Letter Report

Limited Asbestos Survey

Birkhimer EOC
Oahu, Hawaii

PREPARED FOR:
State of Hawaii, Department of Defense
Engineering Office
3949 Diamond Head Road
Honolulu, Hawaii 96816

PREPARED BY:
Element Environmental, LLC
98-030 Hekaha Street, Unit 9
Aiea, Hawaii 96701

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April 6, 2022

Mr. James Barbour, Engineer III
Engineering Office
State of Hawaii Department of Defense
3949 Diamond Head Road
Honolulu, Hawaii 96816-4492

Subject: **Limited Asbestos Survey**
Birkhimer Emergency Operations Center (EOC), Oahu, Hawaii
Consultant Services Contract No. CA-1606-D, Change Order Nos. 5 & 13
E2 Project 190025

Dear Mr. Barbour:

Element Environmental, LLC (E2) is pleased to submit this Limited Asbestos Survey report for the State of Hawaii Department of Defense (DOD) Birkhimer EOC. The Scope of Work (SOW) is generally based on E2's accepted fee proposals dated September 28, 2021 and March 9, 2022. The DOD provided E2 with access to the project site. Sample photographs are included in Appendix A, and the analytical laboratory reports are provided in Appendix B.

The DOD wants to remediate asbestos hazards inside Birkhimer EOC where carpet and/or sheet flooring will be replaced with vinyl tile flooring.

Previous Survey

EnviroQuest, Inc. conducted a more comprehensive asbestos, lead-based paint, and PCB survey of Birkhimer EOC in October 2016 (Project 10551, dated November 2016). The survey found the black mastic under the carpet in the back row of Cubicles (what they called Area H, combined area of 950 SF) contained 3% Chrysotile asbestos. The survey found the black mastic under the flooring in the Kitchen and Dining Room (combined area of 900 SF) contained 3% Chrysotile asbestos.

Limited Asbestos Bulk Survey

The limited asbestos survey was conducted on August 25, 2021 and March 9 and 16, 2022 in accordance with U.S. EPA 40 Code of Federal Regulations (CFR) 763 Asbestos and HDOH, HAR 11-501 Asbestos Requirements. The asbestos survey consisted of the collection of bulk samples from flooring and mastic to be removed and replaced in the Administration/Reception and Pacific Disaster Center, two rows of Cubicles near the western portion of the building, and a portion of the Corridor nearby. Homogeneous Areas (HAs), which are suspect asbestos-containing materials (ACM) that appear uniform in color, texture, and function, were identified (Figure 1).

Bernice Balete (#PB-0449), the asbestos inspector who completed the sampling, is certified in accordance with the inspector training requirements of the Asbestos Hazard Emergency

Response Act (AHERA) and the HDOH Asbestos Inspector Certification Program (HAR 11-504). E2 is a HDOH-registered asbestos entity (#A-0120).

SGS is registered with the HDOH, Indoor and Radiological Health Branch, Asbestos Section. SGS is accredited by the AIHA under the Industrial Hygiene Laboratory Accreditation Program (IHLAP) for asbestos/fiber microscopy core; and the National Voluntary Laboratory Accreditation Program (NVLAP) for bulk asbestos fiber analysis. Samples were analyzed by polarized light microscopy (PLM) with dispersion staining (visual estimation), in accordance with U.S. EPA Interim Method of the Determination of Asbestos in Bulk Samples, Appendix E, Subpart E, 40 CFR 763, EPA Method 600/R-93-116, Visual Area Estimation, for standard building materials.

Asbestos bulk results (Table 1 and Figure 2) were compared to the standard presence/absence criteria for asbestos, i.e., materials containing over 1% asbestos are considered ACM. provide asbestos results. The laboratory reports also indicate other fibrous components.

TABLE 1: ASBESTOS BULK SAMPLE RESULTS

Sample Date	HA ID	Material Location	Material Description *(Lab Description)* and (Estimated Quantity)	Total % Asbestos
825/21	BT-C-01	Lobby	Ceiling Insulation	ND
825/21	**BT-F-01**	**Break Room (Kitchen/Dining Room)**	Sheet Flooring/Mastic (beige and brown "stones", distinct lines/cream) ***(black mastic)*** **(700 SF)**	**2-3% Chrysotile**
825/21	BT-F-02	Back Entry Hallway	Sheet Flooring/Mastic (beige and cream "stones", distinct lines/cream)	ND
825/21	BT-F-03	Back Entry Hallway	Sheet Flooring/Mastic (gray and cream "stones", indistinct lines/cream)	ND
3/9/22	BT-F-04	Administration/ Reception	Carpet/Mastic (brown/yellow) over Flooring/Mastic (dark red/black)	ND
3/9/22	**BT-F-05**	**Back Row of Cubicles (Area J in EQI's report)**	**Carpet/Mastic (gray/yellow and black)** ***(black and tan mastics)*** **(760 SF)**	**2% Chrysotile**
3/16/22	BT-F-06	Front Row of Cubicles	Carpet/Mastic (brown/yellow), same as F-04	ND
3/16/22	BT-F-07	Pacific Disaster Center Corridor/Office	Carpet/Mastic (brown/yellow), same as F-04	ND
825/21	BT-M-01	Break Room (Kitchen/Dining Room)	Vinyl Base/Mastic (4" beige/brown)	ND
825/21	BT-M-02	Back Entry Hallway	Vinyl Base/Mastic (4" brown/cream)	ND
3/9/22	BT-M-03	Back Row of Cubicles (Area J in EQI's report)	Vinyl Base/Mastic (4" light brown/brown)	ND

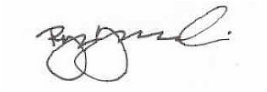
Notes:
BT = Birkhimer Tunnel, C = ceiling, F = floor, M = miscellaneous
ND = none detected
Asbestos-Containing Materials (ACM) = asbestos content greater than 1%

Inaccessible and/or hidden suspect asbestos materials not sampled during this field effort or uncovered during the abatement work should be assumed ACM and managed as such until sampled and proven otherwise. ACM that will be encountered and/or generated during possible future renovations at the project site will require proper handling, removal, and/or disposal by trained workers in accordance with the Occupational Safety and Health Administration (OSHA) Asbestos Standard 29 CFR 1926.1101, EPA National Emission Standard for Asbestos 40 CFR 61-Subpart M, and 40 CFR 763 Asbestos, among other applicable Federal and State rules and

regulations. At least ten (10) working days before demolition or disturbance of friable asbestos above reportable quantities, a “Notification of Demolition and Renovation” must be sent to the HDOH. The landfill should be consulted as to their requirements and procedures for the disposal of ACM at their facility.

We appreciate the opportunity to have worked with you on this project. Should you have any questions or require additional information related to this project, please do not hesitate to call me at (808) 864-3952.

Sincerely,
Element Environmental, LLC



Ryan S. Yamauchi, P.E.
President

Attachments

Table 1: Asbestos Bulk Sample Results

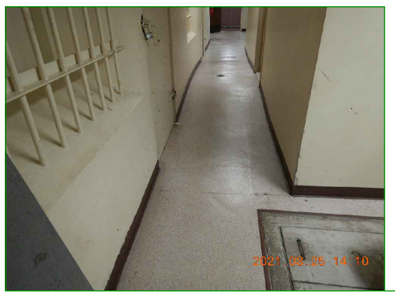
Figure 1: Approximate Asbestos Homogeneous Areas
Figure 2: Approximate Asbestos Bulk Sample Locations

Appendix A: Sample Photographs
Appendix B: Analytical Laboratory Reports

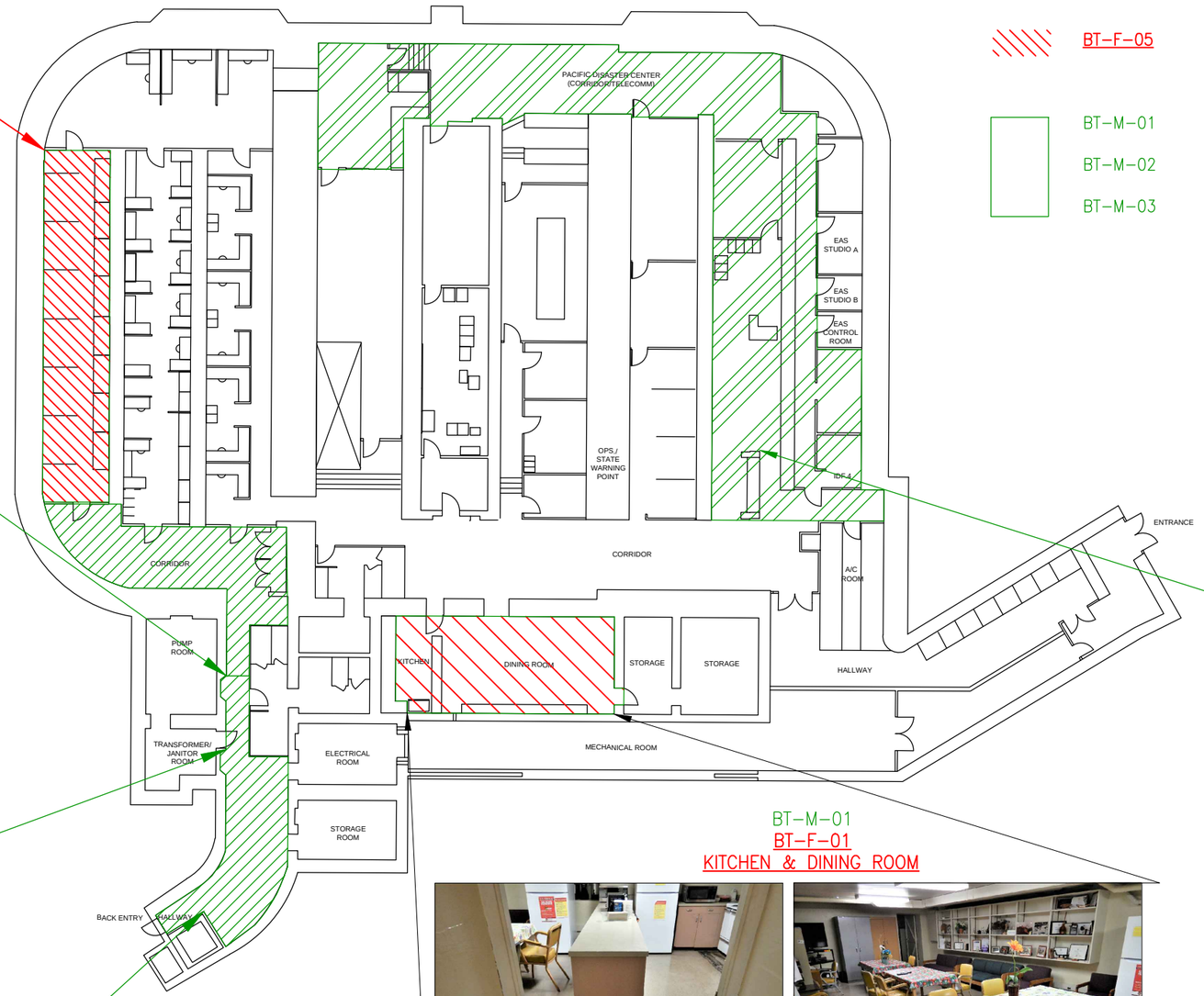
TRUE NORTH
SCALE: 1"=25'

BT-M-03
BT-F-05
BACK ROW OF CUBICLES

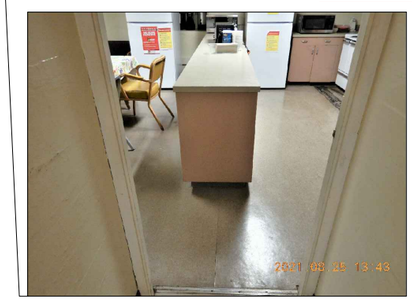
BT-F-03 & M-02
CORRIDOR

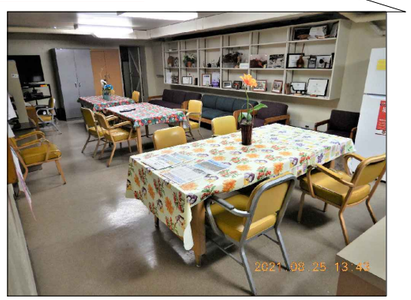


BT-F-02 & M-02
BACK ENTRY HALLWAY



BT-M-01
BT-F-01
KITCHEN & DINING ROOM





BT-F-04, 6, 7 & M-02
ADMINISTRATION/RECEPTION

LEGEND

BT-F-01	GRAY SHEET FLOORING/MASTIC (BLACK MASTIC CONTAINS 2-3% CHRYSOTILE ASBESTOS)
BT-F-02	GRAY SHEET FLOORING/MASTIC (ND FOR ASBESTOS)
BT-F-03	GRAY SHEET FLOORING/MASTIC (ND FOR ASBESTOS)
BT-F-04	BROWN CARPET/MASTIC OVER FLOORING/MASTIC (ND FOR ASBESTOS)
BT-F-05	GRAY CARPET/MASTIC (BLACK/TAN MASTICS CONTAINS 2% CHRYSOTILE ASBESTOS)
BT-M-01	BEIGE VINYL BASE/MASTIC (ND FOR ASBESTOS)
BT-M-02	BROWN VINYL BASE/MASTIC (ND FOR ASBESTOS)
BT-M-03	LIGHT BROWN VINYL BASE/MASTIC (ND FOR ASBESTOS)

25' 0 25' 50'
SCALE: 1"=25'

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PROJECT TITLE:
LIMITED ASBESTOS SURVEY, BIRKHIMER EOC
STATE OF HAWAII, DEPARTMENT OF DEFENSE

FIGURE TITLE:
APPROXIMATE ASBESTOS HOMOGENEOUS AREAS

SURVEY DATES:
AUGUST 25, 2021 &
MARCH 9 & 16, 2022

FIGURE NO.:
1

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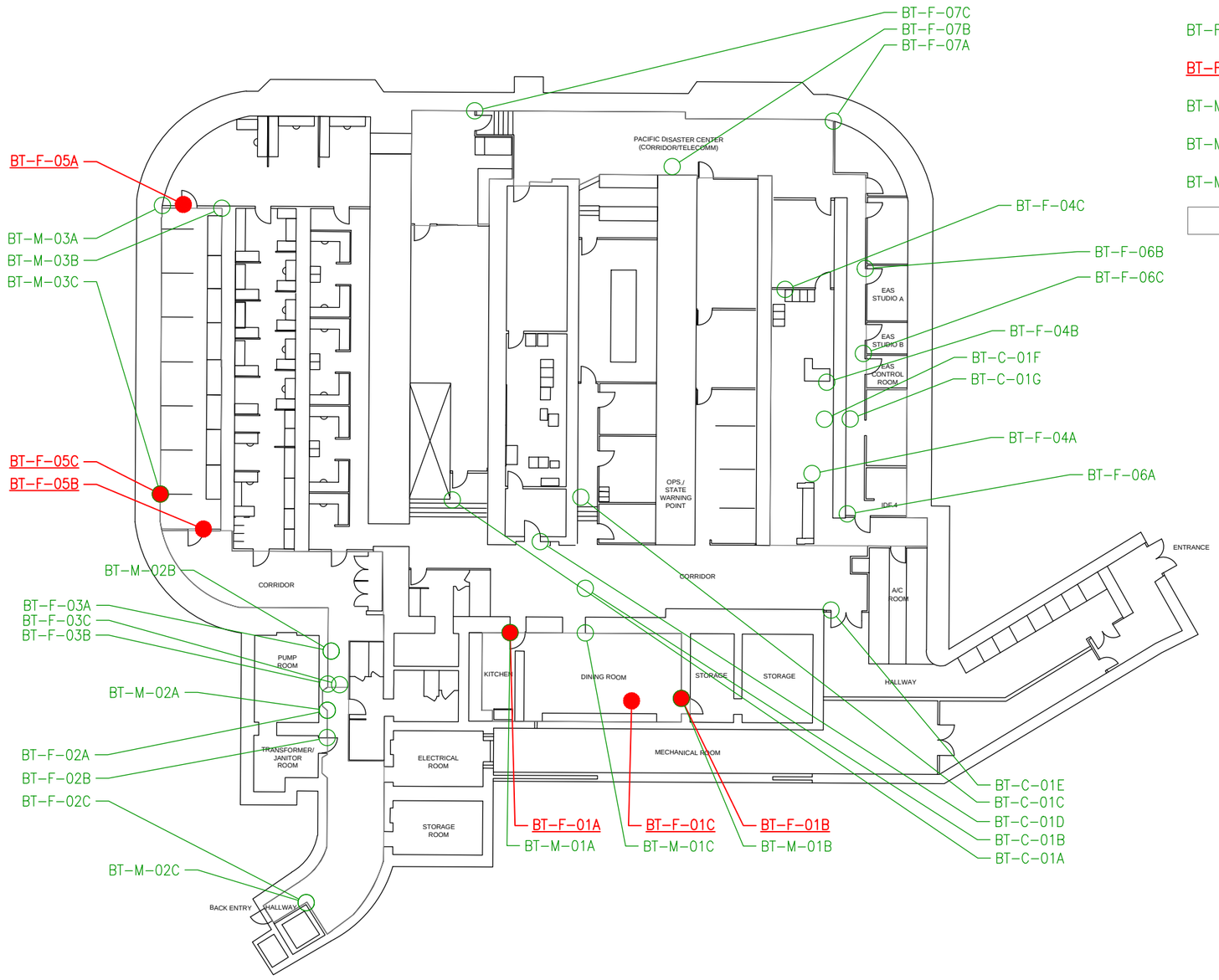
TRUE NORTH
SCALE: 1"=25'



LEGEND

BT-F-01	GRAY SHEET FLOORING/BLACK MASTIC
BT-F-02	GRAY SHEET FLOORING/MASTIC
BT-F-03	GRAY SHEET FLOORING/MASTIC
BT-F-04	BROWN CARPET/MASTIC OVER FLOORING/MASTIC
BT-F-05	GRAY CARPET/BLACK & TAN MASTIC)
BT-M-01	BEIGE VINYL BASE/MASTIC
BT-M-02	BROWN VINYL BASE/MASTIC
BT-M-03	LIGHT BROWN VINYL BASE/MASTIC
	EXTENT OF LIMITED FLOOR/BASE SURVEY

SAMPLE LOCATIONS

- NEGATIVE ASBESTOS
- POSITIVE ASBESTOS

25' 0 25' 50'

SCALE: 1"=25'

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PROJECT TITLE:
LIMITED ASBESTOS SURVEY, BIRKHIMER EOC
STATE OF HAWAII, DEPARTMENT OF DEFENSE

FIGURE TITLE:
APPROXIMATE ASBESTOS
BULK SAMPLE LOCATIONS

SURVEY DATES:
AUGUST 25, 2021 &
MARCH 9 & 16, 2022

FIGURE NO.:
2

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190025 Drawings_EL BB (1).dwg

APPENDIX A

Sample Photographs

Birkhimer EOC, Oahu, Hawaii - Asbestos
(August 25, 2021)

Photo 1 - BT-C-01A (Close-up)

Photo 2 - BT-C-01A (Panoramic)

Photo 3 - BT-C-01B (Close-up)

Photo 4 - BT-C-01B (Panoramic)

Photo 5 - BT-C-01C (Close-up)

Photo 6 - BT-C-01C (Panoramic)

Birkhimer EOC, Oahu, Hawaii - Asbestos
(August 25, 2021)

Photo 7 - BT-C-01D (Close-up)

Photo 8 - BT-C-01D (Panoramic)

Photo 9 - BT-C-01E (Close-up)

Photo 10 - BT-C-01E (Panoramic)

Photo 11 - BT-C-01F (Close-up)

Photo 12 - BT-C-01F (Panoramic)

Birkhimer EOC, Oahu, Hawaii - Asbestos
(August 25, 2021)

Photo 13 - BT-C-01G (Close-up)

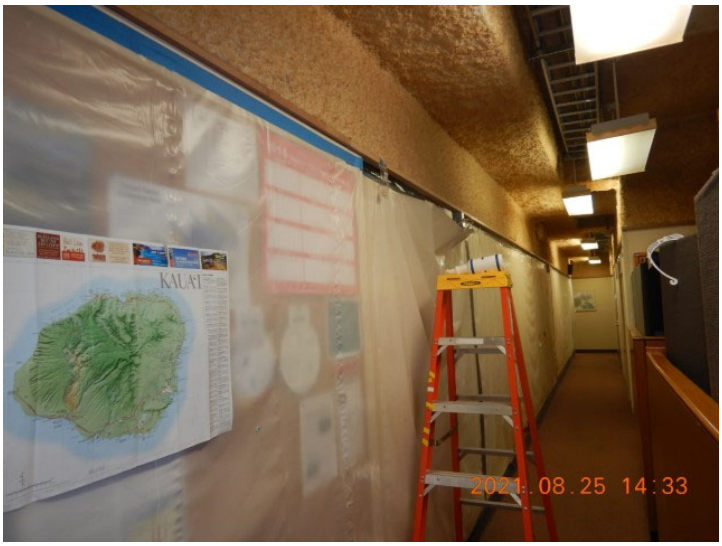

Photo 14 - BT-C-01G (Panoramic)

Birkhimer EOC, Oahu, Hawaii - Asbestos
(August 25, 2021)

Photo 15 - BT-F-01A (Close-up)

Photo 16 - BT-F-01A (Panoramic)

Photo 17 - BT-F-01B (Close-up)

Photo 18 - BT-F-01B (Panoramic)

Photo 19 - BT-F-01C (Close-up)

Photo 20 - BT-F-01C (Panoramic)

Birkhimer EOC, Oahu, Hawaii - Asbestos
(August 25, 2021)

Photo 21 - BT-F-02A (Close-up)

Photo 22 - BT-F-02A (Panoramic)

Photo 23 - BT-F-02B (Close-up)

Photo 24 - BT-F-02B (Panoramic)

Photo 25 - BT-F-02C (Close-up)

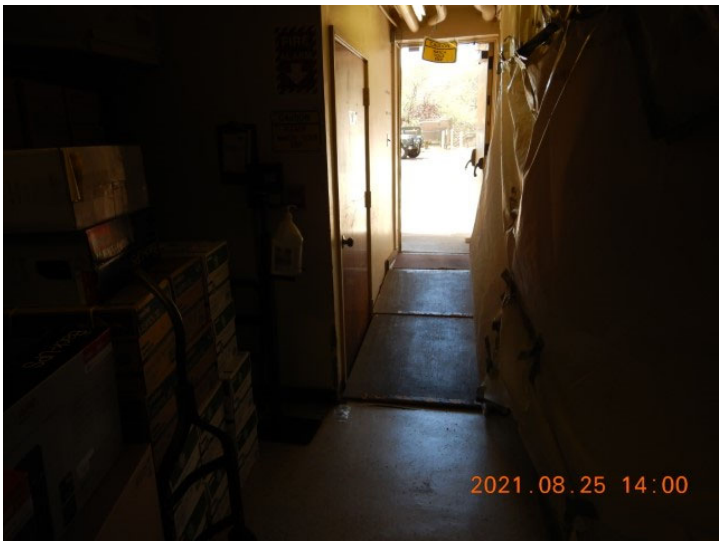

Photo 26 - BT-F-02C (Panoramic)

Birkhimer EOC, Oahu, Hawaii - Asbestos
(August 25, 2021)

Photo 27 - BT-F-03A (Close-up)

Photo 28 - BT-F-03A (Panoramic)

Photo 29 - BT-F-03B (Close-up)

Photo 30 - BT-F-03B (Panoramic)

Photo 31 - BT-F-03C (Close-up)

Photo 32 - BT-F-03C (Panoramic)

Birkhimer EOC, Oahu, Hawaii - Asbestos
(March 9, 2022)

Photo 33 - BT-F-04A (Close-up)

Photo 34 - BT-F-04A (Panoramic)

Photo 35 - BT-F-04B (Close-up)

Photo 36 - BT-F-04B (Panoramic)

Photo 37 - BT-F-04C (Close-up)

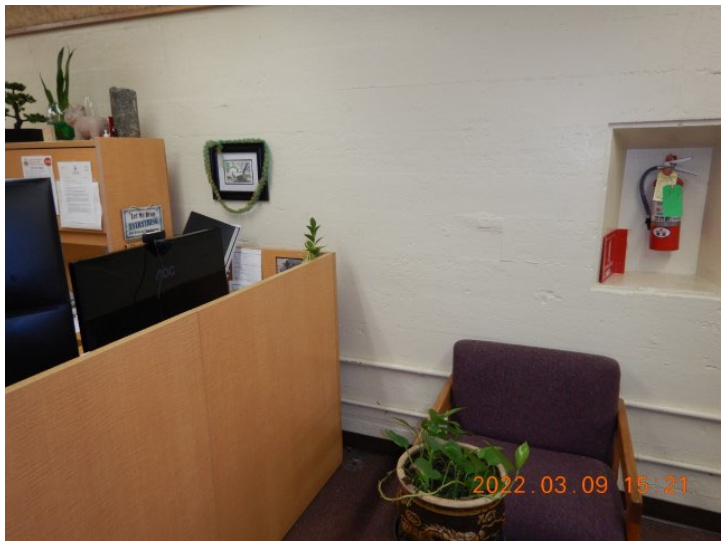

Photo 38 - BT-F-04C (Panoramic)

Birkhimer EOC, Oahu, Hawaii - Asbestos
(March 9, 2022)

Photo 39 - BT-F-05A (Close-up)

Photo 40 - BT-F-05A (Panoramic)

Photo 41 - BT-F-05B (Close-up)

Photo 42 - BT-F-05B (Panoramic)

Photo 43 - BT-F-05C (Close-up)

Photo 44 - BT-F-05C (Panoramic)

Birkhimer EOC, Oahu, Hawaii - Asbestos
(March 16, 2022)

Photo 45 - BT-F-06A (Close-up)

Photo 46 - BT-F-06A (Panoramic)

Photo 47 - BT-F-06B (Close-up)

Photo 48 - BT-F-06B (Panoramic)

Photo 49 - BT-F-06C (Close-up)

Photo 50 - BT-F-06C (Panoramic)

Birkhimer EOC, Oahu, Hawaii - Asbestos
(March 16, 2022)

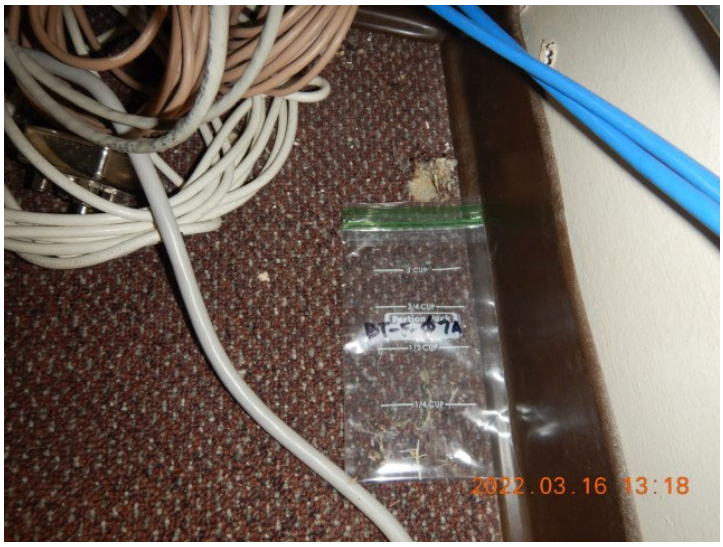

Photo 51 - BT-F-07A (Close-up)

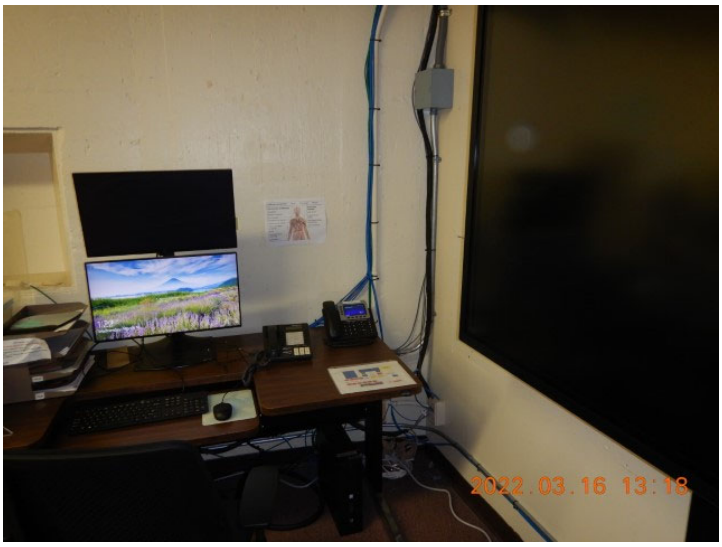

Photo 52 - BT-F-07A (Panoramic)

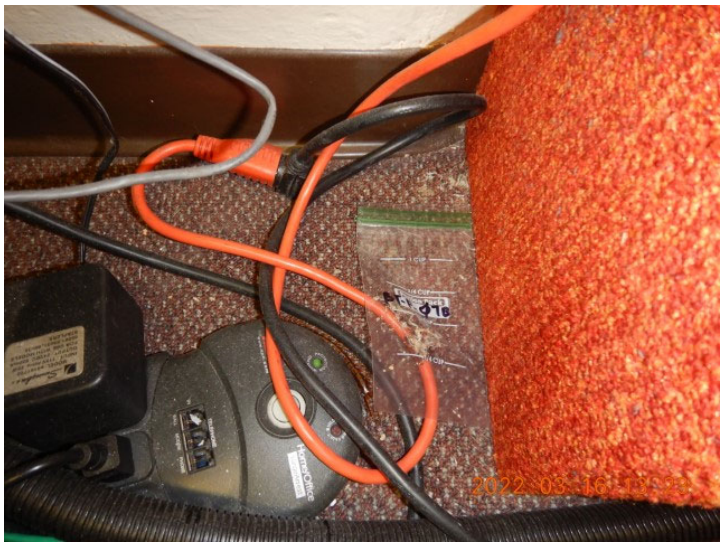
Photo 53 - BT-F-07B (Close-up)

Photo 54 - BT-F-07B (Panoramic)

Photo 55 - BT-F-07C (Close-up)

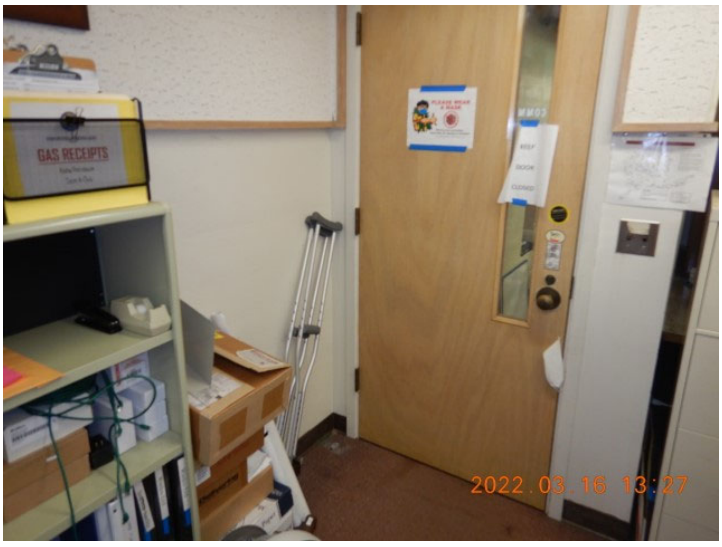

Photo 56 - BT-F-07C (Panoramic)

Birkhimer EOC, Oahu, Hawaii - Asbestos
(August 25, 2021)

Photo 57 - BT-M-01A (Close-up)

Photo 58 - BT-M-01A (Panoramic)

Photo 59 - BT-M-01B (Close-up)

Photo 60 - BT-M-01B (Panoramic)

Photo 61 - BT-M-01C (Close-up)


Photo 62 - BT-M-01C (Panoramic)

Birkhimer EOC, Oahu, Hawaii - Asbestos
(August 25, 2021)

Photo 63 - BT-M-02A (Close-up)

Photo 64 - BT-M-02A (Panoramic)

Photo 65 - BT-M-02B (Close-up)

Photo 66 - BT-M-02B (Panoramic)

Photo 67 - BT-M-02C (Close-up)

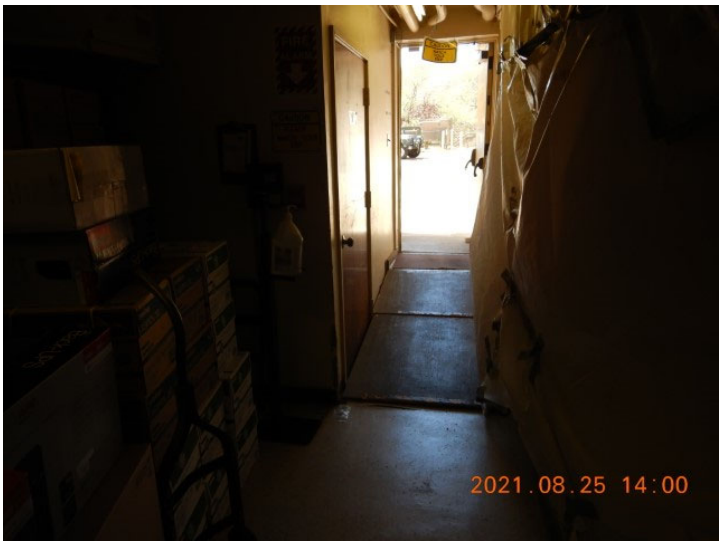

Photo 68 - BT-M-02C (Panoramic)

Birkhimer EOC, Oahu, Hawaii - Asbestos
(March 9, 2022)

Photo 69 - BT-M-03A (Close-up)

Photo 70 - BT-M-03A (Panoramic)

Photo 71 - BT-M-03B (Close-up)

Photo 72 - BT-M-03B (Panoramic)

Photo 73 - BT-M-03C (Close-up)

Photo 74 - BT-M-03C (Panoramic)

APPENDIX B

Analytical Laboratory Reports

SGS FORENSIC LABORATORIES

Final Report

Bulk Asbestos Analysis

(EPA Method 40CFR, Part 763, Appendix E to Subpart E and EPA 600/R-93-116, Visual Area Estimation)
NVLAP Lab Code: 101459-1

Element Environmental, LLC
Bernice Balete
98-030 Hekaha Street
Unit 9
Aiea, HI 96701

Client ID: L1617
Report Number: B322414
Date Received: 08/27/21
Date Analyzed: 09/03/21
Date Printed: 09/03/21
First Reported: 09/03/21

Job ID/Site: 190025; Birkhimer Tunnel; Diamond Head, Oahu, Hawaii

SGSFL Job ID: L1617
Total Samples Submitted: 22
Total Samples Analyzed: 22

Date(s) Collected: 08/25/2021

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
BT-C-01A	51472019						
Layer: Tan Fibrous Material			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (90 %)							
BT-C-01B	51472020						
Layer: Tan Fibrous Material			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (90 %)							
BT-C-01C	51472021						
Layer: Tan Fibrous Material			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (90 %)							
BT-C-01D	51472022						
Layer: Tan Fibrous Material			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (90 %)							
BT-C-01E	51472023						
Layer: Tan Fibrous Material			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (90 %)							
BT-C-01F	51472024						
Layer: Tan Fibrous Material			**ND**				
Layer: Grey Cementitious Material			**ND**				
Layer: Yellow Non-Fibrous Material			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (90 %)							
BT-C-01G	51472025						
Layer: Tan Fibrous Material			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (90 %)							

20535 South Belshaw Avenue, Carson, CA 90746 / Telephone: (310) 763-2374 (888) 813-9417 / Fax: (310) 763-4450

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
BT-F-01A	51472026						
Layer: Grey Sheet Flooring			**ND**				
Layer: Fibrous Backing			**ND**				
Layer: Yellow Mastic			**ND**				
Layer: Grey Non-Fibrous Material			**ND**				
Layer: Black Mastic		Chrysotile	**3 %**				
Total Composite Values of Fibrous Components:		**Asbestos (Trace)**					
Cellulose (20 %) Fibrous Glass (3 %) Synthetic (10 %)							
BT-F-01B	51472027						
Layer: Grey Sheet Flooring			**ND**				
Layer: Fibrous Backing			**ND**				
Layer: Yellow Mastic			**ND**				
Layer: Grey Non-Fibrous Material			**ND**				
Layer: Black Mastic		Chrysotile	**3 %**				
Total Composite Values of Fibrous Components:		**Asbestos (Trace)**					
Cellulose (20 %) Fibrous Glass (3 %) Synthetic (10 %)							
BT-F-01C	51472028						
Layer: Grey Sheet Flooring			**ND**				
Layer: Fibrous Backing			**ND**				
Layer: Yellow Mastic			**ND**				
Layer: Black Mastic		Chrysotile	**2 %**				
Layer: Grey Non-Fibrous Material			**ND**				
Layer: Brown Mastic with Debris			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (Trace)**					
Cellulose (25 %) Fibrous Glass (7 %) Synthetic (10 %)							
BT-F-02A	51472029						
Layer: Grey Sheet Flooring			**ND**				
Layer: Fibrous Backing			**ND**				
Layer: Yellow Mastic with Debris			**ND**				
Layer: Grey Non-Fibrous Material			**ND**				
Layer: Black Mastic			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (20 %) Fibrous Glass (3 %) Synthetic (7 %)							
BT-F-02B	51472030						
Layer: Grey Sheet Flooring			**ND**				
Layer: Fibrous Backing			**ND**				
Layer: Yellow Mastic			**ND**				
Layer: Grey Non-Fibrous Material			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (20 %) Fibrous Glass (5 %) Synthetic (10 %)							

20535 South Belshaw Avenue, Carson, CA 90746 / Telephone: (310) 763-2374 (888) 813-9417 / Fax: (310) 763-4450

Client Name: Element Environmental, LLC

Report Number: B322414
Date Printed: 09/03/21

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
BT-F-02C	51472031						
Layer: Grey Sheet Flooring			**ND**				
Layer: Fibrous Backing			**ND**				
Layer: Yellow Mastic			**ND**				
Layer: Grey Non-Fibrous Material			**ND**				
Total Composite Values of Fibrous Components: Cellulose (20 %) Fibrous Glass (5 %) Synthetic (10 %)		**Asbestos (ND)**					
BT-F-03A	51472032						
Layer: Grey Sheet Flooring			**ND**				
Layer: Fibrous Backing			**ND**				
Layer: Yellow Mastic			**ND**				
Layer: Grey Non-Fibrous Material			**ND**				
Layer: Black Mastic			**ND**				
Total Composite Values of Fibrous Components: Cellulose (20 %) Fibrous Glass (5 %) Synthetic (10 %)		**Asbestos (ND)**					
BT-F-03B	51472033						
Layer: Grey Sheet Flooring			**ND**				
Layer: Fibrous Backing			**ND**				
Layer: Yellow Mastic			**ND**				
Layer: White Mastic			**ND**				
Layer: Grey Non-Fibrous Material			**ND**				
Total Composite Values of Fibrous Components: Cellulose (20 %) Fibrous Glass (5 %) Synthetic (10 %)		**Asbestos (ND)**					
BT-F-03C	51472034						
Layer: Grey Sheet Flooring			**ND**				
Layer: Fibrous Backing			**ND**				
Layer: Grey Non-Fibrous Material			**ND**				
Layer: Black Mastic			**ND**				
Total Composite Values of Fibrous Components: Cellulose (20 %) Fibrous Glass (5 %) Synthetic (10 %)		**Asbestos (ND)**					
BT-M-01A	51472035						
Layer: Brown Non-Fibrous Material			**ND**				
Layer: Brown Mastic			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
BT-M-01B	51472036						
Layer: Brown Non-Fibrous Material			**ND**				
Layer: Brown Mastic			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					

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Client Name: Element Environmental, LLC

Report Number: B322414
Date Printed: 09/03/21

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
BT-M-01C	51472037						
Layer: Brown Non-Fibrous Material			**ND**				
Layer: Brown Mastic			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
BT-M-02A	51472038						
Layer: Brown Non-Fibrous Material			**ND**				
Layer: Brown Mastic			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
BT-M-02B	51472039						
Layer: Brown Non-Fibrous Material			**ND**				
Layer: White Mastic			**ND**				
Layer: Black Mastic			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
BT-M-02C	51472040						
Layer: Brown Non-Fibrous Material			**ND**				
Layer: White Mastic			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					

Tiffani Ludd, Laboratory Supervisor, Carson Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

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Forensic Analytical LABORATORIES

Analysis Request Form (COC)

Client Name & Address: Client No.: L1617

Element Environmental, LLC
98-030 Hekaha Street, Unit 9
Aiea, Hawaii 96701

PO / Job#: 190025 Date: 8/25/2021

Turn Around Time: Same Day / 1Day / 2Day / 3Day / 4Day / 5Day

☐ PCM: ☐ NIOSH 7400A / ☐ NIOSH 7400B ☐ Rotometer

☒ PLM: ☒ Standard / ☐ Point Count 400 / 1000 / ☐ CARB 435

Contact: Bernice Balete Phone: (808) 389-4792

E-mail: bbalete@e2hi.com

☐ TEM Air: ☐ AHERA / ☐ Yamate2 / ☐ NIOSH 7402
☐ TEM Bulk: ☐ Quantitative / ☐ Qualitative / ☐ Chatfield
☐ TEM Water: ☐ Potable / ☐ Non-Potable / ☐ Weight %
☐ TEM Microvac: ☐ Qual / ☐ D5755(str/area) / ☐ D5756(str/mass)

Site Name: Birkhimer Tunnel

☐ IAQ Particle Identification (PLM LAB) ☐ PLM Opaques/Soot
☐ Particle Identification (TEM LAB) ☐ Special Project

Site Location: Diamond Head, Oahu, Hawaii

☐ Metals Analysis Matrix: Method:
Analytes:

Comments: **See the attached table for bulk sample information.**

☐ Silica in Air ☐ w/Gravimetry
☐ Quartz Only

Sample ID	Date / Time	Sample Location / Description	FOR AIR SAMPLES ONLY				Sample Area / Air Volume
			Type	Time On/Off	Avg LPM	Total Time	
			A P C				
			A P C				
			A P C				
			A P C				
			A P C				
			A P C				
			A P C				
			A P C				
			A P C				
			A P C				

Sampled By: Bernice Balete Date/Time: 8/25/2021 Shipped Via: ☒ Fed Ex ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished By: Bernice Balete	Relinquished By:	Relinquished By:
Date / Time: 8/26/2021 @ 1400	Date / Time:	Date / Time:
Received By:	Received By:	Received By:
Date / Time: 8-27-21 10:27 HE	Date / Time:	Date / Time:
Condition Acceptable? ☐ Yes ☐ No 290	Condition Acceptable? ☐ Yes ☐ No	Condition Acceptable? ☐ Yes ☐ No

Forensic Analytical Laboratories may subcontract client samples to other FAL locations to meet client requests.
San Francisco Office: 3777 Depot Road, Suite 409, Hayward, CA 94545-2761 • Phone: 510/887-8828 • 800/827-3274
Los Angeles Office: 2959 Pacific Commerce Drive, Rancho Dominguez, CA 90221 • Phone: 310/763-2374 • 888/813-9417
Las Vegas Office: 6765 S. Eastern Avenue, Suite 3, Las Vegas, NV 89119 • Phone: 702/784-0040

Sample ID	Sample Date	Sample Location	Sample Description
BT-C-01A	8/25/2021	Lobby	Ceiling Insulation
BT-C-01B	8/25/2021	Lobby	Ceiling Insulation
BT-C-01C	8/25/2021	Lobby	Ceiling Insulation
BT-C-01D	8/25/2021	Lobby	Ceiling Insulation
BT-C-01E	8/25/2021	Lobby	Ceiling Insulation
BT-C-01F	8/25/2021	Lobby	Ceiling Insulation
BT-C-01G	8/25/2021	Lobby	Ceiling Insulation
BT-F-01A	8/25/2021	Break Room	Sheet Flooring/Mastic (beige and brown "stones", distinct lines/cream)
BT-F-01B	8/25/2021	Break Room	Sheet Flooring/Mastic (beige and brown "stones", distinct lines/cream)
BT-F-01C	8/25/2021	Break Room	Sheet Flooring/Mastic (beige and brown "stones", distinct lines/cream)
BT-F-02A	8/25/2021	Hallway	Sheet Flooring/Mastic (beige and cream "stones", distinct lines/cream)
BT-F-02B	8/25/2021	Hallway	Sheet Flooring/Mastic (beige and cream "stones", distinct lines/cream)
BT-F-02C	8/25/2021	Hallway	Sheet Flooring/Mastic (beige and cream "stones", distinct lines/cream)
BT-F-03A	8/25/2021	Hallway	Sheet Flooring/Mastic (gray and cream "stones", indistinct lines/cream)
BT-F-03B	8/25/2021	Hallway	Sheet Flooring/Mastic (gray and cream "stones", indistinct lines/cream)
BT-F-03C	8/25/2021	Hallway	Sheet Flooring/Mastic (gray and cream "stones", indistinct lines/cream)
BT-M-01A	8/25/2021	Break Room	Vinyl Base/Mastic (4" beige/brown)
BT-M-01B	8/25/2021	Break Room	Vinyl Base/Mastic (4" beige/brown)
BT-M-01C	8/25/2021	Break Room	Vinyl Base/Mastic (4" beige/brown)
BT-M-02A	8/25/2021	Hallway	Vinyl Base/Mastic (4" brown/cream)
BT-M-02B	8/25/2021	Hallway	Vinyl Base/Mastic (4" brown/cream)
BT-M-02C	8/25/2021	Hallway	Vinyl Base/Mastic (4" brown/cream)

SGS FORENSIC LABORATORIES

Final Report

Bulk Asbestos Analysis

(EPA Method 40CFR, Part 763, Appendix E to Subpart E and EPA 600/R-93-116, Visual Area Estimation)
NVLAP Lab Code: 101459-1

Element Environmental, LLC
Bernice Balete
98-030 Hekaha Street
Unit 9
Aiea, HI 96701

Client ID: L1617
Report Number: B330274
Date Received: 03/11/22
Date Analyzed: 03/11/22
Date Printed: 03/11/22
First Reported: 03/11/22

Job ID/Site: 190025; Birkhimer Tunnel; Diamond Head, Oahu, Hawaii

SGSFL Job ID: L1617
Total Samples Submitted: 9
Total Samples Analyzed: 9

Date(s) Collected: 03/09/2022

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
BT-F-04A	51526761						
Layer: Grey Carpet Debris			**ND**				
Layer: Tan Mastic			**ND**				
Layer: Red-Brown Sheet Flooring			**ND**				
Layer: Fibrous Backing			**ND**				
Layer: Black Mastic			**ND**				
Layer: Grey Cementitious Material			**ND**				
Total Composite Values of Non-Asbestos Fibrous Components: Cellulose (55 %) Synthetic (5 %)							
BT-F-04B	51526762						
Layer: Grey Carpet Debris			**ND**				
Layer: Tan Mastic			**ND**				
Layer: Red-Brown Sheet Flooring			**ND**				
Layer: Fibrous Backing			**ND**				
Layer: Black Mastic			**ND**				
Total Composite Values of Non-Asbestos Fibrous Components: Cellulose (55 %) Synthetic (5 %)							
BT-F-04C	51526763						
Layer: Grey Carpet Debris			**ND**				
Layer: Tan Mastic			**ND**				
Layer: Red-Brown Sheet Flooring			**ND**				
Layer: Fibrous Backing			**ND**				
Layer: Black Mastic			**ND**				
Total Composite Values of Non-Asbestos Fibrous Components: Cellulose (55 %) Synthetic (5 %)							
BT-F-05A	51526764						
Layer: Grey Carpet Debris			**ND**				
Layer: Black/Tan Mastics		Chrysotile	**2 %**				
Layer: Off-White Non-Fibrous Material			**ND**				
Total Composite Values of Non-Asbestos Fibrous Components: Cellulose (Trace) Synthetic (5 %)							

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Report Number: B330274
Client Name: Element Environmental, LLC **Date Printed:** 03/11/22

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
BT-F-05B	51526765						
Layer: Grey Carpet Debris			**ND**				
Layer: Black/Tan Mastics		Chrysotile	**2 %**				
Layer: Off-White Non-Fibrous Material			**ND**				
Total Composite Values of Non-Asbestos Fibrous Components: Cellulose (Trace) Synthetic (5 %)							
BT-F-05C	51526766						
Layer: Grey Carpet Debris			**ND**				
Layer: Black/Tan Mastics		Chrysotile	**2 %**				
Layer: Off-White Non-Fibrous Material			**ND**				
Layer: Grey Non-Fibrous Material			**ND**				
Layer: Brown Mastic			**ND**				
Total Composite Values of Non-Asbestos Fibrous Components: Cellulose (Trace) Synthetic (5 %)							
BT-M-03A	51526767						
Layer: Brown Non-Fibrous Material			**ND**				
Layer: Brown Mastic			**ND**				
Total Composite Values of Non-Asbestos Fibrous Components: Cellulose (Trace)							
BT-M-03B	51526768						
Layer: Brown Non-Fibrous Material			**ND**				
Layer: Brown Mastic			**ND**				
Total Composite Values of Non-Asbestos Fibrous Components: Cellulose (Trace)							
BT-M-03C	51526769						
Layer: Brown Non-Fibrous Material			**ND**				
Layer: Brown Mastic			**ND**				
Total Composite Values of Non-Asbestos Fibrous Components: Cellulose (Trace)							

Tiffani Ludd, Laboratory Supervisor, Carson Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

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SGS FORENSIC LABORATORIES

Analysis Request Form (COC)

Client Name & Address: Element Environmental, LLC 98-030 Hekaha Street, Unit 9 Aiea, Hawaii 96701	Client No.: L1617
PO / Job#: 190025	Date: 3/10/2022
Turn Around Time: Same Day / 1Day / 2Day / 3Day / 4Day / 5Day	
☐ PCM: ☐ NIOSH 7400A / ☐ NIOSH 7400B ☐ Rotometer	
☒ PLM: ☒ Standard / ☐ Point Count 400 / 1000 / ☐ CARB 435	
Contact: Bernice Balete	Phone: (808) 389-4792
☐ TEM Air: ☐ AHERA / ☐ Yamate2 / ☐ NIOSH 7402 ☐ TEM Bulk: ☐ Quantitative / ☐ Qualitative / ☐ Chatfield ☐ TEM Water: ☐ Potable / ☐ Non-Potable / ☐ Weight % ☐ TEM Microvac: ☐ Qual / ☐ D5755(str/area) / ☐ D5756(str/mass)	
E-mail: bbalete@e2hi.com	
Site Name: Birkhimer Tunnel	☐ IAQ Particle Identification (PLM LAB) ☐ PLM Opaques/Soot ☐ Particle Identification (TEM LAB) ☐ Special Project
Site Location: Diamond Head, Oahu, Hawaii	☐ Metals Analysis Matrix: Method: Analytes:
Comments: **Page 1 of 1**	☐ Silica in Air ☐ w/Gravimetry ☐ Quartz Only

Sample ID	Date / Time	Sample Location / Description	FOR AIR SAMPLES ONLY				Sample Area / Air Volume
			Type	Time On/Off	Avg LPM	Total Time	
BT-F-04A	3/9/2022	Admin/Reception / Carpet/Mastic (brown/yellow) over Flooring/Mastic (dark red/black)	A P C				
BT-F-04B	3/9/2022	Admin/Reception / Carpet/Mastic (brown/yellow) over Flooring/Mastic (dark red/black)	A P C				
BT-F-04C	3/9/2022	Admin/Reception / Carpet/Mastic (brown/yellow) over Flooring/Mastic (dark red/black)	A P C				
BT-F-05A	3/9/2022	Back Row of Offices / Carpet/Mastic (gray/yellow and black)	A P C				
BT-F-05B	3/9/2022	Back Row of Offices / Carpet/Mastic (gray/yellow and black)	A P C				
BT-F-05C	3/9/2022	Back Row of Offices / Carpet/Mastic (gray/yellow and black)	A P C				
BT-M-03A	3/9/2022	Back Row of Offices / Vinyl Base/Mastic (4" light brown/brown)	A P C				
BT-M-03B	3/9/2022	Back Row of Offices / Vinyl Base/Mastic (4" light brown/brown)	A P C				
BT-M-03C	3/9/2022	Back Row of Offices / Vinyl Base/Mastic (4" light brown/brown)	A P C				
			A P C				

Sampled By: Bernice Balete Date/Time: 3/9/2022 Shipped Via: ☒ Fed Ex ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished By: Bernice Balete Date / Time: 3/10/2022 @ 1000	Relinquished By: Date / Time:	Relinquished By: Date / Time:
Received By: Date / Time: 3-10-22 9:47 PIE Condition Acceptable? ☒ Yes ☐ No 3069	Received By: Date / Time: Condition Acceptable? ☐ Yes ☐ No	Received By: Date / Time: Condition Acceptable? ☐ Yes ☐ No

SGS FORENSIC LABORATORIES

Final Report

Bulk Asbestos Analysis

(EPA Method 40CFR, Part 763, Appendix E to Subpart E and EPA 600/R-93-116, Visual Area Estimation)
NVLAP Lab Code: 101459-1

Element Environmental, LLC
Bernice Balete
98-030 Hekaha Street
Unit 9
Aiea, HI 96701

Client ID: L1617
Report Number: B330576
Date Received: 03/17/22
Date Analyzed: 03/18/22
Date Printed: 03/18/22
First Reported: 03/18/22

Job ID/Site: 190025; Birkhimer Tunnel, Diamond Head, Oahu, Hawaii

SGSFL Job ID: L1617
Total Samples Submitted: 6
Total Samples Analyzed: 6

Date(s) Collected: 03/16/2022

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
BT-F-06A	51528929						
Layer: Grey Fibrous Material			**ND**				
Layer: Tan Mastic with Debris			**ND**				
Total Composite Values of Non-Asbestos Fibrous Components: Cellulose (75 %) Synthetic (15 %)							
BT-F-06B	51528930						
Layer: Red/Green Carpet			**ND**				
Layer: Tan Mastic with Debris			**ND**				
Total Composite Values of Non-Asbestos Fibrous Components: Cellulose (Trace) Synthetic (85 %)							
BT-F-06C	51528931						
Layer: Red/Green Carpet			**ND**				
Layer: Tan Mastic with Debris			**ND**				
Total Composite Values of Non-Asbestos Fibrous Components: Cellulose (Trace) Synthetic (85 %)							
BT-F-07A	51528932						
Layer: Red/Green Carpet			**ND**				
Layer: Tan Mastic with Debris			**ND**				
Total Composite Values of Non-Asbestos Fibrous Components: Cellulose (Trace) Synthetic (85 %)							
BT-F-07B	51528933						
Layer: Red/Green Carpet			**ND**				
Layer: Tan Mastic with Debris			**ND**				
Total Composite Values of Non-Asbestos Fibrous Components: Cellulose (Trace) Synthetic (85 %)							
BT-F-07C	51528934						
Layer: Red/Green Carpet			**ND**				
Layer: Tan Mastic with Debris			**ND**				
Total Composite Values of Non-Asbestos Fibrous Components: Cellulose (Trace) Synthetic (85 %)							

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Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer

Tiffani Ludd, Laboratory Supervisor, Carson Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

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SGS FORENSIC LABORATORIES

Analysis Request Form (COC)

Client Name & Address: Client No.: L1617

Element Environmental, LLC
98-030 Hekaha Street, Unit 9
Aiea, Hawaii 96701

PO / Job#: 190025 Date: 3/16/2022

Turn Around Time: Same Day / 1Day / 2Day / 3Day / 4Day / 5Day

☐ PCM: ☐ NIOSH 7400A / ☐ NIOSH 7400B ☐ Rotometer

☒ PLM: ☒ Standard / ☐ Point Count 400 / 1000 / ☐ CARB 435

Contact: Bernice Balete Phone: (808) 389-4792

E-mail: bbalete@e2hi.com

☐ TEM Air: ☐ AHERA / ☐ Yamate2 / ☐ NIOSH 7402
☐ TEM Bulk: ☐ Quantitative / ☐ Qualitative / ☐ Chatfield
☐ TEM Water: ☐ Potable / ☐ Non-Potable / ☐ Weight %
☐ TEM Microvac: ☐ Qual / ☐ D5755(str/area) / ☐ D5756(str/mass)

Site Name: Birkhimer Tunnel

☐ IAQ Particle Identification (PLM LAB) ☐ PLM Opaques/ Soot
☐ Particle Identification (TEM LAB) ☐ Special Project

Site Location: Diamond Head, Oahu, Hawaii

☐ Metals Analysis Matrix: Method: Analytes:

Comments: **Page 1 of 1**

☐ Silica in Air ☐ w/Gravimetry
☐ Quartz Only

Sample ID	Date / Time	Sample Location / Description	FOR AIR SAMPLES ONLY				Sample Area / Air Volume
			Type	Time On/Off	Avg LPM	Total Time	
BT-F-06A	3/16/22	Front Row of Cubicles / Carpet/Mastic (brown/yellow)	A P C				
BT-F-06B	3/16/22	Front Row of Cubicles / Carpet/Mastic (brown/yellow)	A P C				
BT-F-06C	3/16/22	Front Row of Cubicles / Carpet/Mastic (brown/yellow)	A P C				
BT-F-07A	3/16/22	Pacific Disaster Center Corridor/Office / Carpet/Mastic (brown/yellow)	A P C				
BT-F-07B	3/16/22	Pacific Disaster Center Corridor/Office / Carpet/Mastic (brown/yellow)	A P C				
BT-F-07C	3/16/22	Pacific Disaster Center Corridor/Office / Carpet/Mastic (brown/yellow)	A P C				
			A P C				
			A P C				
			A P C				
			A P C				

Sampled By: Bernice Balete Date/Time: 3/16/2022 Shipped Via: ☒ Fed Ex ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished By: Bernice Balete	Relinquished By:	Relinquished By:
Date / Time: 3/16/2022 @ 1500	Date / Time:	Date / Time:
Received By: FE 5643	Received By:	Received By:
Date / Time: 3/17/22 09:58AM	Date / Time:	Date / Time:
Condition Acceptable? ☐ Yes ☐ No	Condition Acceptable? ☐ Yes ☐ No	Condition Acceptable? ☐ Yes ☐ No