, >5.0 µm length)

TYPE OF SAMPLE
Air [ ]
Soil [ ]
Bulk [ ]
Water [ ]
Wipe [ ]
Other [ ]
Dust/Microvac [x]

G.O. Area (mm²) 0.0 095
No. of G.O. to Analyze 10

FILTER TYPE/AREA (mm²)
MCE/385 [ ]
MCE/314 [ ]
MCE/1017 [ ]
Other ____ [ ]

PORE SIZE
0.45 µm [ ]
0.8 µm [ ]
0.1 µm [ ]
0.22 µm [ ]
Other [ ]

PREP
DIRECT PREP [ ]
INDIRECT PREP [ ]
Volume ____ liters
Working Volume 50 ml
Weight 0.0119 grams
Ashed Area ____ %
Date 09-22-04
Prepared By JAP

ANALYSIS
Grid Address A
Screen Magnification 9200 x
Camera Constant 26.4
Accelerating Voltage 100 KV
Beam Current 10 µA
Analyst [signature]
Date 9-22-04

Page ___ of ___

MICROSCOPE
H600A - Serial No. 542-36-01 [ ]
H600B - Serial No. 542-05-06 [x]
H600C - Serial No. 542-24-03 [ ]

A

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments	
E46	NSD		<5µm	>5µm													ND <5µm	ND >5 µm
E46			1	1													1	1
G43			11	1													2	1
F33			1														1	ND
G31			1														1	ND

16 Lines

OBSERVATIONS:
Clean [ ]
Debris: [x] Very Light [ ] Light [ ] Moderate [x] Heavy [ ] Very Heavy [ ]
Gypsum: [ ] Very Light [ ] Light [ ] Moderate [ ] Heavy [ ] Very Heavy [ ]
Condition of the Grid: [x] Good [x] Scrappy [ ] Undissolved Filter [ ] Folded [ ]

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22-Sep-2004 10:00:53

96233,004,A#1,LK Preset= Off
Vert= 200 counts Disp= 1 Elapsed= 21 secs

Energy	Counts	X-Ray Lines
1.28	232.	Mg K , Mg K , Mg K
1.77	416.	Si K , Si K

Quantex>
0.000 Range= 10.230 keV 10.110
Integral 0 = 10097

TEM ASBESTOS ANALYSIS

EMS Lab No. 96233

Client MACTEC

Sample No. 010

RECEIVING

ANALYSIS

Page [redacted] of [redacted]

MICROSCOPE

Grid Address B 2

Screen Magnification 1900 x

Camera Constant 2918

Accelerating Voltage 100 KV

Beam Current 10 µA

H600A – Serial No. 542-36-01 ☒

H600B – Serial No. 542-05-06 ☐

H600C – Serial No. 542-24-03 ☐

Analyst Radke Date 9/23/04

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
F5-1		ND	<5	25													
G3-3			1			✓											
F6-1			2			✓											
C3-6			1			✓											
C3-3		ND															

16 Lines

OBSERVATIONS:

Clean ☐

Debris: ☐ Very Light ☐ Light ☐ Moderate ☒ Heavy ☐ Very Heavy ☐

Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☒ Heavy ☐ Very Heavy ☐

Condition of the Grid: ☐ Good ☐ Scrappy ☐ Undissolved Filter ☐ Folded ☐

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TEM ASBESTOS ANALYSIS

EMS Lab No. 96233
Client MACTEC
Sample No. 011

RECEIVING

METHOD OF ANALYSIS
EPA Yamate Level I ☐
Level II ☐
Level III ☐
AHERA ☐
ASPECT RATIO 3:1 ☐ 5:1 ☒

LENGTHS
All Sizes (EPA) ☐
(µm) : ≥ 0.5 ☒
(µm) : > 5.0 ☐
(µm) : > 10.0 ☐
PCM Range* ☐
*(>0.25 µm width, >5.0 µm length)

TYPE OF SAMPLE
Air ☐
Soil ☐
Bulk ☐
Water ☐
Wipe ☐
Other ☐
Dust/Microvac ☒

FILTER TYPE/AREA (mm²)
MCE/385 ☐
MCE/314 ☐
MCE/1017 ☐
Other ☐

PORE SIZE
0.45 µm ☐
0.8 µm ☐
0.1 µm ☐
0.22 µm ☐
Other ☐

G.O. Area (mm²) 0.0 095
No. of G.O. to Analyze 10

PREP

SEMI-QUANT.

DIRECT PREP ☐
INDIRECT PREP ☐
Volume ____ liters
Working Volume 100 ml
Weight 0.0120 grams
Ashed Area ____ %

Date 09-23-04
Prepared By JAP

ANALYSIS

Grid Address A
Screen Magnification 5140 X
Camera Constant 297
Accelerating Voltage 100 KV
Beam Current 10 µA

Analyst L Kerr Date 9-23-04

Page 1 of 1

MICROSCOPE
H600A - Serial No. 542-36-01 ☐
H600B - Serial No. 542-05-06 ☒
H600C - Serial No. 542-24-03 ☐

A

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
C45	NSD		<5µm	>5µm													<5µm NSD ∅
B44			1			/											>5µm NSD ∅
E33			1			/											1 NSD ∅
E31	NSD																1 NSD ∅
D36	NSD																NSD ∅ NSD ∅
																	NSD ∅ NSD ∅

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☐ Very Light ☐ Light ☐ Moderate ☒ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☐ Good ☒ Scrappy ☐ Undissolved Filter ☐ Folded ☐

TEM - 2A (8-01)

TEM ASBESTOS ANALYSIS

EMS Lab No. 96233

Client MACTEC

Sample No. 011

RECEIVING

ANALYSIS

Page [redacted] of [redacted]

MICROSCOPE

Grid Address B

Screen Magnification 9200X

Camera Constant 28.4

Accelerating Voltage 100 KV

Beam Current 10 µA

H600A – Serial No. 542-36-01 ☐

H600B – Serial No. 542-05-06 ☑

H600C – Serial No. 542-24-03 ☐

Analyst SA Date 9/24/0

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
F56	NSD		<5um	>5um				✓									
E64			1			✓											
C64	NSD																
F54			1					✓									
A41	NSD																

16 Lines

OBSERVATIONS:

Clean ☐

Debris: ☑ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐

Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐

Condition of the Grid: ☐ Good ☐ Scrappy ☐ Undissolved Filter ☐ Folded ☐

TEM ASBESTOS ANALYSIS

EMS Lab No. 96233
Client MACTEC
Sample No. 012

RECEIVING

METHOD OF ANALYSIS
EPA Yamate Level I ☐
Level II ☐
Level III ☐
AHERA ☐
ASPECT RATIO 3:1 ☐ 5:1 ☑

LENGTHS
All Sizes (EPA) ☐
(µm) : ≥ 0.5 ☑
(µm) : > 5.0 ☐
(µm) : > 10.0 ☐
PCM Range* ☐
*(>0.25 µm width, >5.0 µm length)

TYPE OF SAMPLE
Air ☐
Soil ☐
Bulk ☐
Water ☐
Wipe ☐
Other ☐
Dust/Microvac ☑

FILTER TYPE/AREA (mm²)
MCE/385 ☐
MCE/314 ☐
MCE/1017 ☐
Other ☐

PORE SIZE
0.45 µm ☐
0.8 µm ☐
0.1 µm ☐
0.22 µm ☐
Other ☐

G.O. Area (mm²) 0.0 095
No. of G.O. to Analyze 10

PREP
SEMI-QUANT
DIRECT PREP ☐
INDIRECT PREP ☐
Volume ____ liters
Working Volume 50 ml
Weight 0.012 grams
Ashed Area ____ %
Date 09-23-04
Prepared By JAP

ANALYSIS
Grid Address L
Screen Magnification 4400x
Camera Constant 29.7
Accelerating Voltage 100 KV
Beam Current 10 µA
Analyst [illegible] Date 9-23-04

Page 1 of 1

MICROSCOPE
H600A - Serial No. 542-36-01 ☑
H600B - Serial No. 542-05-06 ☐
H600C - Serial No. 542-24-03 ☐

A

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
			<5µm	75µm													<5µm 75µm
C44			1			/											1 Ø
B54			USD														Ø Ø
F46			1			/											1 Ø
G41			USD														Ø Ø
H33			USD														Ø Ø

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☑ Very Light ☐ Light ☐ Moderate ☑ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☑ Good ☑ Scrappy ☐ Undissolved Filter ☐ Folded ☐

TEM - 2A (8-01)

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TEM ASBESTOS ANALYSIS

EMS Lab No. 96433

Client MACTEC

Sample No. 012

Page ___ of ___

RECEIVING

ANALYSIS

MICROSCOPE

Grid Address B

Screen Magnification 9400 x

Camera Constant 29-1

Accelerating Voltage 100 KV

Beam Current 10 µA

H600A – Serial No. 542-36-01 ☑

H600B – Serial No. 542-05-06 ☐

H600C – Serial No. 542-24-03 ☐

Analyst Radke Date 9/24/00

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
CS-1			5	15		✓											EDS-
TU-3		NSD	1														
TU-1			1			✓											
FS-3		NSD															
EG-1		NSD															

16 Lines

OBSERVATIONS: Clean ☐

Debris: ☐	Very Light ☐	Light ☐	Moderate ☑	Heavy ☐	Very Heavy ☐
Gypsum: ☐	Very Light ☐	Light ☐	Moderate ☐	Heavy ☐	Very Heavy ☐
Condition of the Grid: ☐	Good ☐	Scrappy ☐	Undissolved Filter ☐	Folded ☐	

TEM - 2B (8-01)

24-Sep-2004 09:30:13

96233,012,B,#01,RS
Vert= 500 counts Disp= 1

Preset= 100 secs
Elapsed= 51 secs

Energy	Counts	X-Ray Lines
1.26	137.	Mg K , Mg K , Mg K , As L , As L
1.77	235.	Si K , Si K , W M , W M
6.40	176.	Fe K , Fe K

Quantex>
0.000 Range= 10.230 keV 10.110
Integral 0 = 4052

TEM ASBESTOS ANALYSIS

EMS Lab No. 96233
Client MACTEC
Sample No. 013

RECEIVING

METHOD OF ANALYSIS
EPA Yamate Level I ☐
Level II ☐
Level III ☐
AHERA ☐
ASPECT RATIO 3:1 ☐ 5:1 ☑

LENGTHS
All Sizes (EPA) ☐
(µm) : ≥ 0.5 ☑
(µm) : > 5.0 ☐
(µm) : > 10.0 ☐
PCM Range* ☐
*(>0.25 µm width, >5.0 µm length)

TYPE OF SAMPLE
Air ☐
Soil ☐
Bulk ☐
Water ☐
Wipe ☐
Other ☐
Dust/Microvac ☑

FILTER TYPE/AREA (mm)
MCE/385 ☐
MCE/314 ☐
MCE/1017 ☐
Other ☐

PORE SIZE
0.45 µm ☐
0.8 µm ☐
0.1 µm ☐
0.22 µm ☐
Other ☐

G.O. Area (mm²) 0.0 295
No. of G.O. to Analyze 10

PREP

DIRECT PREP ☐
INDIRECT PREP ☐
Volume ____ liters
Working Volume 50 ml
Weight 0.0120 grams
Ashed Area ____ %

Date 09-22-04
Prepared By JAP

ANALYSIS

Grid Address A
Screen Magnification 19200x
Camera Constant ____
Accelerating Voltage 100 KV
Beam Current ____ µA

Analyst SA
Date 9-22-04

Page ____ of ____

MICROSCOPE
H600A - Serial No. 542-36-01 ☐
H600B - Serial No. 542-05-06 ☑
H600C - Serial No. 542-24-03 ☐

A

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
CS			<5µm	>5µm													<5µm >5µm
HU1	1	F	11			✓											~~21~~ 17 3
FU3			10	11		✓											
CU1			5	1		✓											
BU1			6	1		✓											
FS3			2			✓											

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☑ Very Light ☐ Light ☐ Moderate ☑ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☑ Good ☑ Scrappy ☐ Undissolved Filter ☐ Folded ☐

TEM - 2A (8-01)

TEM ASBESTOS ANALYSIS

EMS Lab No. 96233

Client MACTEC

Sample No. 03

RECEIVING

ANALYSIS

MICROSCOPE

Grid Address B

Screen Magnification 19KX

Camera Constant 25.Y

Accelerating Voltage 100 KV

Beam Current 10 µA

H600A – Serial No. 542-36-01 ☒

H600B – Serial No. 542-05-06 ☐

H600C – Serial No. 542-24-03 ☐

Analyst Radke Date 9/23/02

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
E4-1			csm 3	25		✓						7	10				ED
E5-4		NDG															
F5-3			2			✓											
F6-4		NDG															
C5-6			1			✓											

16 Lines

OBSERVATIONS:

Clean ☐						
Debris: ☐	Very Light ☐	Light ☐	Moderate ☒	Heavy ☐	Very Heavy ☐	
Gypsum: ☐	Very Light ☐	Light ☐	Moderate ☐	Heavy ☐	Very Heavy ☐	
Condition of the Grid: ☐	Good ☐	Scrappy ☐	Undissolved Filter ☐	Folded ☐		

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23-Sep-2004 07:43:07

96233,13,B,#01,RS
Vert= 500 counts Disp= 1

Preset= Off
Elapsed= 26 secs

Energy	Counts	X-Ray Lines
0.97	66.	Zn L , Zn L
1.27	129.	Mg K , Mg K , Mg K
1.76	105.	Si K , Si K

Quantex>
0.000 Range= 10.230 keV 10.110
Integral 0 = 3563

TEM ASBESTOS ANALYSIS

EMS Lab No. 96233
Client MACTEC
Sample No. 014

RECEIVING

METHOD OF ANALYSIS
EPA Yamate Level I ☐
Level II ☐
Level III ☐
AHERA ☐
ASPECT RATIO 3:1 ☐ 5:1 ☐

LENGTHS
All Sizes (EPA) ☐
(µm) : ≥ 0.5 ☐
(µm) : > 5.0 ☐
(µm) : > 10.0 ☐
PCM Range* ☐
*(>0.25 µm width, >5.0 µm length)

TYPE OF SAMPLE
Air ☐
Soil ☐
Bulk ☐
Water ☐
Wipe ☐
Other ☐
Dust/Microvac ☐

FILTER TYPE/AREA (mm²)
MCE/385 ☐
MCE/314 ☐
MCE/1017 ☐
Other ☐

PORE SIZE
0.45 µm ☐
0.8 µm ☐
0.1 µm ☐
0.22 µm ☐
Other ☐

G.O. Area (mm²) 0.0 095
No. of G.O. to Analyze 10

PREP

DIRECT PREP ☐
INDIRECT PREP ☐
Volume ____ liters
Working Volume 100 ml
Weight 0.012 grams
Ashed Area ____ %

Date 09-23-04
Prepared By JAJ

ANALYSIS

Grid Address A
Screen Magnification 10000x
Camera Constant 2864
Accelerating Voltage 100 KV
Beam Current 10 µA

Analyst SA Date 9/24/04

Page ____ of ____

MICROSCOPE
H600A - Serial No. 542-36-01 ☐
H600B - Serial No. 542-05-06 ☒
H600C - Serial No. 542-24-03 ☐

A

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
H46	NSD		4µm	3µm													
H33			1			✓											
H41			1			✓											
C46			2			✓											
F53	NSD																

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☐ Good ☐ Scrappy ☐ Undissolved Filter ☐ Folded ☐

TEM - 2A (8-01)

24-Sep-2004 09:28:52

96233,014,A,#01,SA
Vert= 500 counts Disp= 1

Preset= 100 secs
Elapsed= 33 secs

Energy	Counts	X-Ray Lines
1.26	101.	Mg K , Mg K , Mg K , As L , As L
1.78	147.	Si K , Si K , W M , W M
6.41	96.	Fe K , Fe K

Quantex>
0.000 Range= 10.230 keV 10.110
Integral 0 = 2528

TEM ASBESTOS ANALYSIS

EMS Lab No. 96233

Client MACTEC

Sample No. 04

RECEIVING

ANALYSIS

ge o

MICROSCOPE

Grid Address B

Screen Magnification 1900x

Camera Constant 2.1

Accelerating Voltage 100 KV

Beam Current 10 µA

H600A – Serial No. 542-36-01 ☑

H600B – Serial No. 542-05-06 ☐

H600C – Serial No. 542-24-03 ☐

Analyst Radke Date 9/24/

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
E6-1			5	5		✓											
F5-4			1			✓											
G4-3		NY															
G3-4		NY															
R2-3		NY															

16 Lines

OBSERVATIONS:

Clean ☐

Debris: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐

Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐

Condition of the Grid: ☐ Good ☐ Scrappy ☐ Undissolved Filter ☐ Folded ☐

TEM - 2B (8-01)

TEM ASBESTOS ANALYSIS

EMS Lab No. 96233
Client Maeter
Sample No. 015

RECEIVING

METHOD OF ANALYSIS
- EPA Yamate Level I ☐
- Level II ☐
- Level III ☐
- AHERA ☐
- ASPECT RATIO 3:1 ☐ 5:1 ☐

LENGTHS
- All Sizes (EPA) ☐
- (µm) : ≥ 0.5 ☐
- (µm) : > 5.0 ☐
- (µm) : > 10.0 ☐
- PCM Range* ☐

*(>0.25 µm width, >5.0 µm length)

TYPE OF SAMPLE
- Air ☐
- Soil ☐
- Bulk ☐
- Water ☐
- Wipe ☐
- Other ☐
- Dust/Microvac ☑

G.O. Area (mm²) 0.0 895
No. of G.O. to Analyze 10

FILTER TYPE/AREA (mm²)
- MCE/385 ☐
- MCE/314 ☑
- MCE/1017 ☐
- Other ☐

PORE SIZE
- 0.45 µm ☐
- 0.8 µm ☐
- 0.1 µm ☐
- 0.22 µm ☑
- Other ☐

PREP
- DIRECT PREP ☐
- INDIRECT PREP ☐
- Volume 100 liters
- Working Volume ____ ml
- Weight 0.0122 grams
- Ashed Area ____ %
- Date 9-24-04
- Prepared By JAP

ANALYSIS
- Grid Address A
- Screen Magnification 19700 x
- Camera Constant 28.4
- Accelerating Voltage 100 KV
- Beam Current 10 µA

Analyst [signature] Date 9-24-04

Page __ of __

MICROSCOPE
- H600A - Serial No. 542-36-01 ☐
- H600B - Serial No. 542-05-06 ☑
- H600C - Serial No. 542-24-03 ☐

A

Grid Opening	Structure Number	Structure	Width	Length	Thickness	Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	Na	Mg	Si	Ca	Fe	Id	Comments
E6	NSD		<5	>5	µm												<5 µm >5 µm
F41				1		/											EDS 1
E51	NSD																
B56			11			/											2
B44	NSD																

16 Lines

OBSERVATIONS:
- Clean ☐
- Debris: ☑ Very Light ☐ Light ☐ Moderate ☑ Heavy ☐ Very Heavy ☐
- Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
- Condition of the Grid: ☐ Good ☑ Scrappy ☐ Undissolved Filter ☐ Folded ☐

24-Sep-2004 17:50:57

96233-0154 Preset= 100 secs
Vert= 500 counts Disp= 1 Elapsed= 32 secs

Energy	Counts	X-Ray Lines
1.28	167.	Mg K , Mg K , Mg K , As L , As L , As L
1.76	312.	Si K , Si K , W M , W M
6.43	105.	Fe K , Fe K

Quantex>
0.000 Range= 10.230 keV 10.110
Integral 0 = 8973

TEM ASBESTOS ANALYSIS

EMS Lab No. 96233
Client McTee
Sample No. 015

RECEIVING

MICROSCOPE

H600A – Serial No. 542-36-01 ☐
H600B – Serial No. 542-05-06 ☑
H600C – Serial No. 542-24-03 ☐

ANALYSIS

Grid Address K
Screen Magnification 14700 x
Camera Constant 78.4
Accelerating Voltage 100 KV
Beam Current 10 µA

Analyst [signature] Date 9-26-0[illegible]

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
C54	NSD																
E43	NSD																
F52	NSD																
C56	NSD																
G43	NSD																

16 Lines

OBSERVATIONS:

Clean ☐						
Debris: ☑	Very Light ☐	Light ☐	Moderate ☑	Heavy ☐	Very Heavy ☐
Gypsum: ☐	Very Light ☐	Light ☐	Moderate ☐	Heavy ☐	Very Heavy ☐
Condition of the Grid: ☑	Good ☑	Scrappy ☐	Undissolved Filter ☐	Folded ☐	

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TEM ASBESTOS ANALYSIS

EMS Lab No. 96233
Client MACTEC
Sample No. ~~910~~ 016

RECEIVING

METHOD OF ANALYSIS
EPA Yamate Level I ☐
Level II ☐
Level III ☐
AHERA ☐
ASPECT RATIO 3:1 ☐ 5:1 ☒

LENGTHS
All Sizes (EPA) ☐
(µm) : ≥ 0.5 ☑
(µm) : > 5.0 ☐
(µm) : > 10.0 ☐
PCM Range* ☐
*(>0.25 µm width, >5.0 µm length)

TYPE OF SAMPLE
Air ☐
Soil ☐
Bulk ☐
Water ☐
Wipe ☐
Other ☐
Dust/Microvac ☒

FILTER TYPE/AREA (mm²)
MCE/385 ☐
MCE/314 ☐
MCE/1017 ☐
Other ☐

PORE SIZE
0.45 µm ☐
0.8 µm ☐
0.1 µm ☐
0.22 µm ☐
Other ☐

G.O. Area (mm²) 0.0 095
No. of G.O. to Analyze 10

PREP
DIRECT PREP ☐
INDIRECT PREP ☐
Volume ____ liters
Working Volume 50 ml
Weight 0.0118 grams
Ashed Area ____ %
Date 09-22-04
Prepared By JAP

ANALYSIS
Grid Address A
Screen Magnification 9700 X
Camera Constant 28.9
Accelerating Voltage 100 KV
Beam Current 10 µA
Analyst L Vom Date 9-22-04

Page ____ of ____

MICROSCOPE
H600A - Serial No. 542-36-01 ☐
H600B - Serial No. 542-05-06 ☒
H600C - Serial No. 542-24-03 ☐

A

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
E41	NSD		<5µm	>5µm													ND <5µm ND >5µm
G4	NSD																ND ND
E34				1		✓											1 ND
F24	NSD																ND ND
G41				1													1 ND

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☑ Very Light ☐ Light ☐ Moderate ☑ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☑ Good ☑ Scrappy ☐ Undissolved Filter ☐ Folded ☐

TEM - 2A (8-01)

22-Sep-2004 10:10:42

96233,10,A#1,LK
Vert= 200 counts Disp= 1

Preset= Off
Elapsed= 14 secs

Energy	Counts	X-Ray Lines
0.97	76.	Zn L , Zn L
1.28	104.	Mg K , Mg K , Mg K
1.76	145.	Si K , Si K
3.69	86.	Ca K , Ca K
6.44	48.	Fe K
7.09	32.	Fe K , Fe K

Quantex>
0.000 Range= 10.230 keV 10.110
Integral 0 = 11020

TEM ASBESTOS ANALYSIS

EMS Lab No. 96233
Client MACTEC
Sample No. 016

RECEIVING

ANALYSIS

Page [redacted] of [redacted]

MICROSCOPE

Grid Address B
Screen Magnification 19000 x
Camera Constant 2d.1
Accelerating Voltage 100 KV
Beam Current 10 µA

H600A – Serial No. 542-36-01 [X]
H600B – Serial No. 542-05-06 [ ]
H600C – Serial No. 542-24-03 [ ]

Analyst ~~Katie~~ SA Date 9/23/02

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
H4	NSD		<5um	35um													
G6			2			✓											
F3	NSD																
C3	NSD																
C5			1			✓											

16 Lines

OBSERVATIONS:
Clean [ ]
Debris: [X] Very Light [ ] Light [ ] Moderate [ ] Heavy [ ] Very Heavy [ ]
Gypsum: [ ] Very Light [ ] Light [ ] Moderate [ ] Heavy [ ] Very Heavy [ ]
Condition of the Grid: [ ] Good [ ] Scrappy [ ] Undissolved Filter [ ] Folded [ ]

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TEM ASBESTOS ANALYSIS

Page 1 of 1

EMS Lab No. 96233
Client MACTEC
Sample No. 017

RECEIVING

METHOD OF ANALYSIS
EPA Yamate Level I ☐
Level II ☐
Level III ☐
AHERA ☐
ASPECT RATIO 3:1 ☐ 5:1 ☐

LENGTHS
All Sizes (EPA) ☐
(µm) : ≥ 0.5 ☐
(µm) : > 5.0 ☐
(µm) : > 10.0 ☐
PCM Range* ☐
*(>0.25 µm width, >5.0 µm length)

TYPE OF SAMPLE
Air ☐
Soil ☐
Bulk ☐
Water ☐
Wipe ☐
Other ☐
Dust/Microvac ☑

FILTER AREA
MCE/385 ☐
MCE/314 ☐
MCE/101 ☐
Other ☐

PORE SIZE
0.45 µm ☐
0.8 µm ☐
0.1 µm ☐
0.22 µm ☑
Other ☐

G.O. Area (mm²) 0.0 095
No. of G.O. to Analyze 10

PREP
DIRECT PREP ☐
INDIRECT PREP ☐
Volume 100 liters
Working Volume ____ ml
Weight 0.0120 grams
Ashed Area ____ %
Date 9-24-04
Prepared By JAP

ANALYSIS
Grid Address A
Screen Magnification 1200 X
Camera Constant 28.4
Accelerating Voltage 100 KV
Beam Current 10 µA
Analyst [signature] Date 9-24-04

MICROSCOPE
H600A - Serial No. 542-36-01 ☐
H600B - Serial No. 542-05-06 ☑
H600C - Serial No. 542-24-03 ☐

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
E41	NSD		.05	.75	µm												
F11	NSD																
E51	NSD																
G43	NSD																
B56	NSD																

16 Lines

OBSERVATIONS:
Clean ☐
Debris: ☑ Very Light ☐ Light ☐ Moderate ☑ Heavy ☐ Very Heavy ☐
Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐
Condition of the Grid: ☑ Good ☑ Scrappy ☐ Undissolved Filter ☐ Folded ☐

TEM - 2A (8-01)

TEM ASBESTOS ANALYSIS

EMS Lab No. 16227

Client MACTEC

Sample No. 017

RECEIVING

Page ___ of ___

MICROSCOPE

ANALYSIS

Grid Address 13

Screen Magnification 19200 x

Camera Constant 384

Accelerating Voltage 100 KV

Beam Current 10 µA

H600A – Serial No. 542-36-01 ☐

H600B – Serial No. 542-05-06 ☑

H600C – Serial No. 542-24-03 ☐

Analyst [signature] Date 9-26-04

Grid Opening	Structure Number	Structure	Dimension (mm) Width	Length	Thickness	SAED Observation Chrysotile	Amphibole	Ambiguous	Non Asbestos	No Pattern	EDS Analysis Na	Mg	Si	Ca	Fe	Id	Comments
E4 5	NSD																
F5 4	NSD																
F6 1	NSD																
G5 /	NSD																
G6	NSD																

16 Lines

OBSERVATIONS:

Clean ☐

Debris: ☑ Very Light ☐ Light ☐ Moderate ☑ Heavy ☐ Very Heavy ☐

Gypsum: ☐ Very Light ☐ Light ☐ Moderate ☐ Heavy ☐ Very Heavy ☐

Condition of the Grid: ☑ Good ☑ Scrappy ☐ Undissolved Filter ☐ Folded ☐

CLIENT: MACTEC LABORATORY NUMBER: 96236

ELEMENT	DETECTION LIMIT (micro grams)
LEAD	< 7

SAMPLE NAME / ELEMENT	WEIGHT (micro grams)
BLANK	
LEAD	< 7

METHOD: NIOSH 7082

micro grams/foot^2 = micro grams per square foot

SAMPLE NAME / ELEMENT	WEIGHT (micro grams)	CONCENTRATION (micro grams/foot^2)
1	WIPE AREA .65 sq. feet	
LEAD	190	300
2	WIPE AREA .65 sq. feet	
LEAD	< 7	< 20
3	WIPE AREA .65 sq. feet	
LEAD	37	60
4	WIPE AREA .65 sq. feet	
LEAD	51	80
5	WIPE AREA .65 sq. feet	
LEAD	14	20
6	WIPE AREA .65 sq. feet	
LEAD	109	170
7	WIPE AREA .65 sq. feet	
LEAD	< 7	< 20
8	WIPE AREA .69 sq. feet	
LEAD	8	10
9	WIPE AREA .65 sq. feet	
LEAD	83	130
10	WIPE AREA .65 sq. feet	
LEAD	143	220
11	WIPE AREA .65 sq. feet	
LEAD	< 7	< 20
12	WIPE AREA .65 sq. feet	
LEAD	95	150
13	WIPE AREA .65 sq. feet	
LEAD	54	80
14	WIPE AREA .65 sq. feet	
LEAD	33	50
15	WIPE AREA .65 sq. feet	
LEAD	11	20
16	WIPE AREA .65 sq. feet	
LEAD	40	60

CHEMIST FSL

09-20-04 EMS LABORATORIES CHEMISTRY REPORT page 3

CLIENT: MACTEC LABORATORY NUMBER: 96236

SAMPLE NAME / ELEMENT	WEIGHT (micro grams)	CONCENTRATION (micro grams/foot^2)
17	WIPE AREA .65 sq. feet	
LEAD	36	60
18	WIPE AREA .65 sq. feet	
LEAD	133	210
19	WIPE AREA .65 sq. feet	
LEAD	98	150
20	WIPE AREA .65 sq. feet	
LEAD	147	230

CHEMIST _____

96236.1

SUBMITTAL FORM/*Laboratory Services*

PAGE 1 OF 1

TURNAROUND TIME: STD ✓ 48 HR. ____ 24 HR. ____
<8 HR. ____ WKND ____ OTHER: ____

RELINQUISHED BY Don E Ham
TIME / DATE 1415 9/17

CLIENT N Actel
ADDRESS
TELEPHONE (323) 818-5378
CONTACT Don Herman

DATE OF SHIPMENT ____ CARRIER ____
CLIENT P.O. NO.
CLIENT JOB/PROJECT ID NO(S). Haw 4952-04-2861
PACKAGE SHIPPED FROM

RESULTS REQUESTED VIA VERBAL ☐ FAX ☑
CLIENT FAX NO. (323) 721-6700

(NOTE: Complete written reports will follow all analyses, in addition to any prior transmitted verbal or fax results.)

DATE/TIME OF SAMPLE COLLECTION 9/11 - 9/17
SAMPLE PRESERVATIVES None
HOLDING TIMES
NO. OF SAMPLES SENT ~~34~~ 35
SAMPLER'S NAME Don E Ham (SIGNATURE) Don E Herman (PRINTED)

TYPE: ☐ WATER ☐ WASTE WATER ☐ SOIL ☐ FILTER ☐ SORBENT TUBE ☐ IMPINGER ☐ OTHER

EMS Sample No. (FOR EMS ONLY)	CLIENT SAMPLE NO.	DESCRIPTION/LOCATION	ANALYSIS	VOLUME TIME WEIGHT (IF APPLICABLE)
	1 - ~~34~~ 35	lead wipes.	all are 8½ X 11	
			except # 8 @ 99 sq in	
			& # 21 @ 144 sq in	
96236 — 1-20	1 - 20			
96236.1 - 21-35	21 → 35			

(SF 5/00)

FOR EMS ONLY

96236

Laboratory No. 96236.1
Received By [signature] Time 2:20 PM
Date of Package Delivery 09-17-04
Shipping Bill Retained: YES ☐ NONE ☒
Condition of Package on Receipt Good
Condition of Custody Seal None
(NOTE: If the package has sustained substantial damage or the custody seal is broken, stop and contact the project manager and the shipper.)
No. of Samples 20 + 15
Chain-of-Custody Signature [signature]
Date of Acceptance into Sample Bank 09-17-04
Misc. Info.
Disposition of Samples EMS

09-20-04 EMS LABORATORIES CHEMISTRY REPORT page 2

CLIENT: MACTEC LABORATORY NUMBER: 96236.1

ELEMENT	DETECTION LIMIT (micro grams)
LEAD	< 7

SAMPLE NAME / ELEMENT	WEIGHT (micro grams)
BLANK	
LEAD	< 7

METHOD: NIOSH 7082

micro grams/foot^2 = micro grams per square foot

SAMPLE NAME / ELEMENT	WEIGHT (micro grams)	CONCENTRATION (micro grams/foot^2)
21	WIPE AREA 1 sq. feet	
LEAD	165	165
22	WIPE AREA .65 sq. feet	
LEAD	15	20
23	WIPE AREA .65 sq. feet	
LEAD	33	50
24	WIPE AREA .65 sq. feet	
LEAD	410	630
25	WIPE AREA .65 sq. feet	
LEAD	116	180
26	WIPE AREA .65 sq. feet	
LEAD	92	140
27	WIPE AREA .65 sq. feet	
LEAD	107	170
28	WIPE AREA .65 sq. feet	
LEAD	63	100
29	WIPE AREA .65 sq. feet	
LEAD	79	120
30	WIPE AREA .65 sq. feet	
LEAD	158	240
31	WIPE AREA .65 sq. feet	
LEAD	55	80
32	WIPE AREA .65 sq. feet	
LEAD	< 7	< 20
33	WIPE AREA .65 sq. feet	
LEAD	103	160
34	WIPE AREA .65 sq. feet	
LEAD	220	330
35	WIPE AREA .65 sq. feet	
LEAD	167	260

redone.

CHEMIST

SUBMITTAL FORM/*Laboratory Services* 96236

PAGE 1 OF 1

TURNAROUND TIME: STD ✓ 48 HR. ___ 24 HR. ___ <8 HR. ___ WKND ___ OTHER: ___

RELINQUISHED BY Dan E Harm

TIME / DATE 1415 9/17

CLIENT M ACTEC

DATE OF SHIPMENT ___ CARRIER ___

ADDRESS ___

CLIENT P.O. NO. ___

TELEPHONE (323) 818-5378

CLIENT JOB/PROJECT ID NO(S). HAS 4952-04-2861

CONTACT Dan Harman

PACKAGE SHIPPED FROM ___

RESULTS REQUESTED VIA VERBAL ☐ FAX ✓

CLIENT FAX NO. (323) 721-6700

(NOTE: Complete written reports will follow all analyses, in addition to any prior transmitted verbal or fax results.)

DATE/TIME OF SAMPLE COLLECTION 9/16 - 9/17

SAMPLE PRESERVATIVES None

HOLDING TIMES ___

NO. OF SAMPLES SENT ~~34~~ (35)

SAMPLER'S NAME (SIGNATURE) Dan E Harm (PRINTED) Dan E Harman

TYPE: ☐ WATER ☐ WASTE WATER ☐ SOIL ☐ FILTER ☐ SORBENT TUBE ☐ IMPINGER ☐ OTHER ___

(FOR EMS ONLY) EMS Sample No.	CLIENT SAMPLE NO.	DESCRIPTION/LOCATION/ANALYSIS		VOLUME TIME WEIGHT
	1 - ~~34~~ 35	lead wipes	all are 8½ X 11	
			except # 8 @ 99 in	
			& # 21 @ 144 in	
96236 — 1-20	1-20			
96236.1 - 21-35	21→35			

(SF 5/00)

FOR EMS ONLY

Laboratory No. 96236 / 96236.1

Received By Crystal [signature] Time 2:20 PM

Date of Package Delivery 09-17-04

Shipping Bill Retained: YES ☐ NONE ☒

Condition of Package on Receipt good

Condition of Custody Seal None

(NOTE: If the package has sustained substantial damage or the custody seal is broken, stop and contact the project manager and the shipper.)

No. of Samples 20 + 15

Chain-of-Custody Signature [signature]

Date of Acceptance into Sample Bank 09-17-04

Misc. Info. ___

Disposition of Samples EMS

EMS LABORATORIES 117 West Bellevue Drive / Pasadena CA 91105-2503 / 626-568-4065

CLIENT: MACTEC LABORATORY NUMBER: 96237

ELEMENT	DETECTION LIMIT (mg)
LEAD	<0.007

SAMPLE NAME / ELEMENT	WEIGHT (mg)
BLANK	
LEAD	<0.007

METHOD: EPA 7420/3050M

ppm = parts per million

SAMPLE NAME / ELEMENT	WEIGHT (mg)	CONCENTRATION (ppm)
35	BULK WEIGHT .1735 grams	
LEAD	0.198	1140
36	BULK WEIGHT .1584 grams	
LEAD	0.21	1300
37	BULK WEIGHT .1785 grams	
LEAD	0.146	820
38	BULK WEIGHT .1534 grams	
LEAD	0.22	1430
39	BULK WEIGHT .1748 grams	
LEAD	0.162	930
40	BULK WEIGHT .1643 grams	
LEAD	0.163	990
41	BULK WEIGHT .1557 grams	
LEAD	6.1	39000

CHEMIST _____

SUBMITTAL FORM/*Laboratory Services* 96237

PAGE 1 OF 1

TURNAROUND TIME: STD [X] 48 HR. [ ] 24 HR. [ ]
<8 HR. [ ] WKND [ ] OTHER: [ ]

RELINQUISHED BY Dan Herman
TIME / DATE 1415 9/17

CLIENT MACTEC
ADDRESS
TELEPHONE (323) 889-5378
CONTACT Dan Herman

DATE OF SHIPMENT ____ CARRIER ____
CLIENT P.O. NO. ____
CLIENT JOB/PROJECT ID NO(S). HOJ 4932-04-2861
PACKAGE SHIPPED FROM ____

RESULTS REQUESTED VIA VERBAL [ ] FAX [X]
CLIENT FAX NO (323) 721-6700
(NOTE: Complete written reports will follow all analyses, in addition to any prior transmitted verbal or fax results.)

DATE/TIME OF SAMPLE COLLECTION 9/17
SAMPLE PRESERVATIVES None HOLDING TIMES NA
NO. OF SAMPLES SENT 7 SAMPLER'S NAME ____ / ____
SIGNATURE PRINTED

TYPE: [ ] WATER [ ] WASTE WATER [ ] SOIL [ ] FILTER [ ] SORBENT TUBE [ ] IMPINGER [X] OTHER ____

(FOR EMS ONLY) EMS Sample No.	CLIENT SAMPLE NO.	DESCRIPTION/LOCATION	ANALYSIS	VOLUME / TIME/WT (IF APPLICABLE)
96237-35-41	35-41		Lead 7o	

96237

Laboratory No. ____
Received By Crystal Time 120 pm
Date of Package Delivery 09-17-04
Shipping Bill Retained: YES [ ] NONE [X]
Condition of Package on Receipt good
Condition of Custody Seal None
(NOTE: If the package has sustained substantial damage or the custody seal is broken, stop and contact the project manager and the shipper.)

FOR EMS ONLY

No. of Samples 7
Chain-of-Custody Signature
Date of Acceptance into Sample Bank 09-17-04
Misc. Info.
Disposition of Samples EMS

EMS LABORATORIES 117 West Bellevue Drive / Pasadena CA 91105-2503 / 626-568-4065

LEAD BASED PAINT INSPECTION

FOR

HALLWAYS

Located At:
Hall of Justice
210 West Temple Street
Los Angeles, California

Prepared for:

Los Angeles County Department of Public Works
900 South Fremont Avenue,
Alhambra, CA 91803

Prepared by:

Aurora Industrial Hygiene
3620 Long Beach Boulevard, Suite C1
Long Beach, California 90807
(562) 988-8993

Aurora Project No. 33087

September 27, 2004

Prepared By: _____ Date: _____
Grace M. Rinck, CIH, DHS Inspector/Assessor AURORA

TABLE OF CONTENTS

USE OF THIS REPORT

This report is intended to provide an understanding of the potential hazards that the properties evaluated in this report may pose to human health due to lead based paint. This report is based primarily upon data and information obtained during a visit by Aurora Industrial Hygiene Inc. (Aurora) to the property identified herein on September 22, 2004 and is based solely upon the condition of the property on the date of such assessment.

Aurora has performed this work, made the findings, and proposed the recommendations described in this report in accordance with generally accepted environmental science practices for lead inspections in effect in the Southern California area at the time the work was performed. This warranty stands in lieu of all other warranties, expressed or implied. While this report can be used as a guide, it must be understood that it is neither a rejection nor an endorsement of the properties. It must also be understood that changing circumstances in the environment and in the use of the properties can alter radically the conclusions and information contained in this report.

1.0 INTRODUCTION

This report documents the findings, recommendations, and conclusions from the sampling conducted by Robert Rinck, California Department of Health Services (DHS) Certified Lead Inspector/Risk Assessor on September 22, 2004. The purpose of the survey was to determine the existence and location of lead based coatings on painted hallway surfaces at the Hall of Justice Building located at 210 West Temple Street, Los Angeles, California. Not all hallways were inspected. Locations were chosen based upon expected routes for planned document removal. Recommendations regarding proper handling and notification are also provided in this report.

Lead based paint, defined as a reading of >0.7 mg/cm^2, was detected on the following substrates:

Floor	Location	Substrate	Condition
Basement	South Hall	Green doors (metal)	Fair
Basement	South Hall	Green doors (wood)	Fair
Basement	Elevator Lobby	Beige HVAC Ducts	Fair
Basement	South Hall	Lower Walls, black	Poor
Basement	South Hall	Black doorframes	Intact
Basement	Elevator Lobby	Upper Walls, black	Fair
Basement	South Hall	Lower Columns, black	Poor
Basement	West Hall	Lower Wall, green	Poor
Basement	West Hall	Upper Walls, white	Poor
4th Floor	West Hall	Tan window frames	Fair
4th Floor	Column P5[1]	Beige window sashes	Intact
4th Floor	Column P5	Beige outer window frames	Fair
6th Floor	Column P5	Beige window sashes	Fair
8th Floor	Column P5	White window sashes	Fair
8th Floor	Column P5	White window frames	Fair
10th Floor	East Hall	Walls, tan	Fair
10th Floor	West Hall	Gray cell doors	Poor
11th Floor	East Hall	Walls, beige	Fair
11th Floor	West Hall	Walls, beige	Fair
12th Floor	West Hall	Walls, tan	Intact
12th Floor	East Hall	Walls, tan	Intact
12th Floor	East Hall	Gray cell bars	Poor
13th Floor	East Hall	Walls, tan	Intact
13th Floor	West Hall	Brown doorframes	Fair
13th Floor	West Hall	Ceiling, white	Poor
13th Floor	West Hall	Blue baseboard	Fair
13th Floor	West Hall	Brown doors	Fair
13th Floor	West Hall	Upper Walls, beige	Fair
13th Floor	West Hall	Ceilings, blue	Poor
13th Floor	West Hall	Walls, blue	Fair
13th Floor	West Hall	Ceiling, beige	Poor

1 Column P5 is the proposed exterior elevator access area for document removal

Floor	Location	Substrate	Condition
14th Floor	North Hall	Ceilings	Poor
14th Floor	North Hall	Walls	Poor
14th Floor	North Hall	Walls	Poor
14th Floor	East Hall	Walls	Poor
14th Floor	North Hall	Walls	Fair
14th Floor	East Hall	Ceilings	Poor
14th Floor	North Hall	Walls	Poor

2.0 SAMPLING

X-ray fluorescence (XRF) instrumentation was utilized to determine if lead-based paint was present. Painted surfaces of various components were sampled using XRF analysis with a NITON instrument, (serial number U3949NR4598). A reading of >0.7 mg/cm^2 was considered positive for lead based paint, in accordance with Los Angeles County regulations for Lead Based Paint Inspections.

3.0 SAMPLE DATA

The following data tables summarize the data. The table columns are identified below:

Building Identifies the building tested.

Location Identifies the side of the building tested (side 'A' is the main entry of the building, which is in this case, the East side)

Component Identifies the actual component tested.

Substrate The material of the tested component.

Color The visible color of the tested component.

Condition The condition of the paint was determined, as defined in the HUD *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing:*

Intact – the entire surface is intact.

Fair – less than or equal to ten percent of the total surface area of the component is deteriorated.

Poor – more than ten percent of the total surface area of the component is deteriorated.

Pb The reading displayed by the XRF in milligram per square centimeter.

Table 3.1: Positive XRF Summary Table

Floor	Area	Location	Component	Substrate	Color	Condition	Pb
Basement	South Hall	D	Door	Metal	Green	Fair	16
Basement	South Hall	D	Door	Wood	Green	Fair	10
Basement	Elevator Lobby	ABCD	HVAC Duct	Metal	Beige	Fair	4.6
Basement	South Hall	D	Lower Wall	Concrete	Black	Poor	2
Basement	South Hall	D	Door Frame	Metal	Black	Intact	1.3
Basement	Elevator Lobby	D	Upper Wall	Concrete	Black	Fair	0.9
Basement	South Hall	B	Lower Column	Concrete	Black	Poor	0.8
Basement	West Hall	C	Lower Wall	Concrete	Green	Poor	0.7
Basement	West Hall	C	Upper Wall	Concrete	White	Poor	0.7
4th Floor	West Hall	A	Window Frame	Wood	Tan	Fair	2.1
4th Floor	Column P5	D	Window Sash	Metal	Beige	Intact	2.1
4th Floor	Column P5	D	Outer Window Frame	Wood	Beige	Fair	0.7
6th Floor	5/P	D	Window Sash	Metal	Beige	Fair	2.1
8th Floor	5/P	D	Window Sash	Metal	White	Fair	3.6
8th Floor	5/P	D	Window Frame	Wood	White	Fair	2
10th Floor	East Hall	A	Wall	Brick	Tan	Fair	21
10th Floor	West Hall	B	Cell Door	Metal	Gray	Poor	3.4
11th Floor	East Hall	C	Wall	Brick	Tan	Fair	33
11th Floor	West Hall	A	Wall	Brick	Tan	Fair	30
12th Floor	West Hall	A	Wall	Brick	Tan	Intact	31
12th Floor	East Hall	C	Wall	Brick	Tan	Intact	14
12th Floor	East Hall	A	Cell Bars	Metal	Gray	Poor	2
13th Floor	East Hall	C	Wall	Brick	Tan	Intact	25
13th Floor	West Hall	C	Door Frame	Metal	Brown	Fair	8.7
13th Floor	West Hall	ABCD	Ceiling	Concrete	White	Poor	4.1
13th Floor	West Hall	D	Baseboard	Concrete	Blue	Fair	2.1
13th Floor	West Hall	C	Door	Metal	Brown	Fair	2
13th Floor	West Hall	A	Upper Wall	Concrete	Beige	Fair	1.9
13th Floor	West Hall	ABCD	Ceiling	Concrete	Blue	Poor	1.7
13th Floor	West Hall	A	Wall	Concrete	Blue	Fair	0.9
13th Floor	West Hall	ABCD	Ceiling	Concrete	Beige	Poor	0.7
14th Floor	North Hall	ABCD	Ceiling	Concrete	Blue	Poor	22
14th Floor	North Hall	B	Wall	Concrete	Beige	Poor	7.8
14th Floor	North Hall	C	Wall	Concrete	Blue	Poor	3.1
14th Floor	East Hall	C	Wall	Concrete	Beige	Poor	2.3
14th Floor	North Hall	D	Wall	Plaster	Blue	Fair	2
14th Floor	East Hall	ABCD	Ceiling	Concrete	Beige	Poor	2
14th Floor	North Hall	B	Wall	Plaster	Beige	Poor	1.8

Table 3.2: XRF Readings Summary Table

Floor	Area	Location	Component	Substrate	Color	Condition	Pb
Basement	East Hall	A	Upper Wall	Brick	White	Fair	0.13
Basement	East Hall	A	Lower Wall	Brick	Black	Fair	0.21
Basement	South Hall	D	Upper Wall	Concrete	White	Fair	0.04
Basement	South Hall	D	Lower Wall	Concrete	Black	Fair	0.18
Basement	South Hall	D	Door Frame	Metal	Black	Intact	1.3
Basement	South Hall	D	Door	Wood	Green	Fair	10
Basement	South Hall	D	Door	Metal	Green	Fair	16
Basement	South Hall	B	Upper Column	Concrete	White	Poor	0.5
Basement	South Hall	B	Lower Column	Concrete	Black	Poor	0.8
Basement	South Hall	ABCD	Ceiling	Concrete	Beige	Poor	0.47
Basement	South Hall	D	Lower Wall	Concrete	Black	Poor	2
Basement	South Hall	D	Upper Wall	Concrete	White	Fair	0.39
Basement	South Hall	C	Ramp Sides	Concrete	Red	Fair	0.43
Basement	West Hall	C	Lower Wall	Concrete	Green	Poor	0.7
Basement	West Hall	C	Upper Wall	Concrete	White	Poor	0.7
Basement	West Hall	C	Door Frame	Metal	Brown	Intact	0
Basement	West Hall	C	Door	Metal	Brown	Intact	0.05
Basement	West Hall	ABCD	Ceiling	Concrete	Silver	Poor	0.36
Basement	Elevator Lobby	D	Lower Wall	Concrete	White	Fair	0.6
Basement	Elevator Lobby	D	Upper Wall	Concrete	Black	Fair	0.9
Basement	Elevator Lobby	ABCD	Ceiling	Concrete	Beige	Poor	0.6
Basement	Elevator Lobby	ABCD	Pipe	Metal	Silver	Fair	0.04
Basement	Elevator Lobby	ABCD	HVAC Duct	Metal	Beige	Fair	4.6
Basement	Supply East Hall	B	Wall	Brick	White	Fair	0.28
Basement	Supply East Hall	A	Upper Wall	Brick	White	Poor	0.04
Basement	Supply East Hall	A	Lower Wall	Brick	Green	Poor	0.18
Basement	Supply East Hall	C	Upper Wall	Concrete	White	Poor	0.14
Basement	Supply East Hall	C	Lower Wall	Concrete	Green	Poor	0.01
Basement	Southeast Stairwell	B	Wall	Concrete	Beige	Poor	0.14
Basement	Southeast Stairwell	C	Ceiling	Brick	Beige	Poor	0.04
1st Floor	East Hall	C	Wall	Concrete	Beige	Poor	0.2
1st Floor	East Hall	ABCD	Ceiling	Plaster	Beige	Poor	0.02
1st Floor	South Hall	D	Wall	Plaster	Beige	Poor	0.22
1st Floor	South Hall	ABCD	Ceiling	Plaster	Beige	Poor	0.03
1st Floor	South Hall	C	Wall	Plaster	Beige	Poor	0.13
1st Floor	Service Corridor	B	Wall	Plaster	Beige	Poor	0.07
1st Floor	Service Corridor	ABCD	Ceiling	Concrete	Beige	Poor	0.27
1st Floor	Service Corridor	C	Door Frame	Metal	Tan	Fair	0.03
1st Floor	Service Corridor	C	Door	Metal	Tan	Poor	0.05
1st Floor	Loading Area	A	Lower Wall	Concrete	Tan	Poor	0.3
1st Floor	Loading Area	A	Upper Wall	Concrete	White	Fair	0.22

Floor	Area	Location	Component	Substrate	Color	Condition	Pb
1st Floor	Loading Area	ABCD	HVAC Duct	Metal	White	Poor	0.11
1st Floor	Stairwell #1	B	Wall	Plaster	Beige	Poor	0.19
1st Floor	Stairwell #1	ABCD	Ceiling	Plaster	Beige	Poor	0.13
1st Floor	Stairwell #1	C	Hand rail	Wood	Stain	Intact	0
2nd Floor	East Hall	A	Wall	Plaster	White	Intact	0.07
2nd Floor	East Hall	ABCD	Ceiling	Plaster	Beige	Poor	0.11
2nd Floor	South Hall	B	Wall	Plaster	White	Poor	0.05
2nd Floor	South Hall	ABCD	Ceiling	Plaster	Beige	Poor	0.07
2nd Floor	Service Corridor	A	Lower Wall	Plaster	Tan	Fair	0
2nd Floor	Service Corridor	A	Upper Wall	Plaster	White	Fair	0
2nd Floor	West Hall	C	Wall Panel	Metal	Tan	Intact	-0.6
2nd Floor	West Hall	B	Door Frame	Metal	Tan	Fair	0.12
2nd Floor	West Hall	B	Door	Wood	Tan	Fair	0.01
2nd Floor	North Hall	B	Lower Wall	Plaster	Tan	Intact	0.03
2nd Floor	North Hall	B	Upper Wall	Plaster	White	Intact	-0.3
3rd Floor	East Hall	A	Wall	Plaster	White	Poor	0.03
3rd Floor	East Hall	D	Door Frame	Metal	Blue	Intact	0.33
3rd Floor	East Hall	B	Door	Metal	Blue	Intact	0
3rd Floor	Elevator Lobby	D	Wall	Plaster	Beige	Poor	-0.1
3rd Floor	Elevator Lobby	B	Wall	Plaster	Beige	Poor	0.2
3rd Floor	Elevator Lobby	ABCD	Ceiling	Plaster	Beige	Poor	-0.5
3rd Floor	West Hall	B	Wall	Plaster	Blue	Intact	0.01
3rd Floor	Column P5	D	Wall	Plaster	Beige	Intact	0.2
4th Floor	East Hall	A	Wall	Plaster	Beige	Intact	0.11
4th Floor	East Hall	C	Wall	Plaster	Beige	Intact	0.31
4th Floor	East Hall	C	Baseboard	Wood	Tan	Poor	0
4th Floor	East Hall	C	Lower Wall	Plaster	Blue	Fair	-0.3
4th Floor	East Hall	C	Upper Wall	Plaster	Blue	Poor	-0.3
4th Floor	East Hall	A	Column	Plaster	Blue	Poor	0.2
4th Floor	South Hall	B	Wall	Plaster	Beige	Poor	0.1
4th Floor	South Hall	C	Door Frame	Wood	Beige	Poor	0.11
4th Floor	South Hall	C	Door	Wood	Beige	Fair	0.28
4th Floor	West Hall	C	Wall	Plaster	Beige	Poor	0.05
4th Floor	West Hall	A	Window Frame	Wood	Tan	Fair	2.1
4th Floor	Elevator Lobby	B	Wall	Plaster	Beige	Fair	-0.1
4th Floor	Elevator Lobby	ABCD	Ceiling	Plaster	Beige	Poor	0.05
4th Floor	Column P5	D	Wall	Plaster	Beige	Fair	0.5
4th Floor	Column P5	D	Window Frame Inner	Metal	Beige	Fair	0.36
4th Floor	Column P5	D	Window Sash	Metal	Beige	Intact	2.1
4th Floor	Column P5	D	Outer Window Frame	Wood	Beige	Fair	0.7
4th Floor	Column P5	D	Baseboard	Wood	Beige	Fair	0.12
4th Floor	Column P5	D	Baseboard	Metal	Beige	Fair	0.26
4th Floor	North Hall	B	Wall	Plaster	Beige	Poor	-0.5
4th Floor	Stairwell #1	B	Wall	Plaster	Beige	Poor	-0.7
5th Floor	East Hall	A	Wall	Plaster	Beige	Poor	-0.7

Floor	Area	Location	Component	Substrate	Color	Condition	Pb
5th Floor	East Hall	ABCD	Ceiling	Plaster	Beige	Poor	0.06
5th Floor	East Hall	B	Wall	Plaster	Beige	Poor	0.1
5th Floor	South Hall	B	Wall	Plaster	Beige	Poor	0.1
5th Floor	West Hall	C	Wall	Plaster	Beige	Poor	0.18
5th Floor	North Hall	B	Wall	Plaster	Beige	Poor	0.12
5th Floor	North Hall	ABCD	Ceiling	Plaster	Beige	Fair	0
5th Floor	Elevator Lobby	D	Wall	Plaster	Beige	Poor	0.05
6th Floor	East Hall	A	Wall	Plaster	Beige	Poor	-0.7
6th Floor	South Hall	D	Wall	Plaster	Beige	Poor	-0.7
6th Floor	South Hall	ABCD	Ceiling	Plaster	Beige	Poor	-0.5
6th Floor	West Hall	C	Wall	Plaster	Beige	Fair	-0.8
6th Floor	Elevator Lobby	C	Ceiling	Plaster	Beige	Poor	-0.2
6th Floor	5/P	D	Wall	Plaster	Beige	Fair	0.14
6th Floor	5/P	D	Window Frame	Wood	Beige	Fair	0.37
6th Floor	5/P	D	Window Sash	Metal	Beige	Fair	2.1
6th Floor	North Hall	B	Wall	Plaster	Beige	Poor	0.05
7th Floor	East Hall	A	Wall	Plaster	Beige	Poor	0.1
7th Floor	East Hall	ABCD	Ceiling	Plaster	Beige	Poor	0.01
7th Floor	South Hall	B	Wall	Plaster	Beige	Poor	-0.4
7th Floor	West Hall	A	Wall	Plaster	Beige	Poor	0.03
8th Floor	South Hall	B	Wall	Plaster	Beige	Poor	0.07
8th Floor	South Hall	ABCD	Ceiling	Plaster	Beige	Poor	0.2
8th Floor	West Hall	C	Wall	Plaster	Beige	Poor	-0.2
8th Floor	West Hall	ABCD	Ceiling	Plaster	Beige	Poor	-0.2
8th Floor	5/P	D	Wall	Plaster	White	Poor	0.02
8th Floor	5/P	D	Window Frame	Wood	White	Fair	2
8th Floor	5/P	D	Window Sash	Metal	White	Fair	3.6
9th Floor	North Hall	D	Wall	Plaster	Beige	Poor	0.07
9th Floor	North Hall	ABCD	Ceiling	Plaster	Beige	Poor	0.01
9th Floor	East Hall	A	Wall	Plaster	Beige	Poor	0.18
9th Floor	East Hall	ABCD	Ceiling	Plaster	Beige	Poor	0.1
9th Floor	West Hall	B	Door Frame	Metal	Beige	Fair	0.18
9th Floor	West Hall	B	Door	Wood	Beige	Fair	0.25
9th Floor	West Hall	C	Wall	Plaster	Beige	Poor	0.07
10th Floor	East Hall	A	Wall	Brick	Tan	Fair	21
10th Floor	East Hall	C	Upper Wall	Plaster	White	Fair	0.2
10th Floor	East Hall	ABCD	Ceiling	Plaster	White	Poor	0
10th Floor	South Hall	B	Upper Wall	Plaster	White	Poor	-0.03
10th Floor	South Hall	D	Bars	Metal	Gray	Fair	0.18
10th Floor	West Hall	B	Cell Door	Metal	Gray	Poor	3.4
11th Floor	East Hall	C	Wall	Brick	Tan	Fair	33
11th Floor	East Hall	ABCD	Ceiling	Concrete	Beige	Fair	0.14
11th Floor	West Hall	A	Wall	Brick	Tan	Fair	30
11th Floor	West Hall	A	Upper Wall	Concrete	Beige	Fair	0.1
11th Floor	West Hall	A	Ceiling	Concrete	Beige	Poor	-0.5
12th Floor	East Hall	C	Wall	Brick	Tan	Intact	14

Floor	Area	Location	Component	Substrate	Color	Condition	Pb
12th Floor	East Hall	ABCD	Ceiling	Concrete	Beige	Fair	0.1
12th Floor	East Hall	A	Cell Bars	Metal	Gray	Poor	2
12th Floor	East Hall	C	Stairwell Door Frame	Metal	Gray	Poor	0.35
12th Floor	East Hall	C	Stairwell Door	Metal	Gray	Poor	0.29
12th Floor	West Hall	A	Wall	Brick	Tan	Intact	31
12th Floor	West Hall	A	Upper Wall	Concrete	Beige	Fair	0.08
12th Floor	West Hall	ABCD	Ceiling	Concrete	Beige	Poor	0.12
12th Floor	West Hall	A	Radiator	Metal	Gray	Poor	0.11
12th Floor	West Hall	A	Window Sash	Metal	Gray	Poor	0.32
13th Floor	East Hall	C	Wall	Brick	Tan	Intact	25
13th Floor	East Hall	C	Upper Wall	Concrete	Beige	Fair	0.12
13th Floor	East Hall	ABCD	Ceiling	Concrete	Beige	Poor	0.2
13th Floor	East Hall	C	Window Sash	Metal	Gray	Poor	0.49
13th Floor	Northeast Stairwell	B	Wall	Concrete	Beige	Fair	-0.05
13th Floor	Northeast Stairwell	ABCD	Ceiling	Concrete	Beige	Fair	-0.05
13th Floor	West Hall	A	Upper Wall	Concrete	Beige	Fair	1.9
13th Floor	West Hall	ABCD	Ceiling	Concrete	Beige	Poor	0.7
13th Floor	West Hall	A	Wall	Concrete	White	Fair	0.2
13th Floor	West Hall	ABCD	Ceiling	Concrete	White	Poor	4.1
13th Floor	West Hall	D	Baseboard	Concrete	Blue	Fair	2.1
13th Floor	West Hall	C	Door Frame	Metal	Brown	Fair	8.7
13th Floor	West Hall	C	Door	Metal	Brown	Fair	2
13th Floor	West Hall	C	Baseboard	Concrete	Brown	Fair	0.45
13th Floor	West Hall	A	Wall	Concrete	Beige	Poor	0.1
13th Floor	West Hall	A	Wall	Concrete	Blue	Fair	0.9
13th Floor	West Hall	ABCD	Ceiling	Concrete	Blue	Poor	1.7
14th Floor	North Hall	C	Baseboard	Concrete	Blue	Fair	0.6
14th Floor	North Hall	C	Wall	Concrete	Blue	Poor	3.1
14th Floor	North Hall	D	Wall	Plaster	Blue	Fair	2
14th Floor	North Hall	D	Baseboard	Concrete	Blue	Fair	0.21
14th Floor	North Hall	B	Wall	Plaster	Beige	Poor	1.8
14th Floor	North Hall	B	Wall	Concrete	Beige	Poor	7.8
14th Floor	North Hall	ABCD	Floor	Concrete	Gray	Fair	0.02
14th Floor	North Hall	ABCD	Ceiling	Concrete	Beige	Poor	0.06
14th Floor	North Hall	ABCD	Ceiling	Concrete	Blue	Poor	22
14th Floor	East Hall	C	Wall	Concrete	Beige	Poor	2.3
14th Floor	East Hall	ABCD	Ceiling	Concrete	Beige	Poor	2

4.0 DISCUSSION

Worker Protection

California regulations (8 CCR 1532.1) define lead-related construction work as, "Construction, alteration, painting, demolition, salvage, renovation, repair, or maintenance of any residential, public or commercial building, including preparation and clean-up, that, by using or disturbing lead containing material or soil, may result in significant exposure of individuals to lead". As such, Cal/OSHA does not distinguish between LBP and paint that contains lead at a lower concentration. The presence of lead at any level requires that exposure assessments be conducted and the provisions of 8 CCR 1532.1 be followed, including but not limited to training, notification, medical evaluations, and personal protective equipment.

LBP is present on the components inspected. We recommend that hazard communication training and exposure assessments be required for employees who may be exposed to lead.

Federal EPA

A copy of the building summary must be provided to new lessees (tenants) and purchaser of this property under federal law (24 CFR part 35 and 40 CFR part 745) before they become obligated under a lease or sales contract. The complete report must also be provided to new purchasers and it must be made available to tenants. Landlord (lessors) and sellers are also required to distribute an educational pamphlet approved by the EPA and include standard warning language in their lease or sales contracts to ensure that parents have the information they need to protect their children from lead-based paint hazards.

Handling/Disposal

Demolition or remodeling of the components inspected would include the disturbance of known lead-based paint.

Prior to demolition or renovation which may disturb lead-based paint, the substrates and adhered paint should be removed and disposed of in accordance with the California Health & Safety Code, section 25157.8(a). Painted metal components may be transported to a smelter for recycling. A landfill may accept the other materials as construction debris or it may require that the components be tested to determine if they have to be disposed of at a Class I hazardous waste disposal facility. The following tests may be required in order to dispose of the stand in a California landfill.

Composite samples should be taken and analyzed for Total Threshold Limit Concentration (TTLC) by USEPA reference method SW846. If the concentration of lead is greater than 350 mg/kg the sample must be disposed of as hazardous waste. If the concentration is less than 50 mg/kg the sample may be disposed of as construction debris, if it is to remain in California. If the result falls between 50 mg/kg and 350 mg/kg, the sample must be further analyzed by the Waste Extraction Test (WET) for Soluble Threshold Limit Concentration (STLC) as described in 22 CCR 66261.24a. If this concentration exceeds 5 mg/liter the sample must be treated as hazardous waste.

Outside of California

All lead-containing paint which may be disposed of outside the State of California must be tested for Toxicity Characteristic Leaching Procedure (TCLP) regardless of whether it is essentially intact. The sample may be a composite of the paint and the substrate if the paint is intact. Any material with results exceeding 5 mg/l must be treated as hazardous waste.

APPENDICES

APPENDIX B

CHEMICAL AND PETROLEUM PRODUCT INVENTORY

APPENDIX B
INVENTORY OF CHEMICALS AND PETROLEUM PRODUCTS SORTED BY MATERIAL TYPE

Location	Material Type	Container Size	Number of Items
Photo Lab	3M Silver Paper	boxes	40
4th	4 hour fogger	5 oz	2
B-14	5-way Lube	11.9oz	2
B-26	Add-X	5 oz	1
Loading Dock	Adhesive	1 pt	1
B-26	Aeropy Cleaner	5 gal	1
1st Floor Room Next To 118	Air Brush Propellant	11 oz	1
B-40B	Air deodorizer	7 oz	1
1st Floor Room 108	Air Freshener	16oz	1
6th Floor Room 642	Air Freshner	13.25oz	1
6th Floor	Ajax	12 oz	1
7th Floor	Ajax	12 oz	2
B-26	Ajax	21 oz	1
B-63	Ajax	21 oz	1
B-66	Ajax	21 oz	1
Room 100	Ajax	8 oz	1
Loading Dock	Alk Batteries	Various	4
Room Next to B-34	Alk Batteries	Various	3
1st Floor	Alky Beautry	1 pt	13
B-68A	Alky Brite	5 gal	1
Loading Dock	All Purpose Cleaner	16 oz	1
7th Floor	Ammonia	1 qt	1
B-40B	Ammonia	1 gal	1
Extra Room by B-34	Ammonia	32 oz	1
Room 100	Ammonia Formula	5 gal	1
Photo Lab	Ammonia Plus	1 gal	16
7th	Ant and roach killer	16 oz	1
B-34	Ant and roach killer	16 oz	1
B-68C	Ant Killer	12oz	1
B-68A	Asbestos Sealer	5 gal	3
1st Floor Kitchen Area	Asepticare	14oz	1
1st Floor Room 104	Asepticare	14oz	1
1st Floor Room 108	Asepticare	14oz	1
1st Floor Room Next to 118	Asepticare	14 oz	1
6th Floor Room 607	Asepticare	14oz	1
6th Floor Room 642	Asepticare	14oz	1
B-26	Asepticare	14oz	2
Loading Dock	Asepticare	14oz	1
7th Floor	Baking Soda	Box	3
B-34	Baking Soda	16 oz	1

APPENDIX B
INVENTORY OF CHEMICALS AND PETROLEUM PRODUCTS SORTED BY MATERIAL TYPE

Location	Material Type	Container Size	Number of Items
1st Floor Kitchen Area	Baseboard Cleaner	14oz	1
7th Floor	Bee Pollen	12 oz	60
B-66	Bering Oil	1 gal	1
B-68C	Big Blue	32 oz	1
2nd Floor	Bleach	1 gal	2
3rd Floor	Bleach	1 gal	3
5th Floor	Bleach	1 gal	1
7th Floor	Bleach	1 gal	2
B-26	Bleach	1 gal	1
Extra Room by B-34	Bleach	1 gal	1
Loading Dock	Bleach	1 gal	3
Loading Dock	BMAC Plus	1 qt	2
7th Floor	BMOC: Odor Control	1 qt	1
6th Floor	Body Jelly	16 oz	1
B-26	Bold Cleaner	1 gal	1
7th Floor	Borax	boxes	10
B-26	Borax	1 gal	1
B-63	Borax	5 lbs	1
Extra Room by B-34	Borax	5 lbs	1
B-26	Borrid	30 gal DF	1
5th Floor	Bowl Cleaner	1 gal	4
B-26	Bowl Cleaner	1 gal	2
B-68C	Break Away Penetrator	18oz	1
1st Floor	Brite Boy	1 gal	1
7th Floor	Brite Boy	16 oz	4
B-34A	Brite Boy	1 qt	1
Loading Dock	Brite Boy	1 qt	4
1st Floor Kitchen Area	Butane Gas Spray	8oz	2
7th Floor	Cannon Toner	Box	1
Loading Dock	Car Wax	16 oz	9
Loading Dock	Carpet Cleaner	1 qt	1
B-68A	Catch-all	32 oz	1
Loading Dock	Caulk	6 oz	2
Room Next to B-34	Caulk	16 oz	1
B-68	Cement Powder	6 oz	1
B-14	Chain Lube	15oz	1
B-66	Chain Lube	16oz	1
Loading Dock	Chem Floor Finish	5 gal	1
Room Next to B-34	Chico A3	16 oz	1

APPENDIX B
INVENTORY OF CHEMICALS AND PETROLEUM PRODUCTS SORTED BY MATERIAL TYPE

Location	Material Type	Container Size	Number of Items
B-40B	Chlorine Tablets	1 gal	1
1st Floor	Cleaner	1 gal	3
2nd Floor	Cleaner	1 gal	5
3rd Floor	Cleaner	1 gal	5
5th Floor	Cleaner	1 gal	8
B-68C	Cleaner	15oz	2
B-68C	Cleaner	18oz	1
Extra Room by B-34	Cleaner	5 gal	1
Loading Dock	Cleaning Solvent	5 gal	3
1st Floor Janitor Closet	Cleanser	16oz	1
B-40B	Cleanser	1 gal	1
Extra Room by B-34	Cleanser	16 oz	1
Loading Dock	Cleanser	1 qt	7
1st Floor Room 104	Clear Gloss	11.5oz	1
1st Floor Room Next To 118	Clear Varnish	18 oz	1
Loading Dock	Clippercide	13oz	1
1st Floor Room Next To 118	Color Mist	13 oz	1
B-68A	Compressor Oil	5 gal	3
Room Next to B-34	Contact Cement	1 qt	2
1st Floor Room 118	Copyaid Activator	7.25oz	1
Extra Room by B-34	Corrosion preventive compound 1	16 oz	24
B-34	Cutting Oil	1 gal	1
B-40A	Cutting Oil	5 gal	1
B-68C	Cylinder 500		
B-68C	Cylinder R-12		
Loading Dock	DAP-kwilk Seal	6 oz	2
B-66	Degon Plus	15 gal	1
Extra Room by B-34	Degon Plus	10 gal	3
B-26	Deoderizer	13oz	3
1st Floor Room 104	Deodorizer	13oz	1
6th Floor Room 661	Deodorizer	13oz	1
Extra Room by B-34	Detegent Joy	16 oz	1
7th Floor	Detergent	1 gal	1
B-35	Detergent	5 gal	1
6th Floor	Detergent Joy	21 oz	1
5th Floor Room 548-F	Dichlorodifluoromethane	35gal Cylinder	1
1st Floor Room 100	Disinfectant	18oz	1
2nd	Disinfectant	14 oz	2
7th	Disinfectant	14 oz	7

APPENDIX B
INVENTORY OF CHEMICALS AND PETROLEUM PRODUCTS SORTED BY MATERIAL TYPE

Location	Material Type	Container Size	Number of Items
Extra Room by B-34	Disinfectant	1 gal	1
B-66	Drain Opener	8 oz	1
1st Floor Room Next To 118	Dry Transfer Rejuvenator	7.5oz	4
Room Next to B-34	Drying Agent	10 gal	1
B-68C	Duct Sealer	10 oz	1
1st Floor Room 118	Dulling Spray	11oz	1
Loading Dock	Durafinish	32 oz	1
Extra Room by B-34	Durgban	10 oz	1
5th Floor Across From Room 536	Dust Mop Spray	16 oz	1
2nd	Either air freshener, disinfectant, or cleaner	16 oz	1
B-14	Electrical Parts Cleaner	20oz	1
1st Floor	Empty DM	55 gal	1
1st Floor Dinning Area	Empty Drum	55gal	1
2nd	Enamal Paint	12 oz	1
1st Floor Room Next To 118	Enamel Gloss	13 oz	3
1st Floor Kitchen Area	Enamel Spray	12oz	2
1st Floor Room 118	Entacide-R	14oz	1
1st Floor Room Next To 118	Epoxy	13 oz	1
5th Floor Across From Room 536	Epoxy Spray	12oz	1
4th Floor	Expired Meds	Various	
7th Floor	Fedron: Graphic	1 qt	4
B-40B	Filler Foam	22.5 oz	3
4th Floor	Fix-All	Bags	5
6th Floor Room 607	Fogger	5oz	1
B-40B	Form 256-RP	1 gal	1
B-68A	Frigisol	5 gal	2
6th Floor	Furniture Cleaner	16 oz	1
1st Floor	Furniture Crème	1 gal	1
B-26	Furniture Oil	14 oz	1
1st Floor Room 104	Furniture Polish	16.5 oz	1
6th Floor Room 642	Furniture Polish	16 oz	1
B-28	Furniture Polish	1 gal	10
Loading Dock	Furniture Polish	1 gal	2
7th Floor	Furniture Polish, Cream	1 gal	1

APPENDIX B
INVENTORY OF CHEMICALS AND PETROLEUM PRODUCTS SORTED BY MATERIAL TYPE

Location	Material Type	Container Size	Number of Items
B-26	Furniture Polish, Cream	1 gal	17
Loading Dock	Furniture Polish, Cream	1 gal	3
B-68C	Gasket Remover	18 oz	2
B-40A	General purpose Lubricant	11 oz	1
1st Floor Room 104	Gilette	4oz	1
4th Floor	Glass Cleaner	8 oz	1
Loading Dock	Gold Label	13oz	1
5th Floor Across From Room 536	Greaseless Lube	11oz	1
1st Floor	Hair Crème	1 gal	1
B-26	Hair So New Shampoo	1 gal	2
1st Floor Room 104	Hair Spray	7oz	1
B-63	Hand Cleaner	16 oz	1
Loading Dock	Hand Cleaner	1 gal	1
B-40B	Hand Crème	1 gal	2
5th Floor	Hand Lotion	16 oz	11
B-40B	Hand Sanitizer	1 gal	1
7th Floor	Hand Soap	1 gal	1
1st Floor Mens Room Near 112	Hard Hat Coating	16oz	1
B-40B	Hard-rock Bonder	1 gal	1
Loading Dock	Henry 430	3.5 gal	2
Loading Dock	Henry Adhesive	1 gal	7
Extra Room by B-34	Henrys	5 gal	7
B-34	Hydraulic Oil	1 qt	1
B-34A	Hydraulic Oil	1 gal	1
Loading Dock, shear	Hydraulic Oil	3 gal	1
Loading Dock compactor	Hydraulic Oil	20 gal	1
B-68C	Ice Pak	8 oz	1
1st Floor Room 104	Industrial Spray	12.5oz	1
4th Floor	Ink Cartridges	boxes	10
6th Floor	Ink Cartridges	Box	2
B-26	Ink Iradicator	2 oz	2
6th Floor	Ink Ribbons	30 gal	1
2nd	Insect Fogger	5 oz	10
4th	Insect Fogger	5 oz	1
B-34A	Insect Fogger	5 oz	4

APPENDIX B
INVENTORY OF CHEMICALS AND PETROLEUM PRODUCTS SORTED BY MATERIAL TYPE

Location	Material Type	Container Size	Number of Items
B-68C	Insect Spray	14oz	1
B-68C	Insect Spray	11oz	1
B-26	Irwin Caulk	4 oz	2
Extra Room by B-34	Jet Dry	10 gal	3
Loading Dock	Joint Compound	5 gal	1
1st Floor Room Next To 118	Krylon Dulling Spray	11 oz	5
B-34	Lead Plate	1 lbs	1
B-40A	Lead Plate	1 lbs	1
B-68C	Lead Plate	1 lbs	2
B-68C	Liquid Ice Machine	8 oz	1
B-28	Liquid Soap	1 gal	12
Loading Dock	Liquid Soap	1 gal	1
B-68C	Liquid Wrench	16 oz	1
B-34	Liquid, Unknown	10 oz	1
B-34A	Liquid, Unknown	1 gal	1
B-40B	Liquid, Unknown	1 gal	1
B-68A	Liquid, Unknown	5 gal	1
B-68C	Liquid, Unknown	5 gal	2
Hall Between B-66 & B-68	Liquid, Unknown	1 gal	1
B-14	LPS Lube	11oz	2
B-26	Lube	11oz	2
B-68A	Lube	5 gal	1
B-68C	Lube	16oz	2
7th	Lubricant 3-36	15 oz	1
B-40B	Maintex	1 gal	2
B-26	Maintone	5 gal	1
2nd	Marking paint	17 oz	1
7th	Marking paint	15 oz	1
B-26	Marking Paint	17 oz	1
1st Floor Room Next To 118	Matte Fixative	13 oz	5
1st Floor Room Next To 118	Matte Protective	13 oz	1
Loading Dock	Medallion Sealer	5 gal	1
7th Floor	Metal Brite	1 gal	1
B-34	Metal Brite	1 qt	1
B-68A	Metal Container No Label	5gal	1
1st Floor Room 104	Meter Mist	7oz	1
4th Floor	Meter Mist	8 oz	1
B-68C	Micromet Plate	32 oz	1
B-68A	Mineral Spirits	5 gal	1

APPENDIX B
INVENTORY OF CHEMICALS AND PETROLEUM PRODUCTS SORTED BY MATERIAL TYPE

Location	Material Type	Container Size	Number of Items
B-14	Moisture Displacer	15 oz	2
B-48	Monochlorodifluorom ethane	30 gal Cylinder	1
B-68C	Monochlorodifluorom ethane	30 gal Cylinder	1
B-34	Motor Oil	1 qt	1
Loading Dock	Multi-purpose Adhesive	5 gal	2
B-35	Muriatic Acid	1 gal	1
B-40B	NICd Batteries	1 gal	12
B-26	Nitroglycerin, tablets	1 oz	1
B-34	Noialox Joint Compound	16 oz	1
5th Floor Room L	Non-RCRA Detergent	1 gal	2
5th Floor	Non-RCRA Liquid	1 gal & 1 pt	2 & 4
7th	Odor Control	13 oz	1
B-34	Oil	1 qt	1
B-34A	Oil	1 gal	1
B-40	Oil	5 gal	1
B-66	Oil	16 oz	1
B-68	Oil	1 gal	1
B-68A	Oil	1 gal	5
B-68C	Oil	16 oz	1
Room Between B-11 & B-12	Oil Containers	55 gal	4
Room Between B-11 & B-12	Oil Containers	5 gal	7
B-66	Oil, Unknown	5 gal	1
Loading Dock	Old English Polish	8 oz	1
2nd Floor	Paint	1 gal	3
3rd Floor	Paint	1 gal	15
6th Floor	Paint	5 gal	1
B-26	Paint	1 qt	2
B-28	Paint	1 gal & 5 gal	80 & 40
B-68A	Paint	1 gal	1
Extra Room by B-34	Paint	5 gal & 1 gal	13 & 196
Hallway B-34	Paint	5 gal	2
Loading Dock	Paint	1 qt & 1 gal	3 & 1
Room Next to B-34	Paint	1 gal	1
4th Floor	Paint Brushes	Units	3
Room Between B-11 & B-12	Paint Cans	1 gal	11
1st Floor	Paint Stripper	55 gal	1

APPENDIX B
INVENTORY OF CHEMICALS AND PETROLEUM PRODUCTS SORTED BY MATERIAL TYPE

Location	Material Type	Container Size	Number of Items
B-34A	Paint Thinner	1 gal	1
Hall Between B-66 & B-68	Paint Thinner	5 gal	1
B-68C	Patch Spackle	1 lbs	1
Loading Dock	Patching Concrete	25 lbs bags	3
B-66	Penetrating Oil	1 gal	1
B-34	Perform Cleaner	1 qt	5
5th Floor Room 505-C	Petroleum Naphthanos	5gal	1
B-34A	Photo mount	10 oz	1
Room 100	Pine Odor	5 gal	1
B-68C	Pipe Thread	16 oz	1
Room Next to B-34	Plastic Cement	1 gal	1
1st Floor Room Next To 118	Plastic Cleaner	18 oz	1
5th Floor	Polish	16 oz	28
7th Floor	Polish	1 pt	1
Loading Dock	Polish-Liquid	1 pt	1
B-26	Powder Talc	12 oz	1
1st Floor Room 118	Pressure Tank	11oz	1
1st Floor Room 104	Prestone Lubricant	10.5oz	1
Loading Dock	Primer	32 oz	1
Photo Lab	Pro Star Plus: Developer	1 gal	12
Photo Lab	Pro Star Plus: Fixer	1 gal	28
B-68C	R-11	5gal	1
B-68C	R-22	5gal	1
6th Floor Room 622	Roach & Ant Kiler	16oz	2
1st Floor Room 100	Roach & Ant Killer	16oz	1
5th Floor Across From Room 536	Roach & Ant Killer	16oz	1
5th Floor Room 564	Roach & Ant Killer	16oz	1
6th Floor Room 649	Roach & Ant Killer	14.5oz	1
Loading Dock	Roach Killer	16oz	1
3rd Floor Room 309	Road Flares	Box	1
4th Floor	Road Flares	Box	1
6th Floor	Road Flares	Box	2
7th Floor	Road Flares	Box	1
6th Floor	Rubber Cement	1 qt	1
B-68C	Rust Buster	18oz	1
1st Floor Room Next To 118	Rust Guard	13 oz	1

APPENDIX B
INVENTORY OF CHEMICALS AND PETROLEUM PRODUCTS SORTED BY MATERIAL TYPE

Location	Material Type	Container Size	Number of Items
5th Floor Across From Room 536	Rust Lube	11 oz	1
1st Floor Room Next To 118	Rust Mate	12 oz	1
B-68A	Rust Remover	1 gal	1
Loading Dock	S515 Adhesive	3.5 gal	1
B-26	Safrotin		10
7th Floor	Sani Flush	8 oz	1
7th Floor	Sanitec Cleaner	1 gal	1
B-26	Sanitec Cleaner	1 gal	7
Hallway B-34	Sanitec Cleaner	1 gal	1
B-63	Sanitec Soap	1 gal	1
B-68A	Scale Remover	50 lbs	1
Hall Between B-66 & B-68	Seal Cutter	1 gal	1
Loading Dock	Seal-a-text	1 gal	1
Loading Dock	Sealer	1 qt	1
B-26	Sero Heat	4 oz	4
B-66	Shell Turbo Oil	5 gal	4
B-26	Sil-Glyde Lube	16 oz	1
B-40A	Silicone Sealant	10 oz	1
B-68C	Silklite	6 oz	1
B-34	Smoke detector tester	2.5 oz	1
2nd	Snow Flock	18 oz	1
7th Floor	Soap	Bars	15
B-40B	Soap	1 gal	2
B-26	Soap	Bars	5
Loading Dock	SP-80 Cleaner	12 oz	1
B-68C	Spray Bottle, Unknown	16 oz	1
Loading Dock	Spray Bottle, Unknown	1 qt	1
1st Floor	Spray Bottles, Haz Cat	1 pt	1
1st Floor Janitor Closet	Spray Cleaner	17.5oz	1
1st Floor Room 108	Spray Cleaner	17.5oz	1
B-26	Spray Lice Killer	10oz	1
7th	Spray N Strip	20 oz	1
B-34A	Spray N Strip	16 oz	1
B-26	Spray on Elec Cleaner	16oz	1
1st Floor Room Next To 118	Spray Paint	12 oz	5

APPENDIX B
INVENTORY OF CHEMICALS AND PETROLEUM PRODUCTS SORTED BY MATERIAL TYPE

Location	Material Type	Container Size	Number of Items
1st Floor Room Next To 118	Spray Paint	16 oz	1
5th Floor Across From Room 536	Spray Paint	12oz	2
5th Floor Room L	Spray Paint	12oz	1
B-28	Spray paint	12 oz	50
B-34	Spray paint	12 oz	2
B-68C	Spray Paint	12oz	5
Loading Dock	Spray Paint	12oz	3
3rd Floor Pipe Chase Near Room 340	Spray Paint	13oz	1
B-28	Spray Primer	13 oz	10
B-34	Spray Primer	13 oz	1
B-66	Spray Soap	16 oz	1
1st Floor Room Next To 118	Stan-Pen-Reinigungs	7.5oz	1
B-68C	Stripper	5gal	1
Loading Dock	Stripper	18oz	1
1st Floor Room 118	Style Hairspray	12oz	1
Loading Dock	Sudsbrite	1 gal	1
4th Floor	Super Clean	1 gal	2
B-26	Super Clean Shampoo	1 gal	1
Loading Dock	Super Cleaner	5 gal	1
1st Floor	Super Glass	1 gal	1
6th Floor	Super Glass	1 gal	1
7th Floor	Super Glass	1 gal	3
B-28	Super Glass	1 gal	6
B-68A	Super Glass	1 gal	1
Loading Dock	Super Jet Clean	1 gal	3
7th Floor	Super Kleen	1 gal	1
B-68C	Super Patch Base	1 pt	1
B-68C	Super Patch Hardner	1 pt	1
Loading Dock	Switch Cleaner	16oz	1
B-68B	SX-13	1 gal	12
Extra Room by B-34	Thinner	5 gal	1
Loading Dock	Thinner	1 qt	1
B-40B	Thinner, Paint	1 gal	1
4th Floor	Toner	Box	3
B-40B	Tool Crib lubriacant	11.9 oz	1
Room Next to B-34	Transmission Oil	1 gal	1

APPENDIX B
INVENTORY OF CHEMICALS AND PETROLEUM PRODUCTS SORTED BY MATERIAL TYPE

Location	Material Type	Container Size	Number of Items
B-26	Triumph Detergent	1 gal	1
7th Floor	TSP	Bags	1
6th Floor	Unknown	8 oz	1
B-68C	Unknown	8 oz	1
B-34	Unknown liquid in coffee jar	10 oz	1
B-34A	Unknown liquid in white translucent plastic bottle	50 oz	1
5th Floor Across From Room 536	Unknown No Label Spray Can	11 oz	1
Between B-66 & B-68	Unknown Tan Liquid	1 gal	1
B-68C	Unknown Yellow Liquid	8oz	1
Room Between B-11 & B-12	Unlabled Metal Can	5 gal	1
B-40B	USR	32 oz	1
Loading Dock	Various, Unknown	6 oz	8
Loading Dock	Varnish	13oz	1
1st Floor Room Next To 118	VHT-Window Tint	7.5 oz	1
7th Floor	Vivatone Cleaner	1 qt	1
4th Floor	Water Filter, Carbon	Units	1
B-34	Water repellent spray	16 oz	1
4th Floor	Wesson Oil	1 gal	1
7th Floor	Wexicide	1 gal	1
B-68C	Wexicide	32 oz	1
Loading Dock	Wexicide	1 gal	3
Loading Dock	Window Cleaner	19oz	1
B-68A	Wire Lube	1 gal	1
7th Floor	Wood Glow	1 qt	1
B-26	Wood Glow	5 gal	1
B-26	Zep Floor Finish	1 gal	3
B-63	Zep Formula 158	5 gal	1
1st Floor	Zep Shield	1 gal	1
B-26	Zep Soap	24 oz	1
Loading Dock	Zep-Floor Cleaner	1 gal	3
Loading Dock	Zephiran	6 oz	1

APPENDIX B
INVENTORY OF CHEMICALS AND PETROLEUM PRODUCTS SORTED BY LOCATION

Location	Material Type	Container Size	Number of Items
1st Floor	Alky Beautry	1 pt	13
1st Floor	Brite Boy	1 gal	1
1st Floor	Cleaner	1 gal	3
1st Floor	Empty DM	55 gal	1
1st Floor	Furniture Crème	1 gal	1
1st Floor	Hair Crème	1 gal	1
1st Floor	Paint Stripper	55 gal	1
1st Floor	Spray Bottles, Haz Cat	1 pt	1
1st Floor	Super Glass	1 gal	1
1st Floor	Zep Shield	1 gal	1
1st Floor Dinning Area	Empty Drum	55gal	1
1st Floor Janitor Closet	Cleanser	16oz	1
1st Floor Janitor Closet	Spray Cleaner	17.5oz	1
1st Floor Kitchen Area	Asepticare	14oz	1
1st Floor Kitchen Area	Baseboard Cleaner	14oz	1
1st Floor Kitchen Area	Butane Gas Spray	8oz	2
1st Floor Kitchen Area	Enamel Spray	12oz	2
1st Floor Mens Room Near 112	Hard Hat Coating	16oz	1
1st Floor Room 100	Disinfectant	18oz	1
1st Floor Room 100	Roach & Ant Killer	16oz	1
1st Floor Room 104	Asepticare	14oz	1
1st Floor Room 104	Clear Gloss	11.5oz	1
1st Floor Room 104	Deodorizer	13oz	1
1st Floor Room 104	Furniture Polish	16.5oz	1
1st Floor Room 104	Gilette	4oz	1
1st Floor Room 104	Hair Spray	7oz	1
1st Floor Room 104	Industrial Spray	12.5oz	1
1st Floor Room 104	Meter Mist	7oz	1
1st Floor Room 104	Prestone Lubricant	10.5oz	1
1st Floor Room 108	Air Freshener	16oz	1
1st Floor Room 108	Asepticare	14oz	1
1st Floor Room 108	Spray Cleaner	17.5oz	1
1st Floor Room 118	Copyaid Activator	7.25oz	1
1st Floor Room 118	Dulling Spray	11oz	1
1st Floor Room 118	Entacide-R	14oz	1
1st Floor Room 118	Pressure Tank	11oz	1
1st Floor Room 118	Style Hairspray	12oz	1

APPENDIX B
INVENTORY OF CHEMICALS AND PETROLEUM PRODUCTS SORTED BY LOCATION

Location	Material Type	Container Size	Number of Items
1st Floor Room Next To 118	Air Brush Propellant	11oz	1
1st Floor Room Next To 118	Asepticare	14oz	1
1st Floor Room Next To 118	Clear Varnish	18oz	1
1st Floor Room Next To 118	Color Mist	13oz	1
1st Floor Room Next To 118	Dry Transfer Rejuvenator	7.5oz	4
1st Floor Room Next To 118	Enamel Gloss	13oz	3
1st Floor Room Next To 118	Epoxy	13oz	1
1st Floor Room Next To 118	Krylon Dulling Spray	11oz	5
1st Floor Room Next To 118	Matte Fixative	13oz	5
1st Floor Room Next To 118	Matte Protective	13oz	1
1st Floor Room Next To 118	Plastic Cleaner	18oz	1
1st Floor Room Next To 118	Rust Guard	13oz	1
1st Floor Room Next To 118	Rust Mate	12oz	1
1st Floor Room Next To 118	Spray Paint	12oz	5
1st Floor Room Next To 118	Spray Paint	16oz	1
1st Floor Room Next To 118	Stan-Pen- Reinigungs	7.5oz	1
1st Floor Room Next To 118	VHT- Window Tint	7.5oz	1
2nd	Disinfectant	14 oz	2
2nd	either air freshener, disinfectant, or cleaner	16 oz	1
2nd	Enamal Paint	12 oz	1
2nd	Insect Fogger	5 oz	10
2nd	Marking paint	17 oz	1

APPENDIX B
INVENTORY OF CHEMICALS AND PETROLEUM PRODUCTS SORTED BY LOCATION

Location	Material Type	Container Size	Number of Items
2nd	Snow Flock	18 oz	1
2nd Floor	Bleach	1 gal	2
2nd Floor	Cleaner	1 gal	5
2nd Floor	Paint	1 gal	3
3rd Floor	Bleach	1 gal	3
3rd Floor	Cleaner	1 gal	5
3rd Floor	Paint	1 gal	15
3rd floor Pipe Chase Near Room 340	Spray Paint	13oz	1
3rd Floor Room 309	Road Flares	Box	1
4th	4 hour fogger	5 oz	2
4th	Insect Fogger	5 oz	1
4th Floor	Expired Meds	Various	
4th Floor	Fix-All	Bags	5
4th Floor	Glass Cleaner	8 oz	1
4th Floor	Ink Cartridges	boxes	10
4th Floor	Meter Mist	8 oz	1
4th Floor	Paint Brushes	Units	3
4th Floor	Road Flares	Box	1
4th Floor	Super Clean	1 gal	2
4th Floor	Toner	Box	3
4th Floor	Water Filter, Carbon	Units	1
4th Floor	Wesson Oil	1 gal	1
5th Floor	Bleach	1 gal	1
5th Floor	Bowl Cleaner	1 gal	4
5th Floor	Cleaner	1 gal	8
5th Floor	Hand Lotion	16 oz	11
5th Floor	Non-RCRA Liquid	1 gal & 1 pt	2 & 4
5th Floor	Polish	16 oz	28
5th Floor Across From Room 536	Dust Mop Spray	16oz	1
5th Floor Across From Room 536	Epoxy Spray	12oz	1
5th Floor Across From Room 536	Greaseless Lube	11oz	1
5th Floor Across From Room 536	Roach & Ant Killer	16oz	1
5th Floor Across From Room 536	Rust Lube	11oz	1

APPENDIX B
INVENTORY OF CHEMICALS AND PETROLEUM PRODUCTS SORTED BY LOCATION

Location	Material Type	Container Size	Number of Items
5th Floor Across From Room 536	Spray Paint	12oz	2
5th Floor Across From Room 536	Unknown No Label Spray Can	11oz	1
5th Floor Room 505-C	Petroleum Naphthanos	5gal	1
5th Floor Room 548-F	Dichlorodifluoromethane	35gal Cylinder??	1
5th Floor Room 564	Roach & Ant Killer	16oz	1
5th Floor Room L	Non-RCRA Detergent	1gal	2
5th Floor Room L	Spray Paint	12oz	1
6th Floor	Ajax	12 oz	1
6th Floor	Body Jelly	16 oz	1
6th Floor	Detergent Joy	21 oz	1
6th Floor	Furniture Cleaner	16 oz	1
6th Floor	Ink Cartridges	Box	2
6th Floor	Ink Ribbons	30 gal	1
6th Floor	Paint	5 gal	1
6th Floor	Road Flares	Box	2
6th Floor	Rubber Cement	1 qt	1
6th Floor	Super Glass	1 gal	1
6th Floor	Unknown	8 oz	1
6th Floor Room 607	Asepticare	14oz	1
6th Floor Room 607	Fogger	5oz	1
6th Floor Room 622	Roach & Ant Kiler	16oz	2
6th Floor Room 642	Air Freshner	13.25oz	1
6th Floor Room 642	Asepticare	14oz	1
6th Floor Room 642	Furniture Polish	16oz	1
6th Floor Room 649	Roach & Ant Killer	14.5oz	1
6th Floor Room 661	Deodorizer	13oz	1
7th	Ant and roach killer	16 oz	1
7th	Disinfectant	14 oz	7
7th	Lubricant 3-36	15 oz	1
7th	Marking paint	15 oz	1
7th	Odor Control	13 oz	1
7th	Spray N Strip	20 oz	1
7th Floor	Ajax	12 oz	2
7th Floor	Ammonia	1 qt	1

APPENDIX B
INVENTORY OF CHEMICALS AND PETROLEUM PRODUCTS SORTED BY LOCATION

Location	Material Type	Container Size	Number of Items
7th Floor	Baking Soda	Box	3
7th Floor	Bee Pollen	12 oz	60
7th Floor	Bleach	1 gal	2
7th Floor	BMOC: Odor Control	1 qt	1
7th Floor	Borax	boxes	10
7th Floor	Brite Boy	16 oz	4
7th Floor	Cannon Toner	Box	1
7th Floor	Detergent	1 gal	1
7th Floor	Fedron: Graphic	1 qt	4
7th Floor	Furniture Polish, Cream	1 gal	1
7th Floor	Hand Soap	1 gal	1
7th Floor	Metal Brite	1 gal	1
7th Floor	Polish	1 pt	1
7th Floor	Road Flares	Box	1
7th Floor	Sani Flush	8 oz	1
7th Floor	Sanitec Cleaner	1 gal	1
7th Floor	Soap	Bars	15
7th Floor	Super Glass	1 gal	3
7th Floor	Super Kleen	1 gal	1
7th Floor	TSP	Bags	1
7th Floor	Vivatone Cleaner	1 qt	1
7th Floor	Wexicide	1 gal	1
7th Floor	Wood Glow	1 qt	1
B-14	5-way Lube	11.9oz	2
B-14	Chain Lube	15oz	1
B-14	Electrical Parts Cleaner	20oz	1
B-14	LPS Lube	11oz	2
B-14	Moisture Displacer	15oz	2
B-26	Add-X	5 oz	1
B-26	Aeropy Cleaner	5 gal	1
B-26	Ajax	21 oz	1
B-26	Asepticare	14oz	2
B-26	Bleach	1 gal	1
B-26	Bold Cleaner	1 gal	1
B-26	Borax	1 gal	1
B-26	Borrid	30 gal DF	1
B-26	Bowl Cleaner	1 gal	2

APPENDIX B
INVENTORY OF CHEMICALS AND PETROLEUM PRODUCTS SORTED BY LOCATION

Location	Material Type	Container Size	Number of Items
B-26	Deoderizer	13oz	3
B-26	Furniture Oil	14oz	1
B-26	Furniture Polish, Cream	1 gal	17
B-26	Hair So New Shampoo	1 gal	2
B-26	Ink Iradicator	2 oz	2
B-26	Irwin Caulk	4 oz	2
B-26	Lube	11oz	2
B-26	Maintone	5 gal	1
B-26	Marking Paint	17oz	1
B-26	Nitroglycerin, tablets	1 oz	1
B-26	Paint	1 qt	2
B-26	Powder Talc	12 oz	1
B-26	Safrotin		10
B-26	Sanitec Cleaner	1 gal	7
B-26	Sero Heat	4 oz	4
B-26	Sil-Glyde Lube	16oz	1
B-26	Soap	Bars	5
B-26	Spray Lice Killer	10oz	1
B-26	Spray on Elec Cleaner	16oz	1
B-26	Super Clean Shampoo	1 gal	1
B-26	Triumph Detergent	1 gal	1
B-26	Wood Glow	5 gal	1
B-26	Zep Floor Finish	1 gal	3
B-26	Zep Soap	24 oz	1
B-28	Furniture Polish	1 gal	10
B-28	Liquid Soap	1 gal	12
B-28	Paint	1 gal & 5 gal	80 & 40
B-28	Spray paint	12 oz	50
B-28	Spray Primer	13 oz	10
B-28	Super Glass	1 gal	6
B-34	Ant and roach killer	16 oz	1
B-34	Baking Soda	16 oz	1
B-34	Cutting Oil	1 gal	1
B-34	Hydraulic Oil	1 qt	1

APPENDIX B
INVENTORY OF CHEMICALS AND PETROLEUM PRODUCTS SORTED BY LOCATION

Location	Material Type	Container Size	Number of Items
B-34	Lead Plate	1 lbs	1
B-34	Liquid, Unknown	10 oz	1
B-34	Metal Brite	1 qt	1
B-34	Motor Oil	1 qt	1
B-34	Noialox Joint Compound	16 oz	1
B-34	Oil	1 qt	1
B-34	Perform Cleaner	1 qt	5
B-34	Smoke detector tester	2.5 oz	1
B-34	Spray paint	12 oz	2
B-34	Spray Primer	13 oz	1
B-34	Unknown liquid in coffee jar	10 oz	1
B-34	Water repellent spray	16 oz	1
B-34A	Brite Boy	1 qt	1
B-34A	Hydraulic Oil	1 gal	1
B-34A	Insect Fogger	5 oz	4
B-34A	Liquid, Unknown	1 gal	1
B-34A	Oil	1 gal	1
B-34A	Paint Thinner	1 gal	1
B-34A	Photo mount	10 oz	1
B-34A	Spray N Strip	16 oz	1
B-34A	Unknown liquid in white translucent plastic bottle	50 oz	1
B-35	Detergent	5 gal	1
B-35	Muriatic Acid	1 gal	1
B-40	Oil	5 gal	1
B-40A	Cutting Oil	5 gal	1
B-40A	General purpose Lubricant	11 oz	1
B-40A	Lead Plate	1 lbs	1
B-40A	Silicone Sealant	10 oz	1
B-40B	Air deodorizer	7 oz	1
B-40B	Ammonia	1 gal	1
B-40B	Chlorine Tablets	1 gal	1
B-40B	Cleanser	1 gal	1
B-40B	Filler Foam	22.5 oz	3
B-40B	Form 256-RP	1 gal	1

APPENDIX B
INVENTORY OF CHEMICALS AND PETROLEUM PRODUCTS SORTED BY LOCATION

Location	Material Type	Container Size	Number of Items
B-40B	Hand Crème	1 gal	2
B-40B	Hand Sanitizer	1 gal	1
B-40B	Hard-rock Bonder	1 gal	1
B-40B	Liquid, Unknown	1 gal	1
B-40B	Maintex	1 gal	2
B-40B	NICd Batteries	1 gal	12
B-40B	Soap	1 gal	2
B-40B	Thinner, Paint	1 gal	1
B-40B	Tool Crib lubriacant	11.9 oz	1
B-40B	USR	32 oz	1
B-48	Monochlorodifluoromethane	30gal Cylinder ??	1
B-63	Ajax	21 oz	1
B-63	Borax	5 lbs	1
B-63	Hand Cleaner	16 oz	1
B-63	Sanitec Soap	1 gal	1
B-63	Zep Formula 158	5 gal	1
B-66	Ajax	21 oz	1
B-66	Bering Oil	1 gal	1
B-66	Chain Lube	16oz	1
B-66	Degon Plus	15 gal	1
B-66	Drain Opener	8 oz	1
B-66	Oil	16 oz	1
B-66	Oil, Unknown	5 gal	1
B-66	Penetrating Oil	1 gal	1
B-66	Shell Turbo Oil	5 gal	4
B-66	Spray Soap	16 oz	1
B-68	Cement Powder	6 oz	1
B-68	Oil	1 gal	1
B-68A	Alky Brite	5 gal	1
B-68A	Asbestos Sealer	5 gal	3
B-68A	Catch-all	32 oz	1
B-68A	Compressor Oil	5 gal	3
B-68A	Frigisol	5 gal	2
B-68A	Liquid, Unknown	5 gal	1
B-68A	Lube	5 gal	1
B-68A	Metal Container, No Label	5gal	1
B-68A	Mineral Spirits	5 gal	1
B-68A	Oil	1 gal	5

APPENDIX B
INVENTORY OF CHEMICALS AND PETROLEUM PRODUCTS SORTED BY LOCATION

Location	Material Type	Container Size	Number of Items
B-68A	Paint	1 gal	1
B-68A	Rust Remover	1 gal	1
B-68A	Scale Remover	50 lbs	1
B-68A	Super Glass	1 gal	1
B-68A	Wire Lube	1 gal	1
B-68B	SX-13	1 gal	12
B-68C	Ant Killer	12oz	1
B-68C	Big Blue	32 oz	1
B-68C	Break Away Penetrator	18oz	1
B-68C	Cleaner	15oz	2
B-68C	Cleaner	18oz	1
B-68C	Cylinder 500		
B-68C	Cylinder R-12		
B-68C	Duct Sealer	10 oz	1
B-68C	Gasket Remover	18oz	2
B-68C	Ice Pak	8 oz	1
B-68C	Insect Spray	14oz	1
B-68C	Insect Spray	11oz	1
B-68C	Lead Plate	1 lbs	2
B-68C	Liquid Ice Machine	8 oz	1
B-68C	Liquid Wrench	16 oz	1
B-68C	Liquid, Unknown	5 gal	2
B-68C	Lube	16oz	2
B-68C	Micromet Plate	32 oz	1
B-68C	Monochlorodifluoromethane	30gal Cylinder	1
B-68C	Oil	16 oz	1
B-68C	Patch Spackle	1 lbs	1
B-68C	Pipe Thread	16 oz	1
B-68C	R-11	5gal	1
B-68C	R-22	5gal	1
B-68C	Rust Buster	18oz	1
B-68C	Silklite	6 oz	1
B-68C	Spray Bottle, Unknown	16 oz	1
B-68C	Spray Paint	12oz	5
B-68C	Stripper	5gal	1
B-68C	Super Patch Base	1 pt	1

APPENDIX B
INVENTORY OF CHEMICALS AND PETROLEUM PRODUCTS SORTED BY LOCATION

Location	Material Type	Container Size	Number of Items
B-68C	Super Patch Hardner	1 pt	1
B-68C	Unknown	8 oz	1
B-68C	Unknown Yellow Liquid	8oz	1
B-68C	Wexicide	32 oz	1
Between B-66 & B-68	Unknown Tan Liquid	1gal	1
Extra Room by B-34	Ammonia	32 oz	1
Extra Room by B-34	Bleach	1 gal	1
Extra Room by B-34	Borax	5 lbs	1
Extra Room by B-34	Cleaner	5 gal	1
Extra Room by B-34	Cleanser	16 oz	1
Extra room by B-34	Corrosion preventive compound 1	16 oz	24
Extra Room by B-34	Degon Plus	10 gal	3
Extra Room by B-34	Detegent Joy	16 oz	1
Extra Room by B-34	Disinfectant	1 gal	1
Extra Room by B-34	Durgban	10 oz	1
Extra Room by B-34	Henrys	5 gal	7
Extra Room by B-34	Jet Dry	10 gal	3
Extra Room by B-34	Paint	5 gal & 1 gal	13 & 196
Extra Room by B-34	Thinner	5 gal	1
Hall Between B-66 & B-68	Liquid, Unknown	1 gal	1
Hall Between B-66 & B-68	Paint Thinner	5 gal	1
Hall Between B-66 & B-68	Seal Cutter	1 gal	1
Hallway B-34	Paint	5 gal	2
Hallway B-34	Sanitec Cleaner	1 gal	1
Loading Dock	Adhesive	1 pt	1
Loading Dock	Alk Batteries	Various	4
Loading Dock	All Purpose Cleaner	16 oz	1
Loading Dock	Asepticare	14oz	1
Loading Dock	Bleach	1 gal	3
Loading Dock	BMAC Plus	1 qt	2
Loading Dock	Brite Boy	1 qt	4
Loading Dock	Car Wax	16 oz	9

APPENDIX B
INVENTORY OF CHEMICALS AND PETROLEUM PRODUCTS SORTED BY LOCATION

Location	Material Type	Container Size	Number of Items
Loading Dock	Carpet Cleaner	1 qt	1
Loading Dock	Caulk	6 oz	2
Loading Dock	Chem Floor Finish	5 gal	1
Loading Dock	Cleaning Solvent	5 gal	3
Loading Dock	Cleanser	1 qt	7
Loading Dock	Clippercide	13oz	1
Loading Dock	DAP-kwilk Seal	6 oz	2
Loading Dock	Durafinish	32 oz	1
Loading Dock	Furniture Polish	1 gal	2
Loading Dock	Furniture Polish, Cream	1 gal	3
Loading Dock	Gold Label	13oz	1
Loading Dock	Hand Cleaner	1 gal	1
Loading Dock	Henry 430	3.5 gal	2
Loading Dock	Henry Adhesive	1 gal	7
Loading Dock	Joint Compound	5 gal	1
Loading Dock	Liquid Soap	1 gal	1
Loading Dock	Medallion Sealer	5 gal	1
Loading Dock	Multi-purpose Adhesive	5 gal	2
Loading Dock	Old English Polish	8 oz	1
Loading Dock	Paint	1 qt & 1 gal	3 & 1
Loading Dock	Patching Concrete	25 lbs bags	3
Loading Dock	Polish-Liquid	1 pt	1
Loading Dock	Primer	32 oz	1
Loading Dock	Roach Killer	16oz	1
Loading Dock	S515 Adhesive	3.5 gal	1
Loading Dock	Seal-a-text	1 gal	1
Loading Dock	Sealer	1 qt	1
Loading Dock	SP-80 Cleaner	12 oz	1
Loading Dock	Spray Bottle, Unknown	1 qt	1
Loading Dock	Spray Paint	12oz	3
Loading Dock	Stripper	18oz	1
Loading Dock	Sudsbrite	1 gal	1
Loading Dock	Super Cleaner	5 gal	1
Loading Dock	Super Jet Clean	1 gal	3
Loading Dock	Switch Cleaner	16oz	1
Loading Dock	Thinner	1 qt	1
Loading Dock	Various, Unknown	6 oz	8

APPENDIX B
INVENTORY OF CHEMICALS AND PETROLEUM PRODUCTS SORTED BY LOCATION

Location	Material Type	Container Size	Number of Items
Loading Dock	Varnish	13oz	1
Loading Dock	Wexicide	1 gal	3
Loading Dock	Window Cleaner	19oz	1
Loading Dock	Zep-Floor Cleaner	1 gal	3
Loading Dock	Zephiran	6 oz	1
Loading Dock, shear	Hydraulic Oil	3 gal	1
Loading Dock,compactor	Hydraulic Oil	20 gal	1
Photo Lab	3M Silve Paper	boxes	40
Photo Lab	Ammonia Plus	1 gal	16
Photo Lab	Pro Star Plus: Developer	1 gal	12
Photo Lab	Pro Star Plus: Fixer	1 gal	28
Room 100	Ajax	8 oz	1
Room 100	Ammonia Formula	5 gal	1
Room 100	Pine Odor	5 gal	1
Room Between B-11 & B-12	Oil Containers	55gal	4
Room Between B-11 & B-12	Oil Containers	5gal	7
Room Between B-11 & B-12	Paint Cans	1gal	11
Room Between B-11 & B-12	Unlabled Metal Can	5gal	1
Room Next to B-34	Alk Batteries	Various	3
Room Next to B-34	Caulk	16 oz	1
Room Next to B-34	Chico A3	16 oz	1
Room Next to B-34	Contact Cement	1 qt	2
Room Next to B-34	Drying Agent	10 gal	1
Room Next to B-34	Paint	1 gal	1
Room Next to B-34	Plastic Cement	1 gal	1
Room Next to B-34	Transmission Oil	1 gal	1

APPENDIX B
INVENTORY OF DEVICES WITH REFRIGERANTS AND UNIVERSAL WASTE

Floor	Water cooler	TV	CPU	Printer	Monitor	Refreg	Halon 300lbs	A/C unit	Large Refrig
basement	3	30		1	12	7		44	
1	1	6	6	2	4	5		1	
2	3	4							
3	4	1		2	1		3 tanks		
4	2				2				
5	5				6			6	
6	3		1	1	3	2		7	
7	2					1		8	
8	4							11	
9	2	1	4	1	5				
10	2								
11									
12	1								
13	1								
14	1							1	6
penthouse						1		1	
Total	34	42	11	7	33	16	3	79	6

APPENDIX C

LAB PACK GUIDELINES

APPENDIX C

LAB PACKING GUIDELINES

(Flammables, Corrosives, Toxics, Combustibles, Metals, Reactives et cetera)

1. REGULATORY REQUIREMENTS

FEDERAL REGULATIONS

- ❖Title 40, Code of Federal Regulations (CFR) – EPA regulations; Part 260 – Solid and hazardous waste. 40 CFR regulates the hazardous waste at the point of generation. Enforced by the Environmental Protection Agency (EPA).
- ❖Title 49, Code of Federal Regulations (CFR) – DOT regulations; Parts 172 & 173. 49 CFR regulates the transportation of hazardous materials. Enforced by the Department of Transportation (DOT).

CALIFORNIA STATE REGULATIONS

- ❖Title 22, California Code of Regulations (CCR), Division 4.5 – California version of Title 40. DTSC is in charge enforcing Title 22 regulations in the state of California.
- ❖State Statute: Health and Safety Code (HSC), Section 25130. The California Hazardous Waste Control Law (HWCL).

2. HAZARDOUS WASTE CHEMICAL IDENTIFICATION AND SEGREGATION

Chemicals are identified via labels, Material Safety Data Sheets, generator knowledge, chemical content, and/or Hazard Categorization System. The chemical containers are then segregated into the appropriate hazard class for lab packing.

- **CORROSIVE** (pH<2.5 or pH>12.5)
- **REACTIVE** (oxidizers, water reactive, pyrophoric)
- **FLAMMABLE** (flash point <140 F)
- **TOXIC**
- **OOXIDIZER**

3. PACKING AND CONTAINERS

Chemical waste must be lab packed into appropriate non-leaking containers with lids that are non-leaking, tight fitting and are not cracked, broken, or chemically damaged. The container must be a UN approved container, i.e., drums. Containers must be compatible with the waste it contains. Liquid containers must be less than 5 gallons and weigh less than 45 pounds. Paper or cardboard primary containers should be placed into sealed plastic bags prior to packing. Open containers must be placed into secondary packaging prior to lab packing, i.e., larger container and/or plastic bag, to prevent it from leaking. The chemicals are inventoried then carefully placed into the drum.

The individual waste containers are to be packed close together without touching other waste containers, and surrounded by an absorbent, i.e., vermiculite one layer at a time. This prevents the containers from potential movement or breakage during transport. After each layer of chemical waste placed in the drum, a layer of absorbent is place on top of it for security and to absorb any potential chemical spill. This process is done until the drum is full.

4. LABELS

The drums that have been packed according to regulatory standards and disposal facility standards are then labeled accordingly. Each label, whether printed on or affixed to a package, must be durable and weather resistant. The label must be understandable and able to withstand exposure to transportation conditions. Each label must conform to the contents of the drum and meet the guidelines of regulatory agencies. Labels should be affixed in a manner that does not cover existing labels or markings.

5. PROFILING OF WASTE STREAMS

Chemical wastes profiling are completed according to the guidelines set forth by the disposal facility.

6. ANALYTICAL DATA VALIDATION

Analytical data are validated through a federally certified analytical laboratory. Samples are sent to the laboratory under a Chain of Custody. If results do not agree with generator knowledge and/or common sense, the samples are then sent to another certified laboratory. Contractor shall consult the regulations prior to making an actual determination whether a waste is hazardous or not. Analytical testing is based on State and Federal standard methods and procedures, depending on the material to be tested.

7. PROVIDE APPLICABLE RECORDS

Chemical wastes are tracked from point of generation to the point of disposal. This is accomplished via a hazardous waste manifest that is returned to the County.