

LEAHI HOSPITAL HAWAII HEALTH SYSTEMS CORPORATION

3675 Kilauea Avenue ■ Honolulu, Hawaii 96816 ■ Telephone: (808) 733-8000

March 30, 2022

- TO: Interested Bidders
- FROM: Scott Kawai And Kawai Contracts Department
- SUBJECT: Addendum No. 1 IFB No. 21L-0404 Leahi Hospital Young Building Sub-Basement – Food Service Operations Phase 1

Addendum No. 1 provides clarifications for the subject solicitation.

INVITATION FOR BIDS for LEAHI HOSPITAL YOUNG BUILDING SUB-BASEMENT – FOOD SERVICE OPERATIONS PHASE 1 Honolulu, Hawaii

IFB NO. 21L-0404

ADDENDUM NO. 1

March 30, 2022

The items listed hereinafter are hereby made a part of the contract for the above project and shall govern the work, taking precedence over previously issued plans and specifications governing the items mentioned:

A. <u>SPECIFICATIONS</u>

- 1. TABLE OF CONTENTS Revise Table of Contents to add new Sections.
- 2. Add Section 01715 EXISTING CONDITIONS ASBESTOS / LEAD/HAZARDOUS MATERIAL SURVEY, pages 1 2.
- 3. Add INSPECTION REPORT FOR ASBESTOS AND LEAD-BASED PAINT 37 pages, dated February 2022.
- 4. Add Section 13281 ASBESTOS ABATEMENT, pages 1 27.
- 5. Add Section 13282 LEAD PAINT CONTROL MEASURES, pages 1 12.
- 6. Add Section 13288 TESTING AND AIR MONITORING, pages 1 4

END OF ADDENDUM NO. 1

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SECTION 01715 - EXISTING CONDITIONS - ASBESTOS / LEAD / HAZARDOUS MATERIAL SURVEY

<u> PART 1 - GENERAL</u>

1.01 <u>SUMMARY</u>

- A. This section includes the results of the State's survey for Asbestos, Lead and / or other hazardous materials and is provided for the Contractor's information.
- B. <u>Related Sections include the following</u>:
 - 1. SECTION 13281 ASBESTOS ABATEMENT for all work which disturbs asbestos.
 - 2. SECTION 13282 Lead Paint Control Measures for all work which disturbs lead.
 - 3. SECTION 13288 TESTING AND AIR MONITORING for air testing requirements.

1.02 <u>ASBESTOS</u>

- A. The structure or structures to be renovated or modified under this contract were surveyed for the presence of asbestos containing building materials (ACBM), using AHERA requirements. A copy of the initial survey report, as well as any subsequent supplemental survey report(s) if performed, are included in this Section.
 - 1. The report is included, even when no ACM was found, for the Contractor's information. Review the attached report for the basis on which the negative ACM finding was made. Contractor may perform further surveys at its own expense, if ACM not shown in the report is suspected in the areas of the building in which work will be performed. If ACM is found, notify the State Representative immediately. The State will reimburse the Contractor for the testing cost if ACM is found.
 - 2. If there is ACM outside of the areas in which work will be performed, this ACM shall not be disturbed in any way.
- B. If applicable, notify employees, subcontractors, and all other persons engaged on the project of the presence of asbestos in the existing buildings in accordance with the State of Hawaii: Occupational Safety and Health Administration and 29 CFR 1926.1101, Asbestos.
- C. In the event that work is required in any building or buildings on the site other than the one(s) designated within this project scope, request copies of the asbestos survey report(s) for such building(s) from the State

Representative. Based on the information contained in the additional survey(s), notify affected personnel.

1.03 LEAD PAINT

- A. Inform employees, Subcontractors and all other persons engaged in the project that lead containing material is present in the existing building(s) and at the job site. Follow the requirements of 29 CFR 1926.62 Lead.
- B. Review the attached lead testing data which identify locations of lead containing material was found. Lead testing was for design purposes only, and the results do not satisfy any of the requirements of 29 CFR 1926.62 Lead.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

- 3.01 SURVEY
 - A. Inspection Report for Asbestos and Lead-Based Paint, 37 pages, dated February 2022, prepared by EnivroQuest, Inc.

END OF SECTION



SERVICES

HAZMAT Inspections

Remediation Design

Asbestos Management

Lead Management

Lead Risk Assessment

Industrial Hygiene

Indoor Air Quality

Mold Assessment

Environmental Site Assessments

Subsurface Investigation

Water Sampling

Asbestos Training

Lead Training

OSHA Training

OSHA Compliance

INSPECTION REPORT FOR ASBESTOS AND LEAD-BASED PAINT

NEW DIETARY KITCHEN SUB-BASEMENT, YOUNG BUILDING LEAHI HOSPITAL 3675 KILAUEA AVENUE HONOLULU, HAWAII 96816

EnviroQuest Project: 301511

February 2022

Prepared for:

Pacific Architects, Inc. 2020 South King Street Honolulu, Hawaii 96826

Prepared by:

EnviroQuest, Inc. 98-029 Hekaha Street, Suite 21 Aiea, Hawaii 96701 808.486.5881

David Leigh

David Leigh PM/CIH



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- A. REFERENCE PHOTOGRAPHS
- B. LABORATORY ANALYTICAL REPORTS



1 INTRODUCTION

A hazardous building material survey (HBMS) was conducted on February 24, 2022, at the Leahi Hospital, 3675 Kilauea Avenue, Honolulu, Hawaii.

The purpose of the activities under this project was to perform an inspection to identify asbestos-containing materials (ACMs) and lead-based paints (LBPs) that may be encountered and that would require special demolition, handling, safety, or other disposal requirements.

1.1 SITE LOCATION

The listed area was included in our inspection.

• Young Building, Sub-basement



2 ASBESTOS

Thirty-four samples were collected from suspect asbestos-containing materials.

2.1 METHODOLOGY

A visual inspection for suspect ACM and homogeneous areas (areas that have uniform color, texture, and appearance) was conducted. Suspect materials were divided into three Environmental Protection Agency (EPA) categories:

- Surfacing Materials (sprayed or troweled-on materials)
- Thermal Systems Insulations (materials generally applied to various mechanical systems)
- Miscellaneous Materials (any materials which do not fit in the above categories)

Sampling methodology generally followed the procedures presented in EPA 40 CFR 763 Asbestos and Hawaii Department of Health (HDOH), Hawaii Administrative Rules (HAR) Titles 11-501 Asbestos Requirements and 11-502 Asbestos Containing Materials in Schools.

2.2 RESULTS

Samples were submitted to Hawaii Analytical Laboratory, LLC, a National Voluntary Laboratory Accreditation Program (NVLAP) accredited laboratory. The samples were analyzed by polarized-light microscopy (PLM), following EPA Method 600/R-93-116, *Visual Area Estimation*. Hawaii Analytical Laboratory is also registered to provide asbestos laboratory services in Hawaii under HDOH 11-504 *Asbestos Abatement Certification Program*.

Based on the laboratory analytical report, asbestos was identified in 2 of the 34 samples. The National Emission Standard for Hazardous Air Pollutants (NESHAP), 40 CFR 61 Part M, defines ACM as those which contain greater than 1% asbestos. NESHAP also categorizes ACM as either being a friable material, a Category I non-friable material or a Category II non-friable material. Friable materials are defined as those that can be reduced to powder by hand pressure. Category I non-friable materials are the asphalt roofing materials, resilient floor covering, excluding linoleum, packings and gaskets. Category II non-friable materials are the cementitious materials such as stucco and asbestos cement board. In accordance with NESHAP requirements, samples consisting of distinct layers of materials were analyzed and reported separately by the laboratory. NESHAP also states that if asbestos is identified in amounts less than 10% the owner or operator of the building must elect to assume the amount to be greater than 1% and treat the material as asbestos-containing material or request verification of the amount by point counting. No samples were point counted for this report.

Refer to the accompanying appendices for laboratory analytical results and photographs.



3 LEAD

Twenty three paint film and bulk samples were collected from painted or coated materials.

3.1 METHODOLOGY

A visual inspection for painted or coated building surfaces was conducted. Sampling methodology generally followed the procedures presented in the U.S. Department of Housing and Urban Development's document *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing* and EPA 40 CFR 745 *Lead-Based Paint Poisoning Prevention in Certain Residential Structures.*

3.2 RESULTS

Samples were submitted to Hawaii Analytical Laboratory in Honolulu, Hawaii. The paint film samples were analyzed by NIOSH Method 7082 *Lead by Flame AAS* and the ceramic tiles were digested using EPA Method 3051 *Microwave Assisted Acid Digestion of Sediments, Sludge, Soils, and Oils* and then analyzed by EPA 7000Bm *Flame Atomic Absorption Spectrophotometry*. Hawaii Analytical Laboratory is accredited for lead analysis through successful participation in the American Industrial Hygiene Association's Environmental Lead Laboratory Accreditation Program.

Based on the laboratory analytical results, one of the 23 samples exceeded the EPA guidelines for lead in paint. EPA defines lead-based paint as paint or other surface coatings containing lead in equal to or in excess of 0.5% by weight. Lead at measurement below the EPA guidelines were also detected. These paints have a lead concentration of less than 0.5% by weight and are identified as lead-containing paint (LCP). The summary of lead paint is presented in Table 2.

Refer to the accompanying appendices for laboratory analytical results and photographs.



4 SUMMARY

4.1 ASBESTOS

The listed materials were identified as ACM.

Material	Location	Condition
Brown cove base with brown mastic	Housekeeping, wall base	Good

The material should be removed as part of the renovation work. All removal must be completed by a certified asbestos abatement contractor under controlled conditions in accordance with EPA and Hawaii Department of Health (HDOH) regulations. Work should also be monitored by an independent industrial hygiene professional.

4.2 LEAD

The listed LBP was identified.

Color	Location	Condition
Beige	Perimeter wood windows and frames	Intact

Various other paint/coating were also identified as LCP (see Table 2). Prior to the disturbance of LBP and LCP, the contractor's employees disturbing the painted material must be informed that it contains lead and must conduct all lead disturbance work in accordance with Occupational Safety and Health Administration (OSHA) 29 CFR 1926.62 *Lead*. If any untested paints are disturbed, they should be assumed to contain lead.

If lead paint debris is generated during any disturbance activity, a composite sample should be collected for *Toxicity Characteristic Leaching Procedure* (TCLP) lead analysis for waste disposal characterization. HDOH 11-261, *Hazardous Waste Management,* allows a maximum lead concentration of 5.0 mg/L. TCLP results exceeding this threshold requires disposal as hazardous waste. Note that painted metal components are exempt from TCLP testing if recycled.



5 LIMITATIONS

The information set forth is based solely on the agreed upon scope of services, on personal observation, laboratory data, and information provided by Pacific Architects, Inc.

Although this inspection provides information on the relative presence or absence of asbestoscontaining materials and lead-based paint, it should not be construed as a final statement that all hazardous materials have been identified.

Given the often obscure and elusive nature of hazardous materials, it is never possible to absolutely dismiss the possibility of additional hazardous materials. EnviroQuest, Inc. expressly disclaims any and all liability, representations, expressed or implied, contained in, or for omission from this report, or any other written or oral communication which might be interpreted as establishing the total extent of all liability present at the subject property.

Our services have been performed with usual thoroughness and competence of the consulting profession, in accordance with the standard of professional services at this time. No other warranty or representation, either expressed or implied is included or intended.

Any question regarding our work and this report, the presentation of the information, and the interpretation of the data are welcome and should be referred to the undersigned. EQI greatly appreciates this opportunity to assist you with your industrial hygiene needs. We look forward to working with you again in the future.



TABLE 1: ASBESTOS SAMPLING SUMMARY

Homogenous Material	ACM₁ (Y/N)	Location	Sample ID	Friable (Y/N)	Est ACM Qty (ft ²)	Condition ₂	Photo No.
			301511-01A				
			301511-02A				
Plaster	N	Interior partition walls	301511-03A	N		G	1, 2, 3
			301511-04A				
			301511-05A				
			301511-06A				
			301511-07A			0	4 5 0
Plaster	N	Interior ceiling	301511-08A	N		G	4, 5, 6
			301511-09A				
			301511-10A				
		Morgue, Women's locker tollet, laundry	301511-11A			0	7 0
Gray ceramic flooring system	N	room, shower/toilet room (between	301511-12A	N		G	7,8
		Women's locker and laundry	301511-13A				
			301511-14A			0	•
Red ceramic flooring system	N	Janitor's closet	301511-15A	N		G	9
			301511-16A				
	N		301511-1/A			0	10
Light gray ceramic wall system		Janitor's closet, wall	301511-18A	N		G	10
			301511-19A				
		Women's locker. Shower/toilet room	301511-20A			-	
Beige ceramic wall system	N	(between Women's locker and laundry)	301511-21A	N		D	11, 12
		(;))	301511-22A				
			301511-23A			0	
Off-white caulking	N	Door frame/wall seams	301511-24A	N		G	
			301511-25A				
Concrete material (red and green			301511-26A				
painted)	N	Concrete floor slab	301511-27A	N		G	13, 14
F			301511-28A				
	Y	Housekeeping (designated lounge	301511-29A				
Brown cove with brown mastic	(mastic)	area), wall base	301511-30A	N	100 lt	G	15, 16
	(301511-31A				
	• •		301511-32A				<i>.</i>
Gypsum board (blue painted)	N	Housekeeping, partition wall	301511-33A	N		G	17
			301511-34A				

1. ACM=>1% asbestos content

2. Good (G); Damaged (D) <10% distributed or 25% localized; Significant Damage (SD), >10% distributed or 25% localized



TABLE 2: LEAD PAINT SAMPLING SUMMARY

Paint Color	Int/Ext	LBP₁ (Y/N)	LCP2 (Y/N)	Paint Location	Sample ID	Condition _{3,4}	Photo Number
Off-white	Int	N	Y	Plaster walls	301511-01L	Intact	1, 2, 3
Blue	Int	N	N	Wood and metal wall base	301511-02L	Intact	
White	Int	N	N	Plaster ceiling	301511-03L	Intact	4, 5, 6
Gray	Int	Ν	Ν	Morgue, Women's locker toilet, laundry room, shower/toilet room (between Women's locker and laundry, ceramic flooring	301511-04L	Intact	7, 8
Red	Int	Ν	N	Janitor's closet, ceramic flooring	301511-05L	Intact	9
Light gray	Int	Ν	Y	Janitor's closet, wall	301511-06L	Intact	10
Beige	Int	Ν	Y	Shower/toilet room (between Women's locker and laundry), wall	301511-07L	Intact	11, 12
Gray	Int	Ν	Y	Housekeeping storage room #21, plaster wall	301511-08L	Fair	
Green and red	Int	Ν	Y	Women's locker and corridor, concrete floor	301511-09L	Poor	13, 14
Beige over green	Int	Ν	Y	Electrical metal conduit and panel	301511-10L	Intact	18
Beige	Int	Ν	Y	Perimeter plaster over concrete walls	301511-11L	Fair	19
Beige	Int	Y	Ν	Perimeter wood window and frame	301511-12L	Fair	20, 21, 22, 23, 24
Red	Int	Ν	N	Electrical fire alarm metal conduit	301511-13L	Intact	25
White	Int	Ν	Y	Concrete ceiling	301511-14L	Intact	26
Beige	Int	Ν	Y	Wood door and metal/wood frame	301511-15L	Fair	27, 28
Blue	Int	Ν	Ν	Housekeeping, gypsum wall	301511-16L	Intact	17
Blue	Int	Ν	Y	Housekeeping, plaster wall	301511-17L	Intact	29
Blue	Int	Ν	Ν	Housekeeping, wood door	301511-18L	Fair	31
Blue	Int	Ν	Y	Housekeeping, concrete wall and column	301511-19L	Intact	30
Blue	Int	Ν	Y	Housekeeping, electrical metal conduit	301511-20L	Intact	
Beige	Ext	N	Y	Concrete wall	301511-21L	Intact	
Green	Int	N	Y	Janitor's closet, plaster wall	301511-22L	Poor	32
Brown	Int	N	Y	Stair, brown metal door and frame	301511-23L	Intact	33

 1. LBP = >0.5% lead by weight

 2. LCP = >laboratory detection limit but <0.5%</td>

 3. Exterior: Intact – Entire surface is intact; Fair - $\leq 10ft^2$; Poor - >10 ft²

 4. Interior: Intact – Entire surface is intact; Fair - $\leq 2ft^2$ or $\leq 10\%$; Poor - >2 ft² or >10%









Photo 1: Corridor. Non-asbestos containing plaster wall; lead containing off-white paint on the plaster wall.



Photo 2: Morgue. Non-asbestos containing plaster wall; lead containing off-white paint on the plaster wall.



Photo 3: Corridor. Non-asbestos containing plaster wall; lead containing off-white paint on the plaster wall.



Photo 4: Corridor. Non-asbestos containing plaster ceiling; non-lead containing white paint on the plaster ceiling.



Photo 5: Corridor. Non-asbestos containing plaster ceiling; non-lead containing white paint on the plaster ceiling.



Photo 6: Women's locker. Non-asbestos containing plaster ceiling; non-lead containing white paint on the plaster ceiling.





Photo 7: Morgue. Non-asbestos and non-lead containing gray ceramic flooring.



Photo 8: Women's locker. Toilet. Non-asbestos and non-lead containing gray ceramic flooring.



Photo 9: Janitor's closet. Non-asbestos and non-lead containing red ceramic flooring.



Photo 10: Janitor's closet. Non-asbestos containing light gray ceramic wall tile system; lead containing light gray ceramic tile.



Photo 11: Women's locker. Shower/toilet room. Non-asbestos containing beige ceramic wall tile system; lead containing beige ceramic tile.



Photo 12: Shower/toilet room (in-between laundry and Women's locker). Non-asbestos containing beige ceramic wall tile system; lead containing beige ceramic tile.





Photo 13: Corridor. Non-asbestos containing concrete floor slab; lead containing red paint.



Photo 14: Women's locker. Non-asbestos containing concrete floor slab; lead containing green paint.



Photo 15: Housekeeping (lounge area). Cove base with asbestos containing brown mastic.



Photo 16: Housekeeping (lounge area). Cove base with asbestos containing brown mastic.



Photo 17: Housekeeping. Non-asbestos containing partition gypsum wall; non-lead containing blue paint.



Photo 18: Corridor. Lead containing beige paint on the electrical metal panel and conduit.





Photo 19: Lead containing beige paint on the perimeter walls.



Photo 20: Lead based beige paint on the perimeter window system.



Photo 21: Lead based beige paint on the perimeter window system.



Photo 22: Lead based beige paint on the perimeter window system.



Photo 23: Lead based beige paint on the perimeter window system.



Photo 24: Lead based beige paint on the perimeter window system.





Photo 25: Non-lead containing red paint on the fire alarm metal conduit.



Photo 26: Lead containing white paint on the concrete ceiling.



Photo 27: Lead containing beige paint on the door and door frame.



Photo 28: Lead containing beige paint on the door and door frame.



Photo 29: Housekeeping. Lead containing blue paint on the plaster wall.



Photo 30: Housekeeping. Lead containing blue paint on the perimeter concrete wall and column.





Photo 31: Non-lead containing blue paint on the wood door.



Photo 32: Janitor's closet. Lead containing green paint on the plaster wall.



Photo 33: Lead containing brown paint o







Hawaii Analytical Laboratory ANALYTICAL REPORT

Wednesday, March 2, 2022

EnviroQuest, Inc. 98-029 Hekaha Street, Suite 21 Aiea HI 96701
 Phone Number:
 (808)486-5881

 Facsimile:
 (808) 486-5889

 Email:
 eqi@enviroquestinc.com

Lab Job No:202201811Date Submitted:2/25/2022Your Project:301511, Leahi Hospital, Young Building, Sub Basement, 2/24/22

Bulk Asbestos Determination

Sample No.	Sample ID / Description	Asbestos Present?	Туре	%v/v	Other Fibrous	%v/v	Matrix	Date Analyzed
202214446	301511-01A		NONE DETECTED		None detected		Calcite + gypsum	2/25/2022
Layer	White base							
Comments								
202214446	301511-01A		NONE DETECTED		None detected		Cementitious	2/25/2022
Layer	White plaster							
Comments								
202214447	301511-02A		NONE DETECTED		None detected		Calcite + gypsum	2/25/2022
Layer	White base							
Comments								
202214447	301511-02A		NONE DETECTED		None detected		Cementitious	2/25/2022
Layer	White plaster							
Comments								
202214448	301511-03A		NONE DETECTED		None detected		Calcite + gypsum	2/28/2022
Layer	White base							
Comments								
202214448	301511-03A		NONE DETECTED		None detected		Cementitious	2/28/2022
Layer	White plaster							
Comments								

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Bulk Asbestos Determination

Sample No.	Sample ID / Description	Asbestos Present?	Туре	%v/v	Other Fibrous	%v/v	Matrix	Date Analyzed
202214449	301511-04A		NONE DETECTED		None detected		Calcite + gypsum	3/1/2022
Layer	White base							
Comments								
202214449	301511-04A		NONE DETECTED		None detected		Cementitious	3/1/2022
Layer	White plaster							
Comments								
202214450	301511-05A		NONE DETECTED		None detected		Cementitious	3/1/2022
Layer	White plaster							
Comments								
202214451	301511-06A		NONE DETECTED		None detected		Cementitious + paint	3/1/2022
Layer	<u>White plaster / paint</u>							
Comments								
202214452	301511-07A		NONE DETECTED		None detected		Cementitious + paint	3/1/2022
Layer	<u>White plaster / paint</u>							
Comments								
202214453	301511-08A		NONE DETECTED		None detected		Cementitious + paint	3/1/2022
Layer	<u>White plaster / paint</u>							
Comments								
202214454	301511-09A		NONE DETECTED		None detected		Cementitious + paint	3/1/2022
Layer	White plaster / paint							
Comments								
202214455	301511-10A		NONE DETECTED		None detected		Cementitious + paint	3/1/2022
<u>Layer</u>	<u>White plaster / paint</u>							
Comments								

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Bulk Asbestos Determination

Sample No.	Sample ID / Description	Asbestos Present?	Туре	%v/v	Other Fibrous	%v/v	Matrix	Date Analyzed
202214456	301511-11A		NONE DETECTED		None detected		Ceramic	3/1/2022
Layer	Gray ceramic tile							
Comments								
202214456	301511-11A		NONE DETECTED		None detected		Cementitious	3/1/2022
<u>Layer</u> Comments	<u>Gray mortar</u>							
202214457	301511-12A		NONE DETECTED		None detected		Ceramic	3/1/2022
Layer	Gray ceramic tile							
Comments								
202214457	301511-12A		NONE DETECTED		None detected		Cementitious	3/1/2022
Layer	<u>Gray mortar</u>							
Comments								
202214458	301511-13A		NONE DETECTED		None detected		Ceramic	3/1/2022
Layer	Gray ceramic tile							
Comments								
202214458	301511-13A		NONE DETECTED		None detected		Cementitious	3/1/2022
<u>Layer</u>	<u>Gray mortar</u>							
Comments								
202214459	301511-14A		NONE DETECTED		None detected		Cementitious	3/1/2022
Layer	Gray cementitious material							
Comments								
202214459	301511-14A		NONE DETECTED		None detected		Ceramic	3/1/2022
Layer	Red ceramic tile							
Comments								

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r

Bulk Asbestos Determination

Sample No.	Sample ID / Description	Asbestos Present?	Туре	%v/v	Other Fibrous	%v/v	Matrix	Date Analyzed
202214460	301511-15A		NONE DETECTED		None detected		Cementitious	3/1/2022
Layer	Gray cementitious material							
Comments								
202214460	301511-15A		NONE DETECTED		None detected		Ceramic	3/1/2022
Layer	Red ceramic tile							
Comments								
202214461	301511-16A		NONE DETECTED		None detected		Cementitious	3/1/2022
Layer	Gray cementitious material							
Comments								
202214461	301511-16A		NONE DETECTED		None detected		Ceramic	3/1/2022
Layer	Red ceramic tile							
Comments								
202214462	301511-17A		NONE DETECTED		None detected		Cementitious	3/1/2022
Layer	Gray cementitious material							
Comments								
202214462	301511-17A		NONE DETECTED		None detected		Ceramic + paint	3/1/2022
Layer	Light green ceramic tile / paint							
Comments								
202214463	301511-18A		NONE DETECTED		None detected		Cementitious	3/1/2022
Layer	Gray cementitious material							
Comments								
202214463	301511-18A		NONE DETECTED		None detected		Ceramic + paint	3/1/2022
<u>Layer</u>	Light green ceramic tile							
Comments								

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98-029 Hekaha Street, Suite 21 Aiea HI 96701	Email:	eqi@enviroquestinc.com

Bulk Asbestos Determination

Sample No.	Sample ID / Description	Asbestos Present?	Туре	%v/v	Other Fibrous	%v/v	Matrix	Date Analyzed
202214464	301511-19A		NONE DETECTED		None detected		Cementitious	3/1/2022
<u>Layer</u>	Gray cementitious material							
Comments								
202214464	301511-19A		NONE DETECTED		None detected		Ceramic + paint	3/1/2022
Layer	Light green ceramic tile							
Comments								
202214465	301511-20A		NONE DETECTED		None detected		Ceramic + paint	3/1/2022
Layer	Beige ceramic tile							
Comments								
202214465	301511-20A		NONE DETECTED		None detected		Cementitious	3/1/2022
Layer	<u>Gray mortar</u>							
Comments								
202214466	301511-21A		NONE DETECTED		None detected		Ceramic + paint	3/1/2022
Layer	Beige ceramic tile							
Comments								
202214466	301511-21A		NONE DETECTED		None detected		Cementitious	3/1/2022
Layer	<u>Gray mortar</u>							
Comments								
202214467	301511-22A		NONE DETECTED		None detected		Ceramic + paint	3/1/2022
Layer	Beige ceramic tile							
Comments								
202214467	301511-22A		NONE DETECTED		None detected		Cementitious	3/1/2022
Layer	<u>Gray mortar</u>							
Comments								

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Bulk Asbestos Determination

Sample No.	Sample ID / Description	Asbestos Present?	Туре	%v/v	Other Fibrous	%v/v	Matrix	Date Analyzed
202214468	301511-23A		NONE DETECTED		Cellulose (undulose)	2	Calcite + gypsum	3/1/2022
<u>Layer</u>	White mud compound like							
Comments								
202214469	301511-24A		NONE DETECTED		Cellulose (undulose)	2	Paint + calcite	3/1/2022
<u>Layer</u> Comments	<u>Off-white / red skim coat / paint</u>							
202214470	301511-25A		NONE DETECTED		Cellulose (undulose)	2	Calcite + gypsum	3/1/2022
<u>Layer</u> Comments	White mud compound like							
202214471	301511-26A		NONE DETECTED		None detected		Cementitious	3/1/2022
Layer	Red concrete							
Comments								
202214472	301511-27A		NONE DETECTED		None detected		Cementitious	3/1/2022
Layer	Red concrete							
Comments								
202214473	301511-28A		NONE DETECTED		None detected		Cementitious	3/1/2022
Layer	Red concrete							
Comments								
202214474	301511-29A		NONE DETECTED		Cellulose (undulose)	2	Binder + other	3/1/2022
Layer	<u>Brown / tan mastic</u>							
Comments								
202214474	301511-29A		NONE DETECTED		Cellulose (undulose)	2	Binder + other	3/1/2022
Layer	Brown cove base							
Comments								

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Bulk Asbestos Determination

Sample No.	Sample ID / Description	Asbestos Present?	Туре	%v/v	Other Fibrous	%v/v	Matrix	Date Analyzed
202214474	301511-29A		NONE DETECTED		Cellulose (undulose)	2	Calcite + other	3/1/2022
<u>Layer</u> Comments	White joint compound							
202214475	301511-30A		NONE DETECTED		Cellulose (undulose)	2	Binder + other	3/1/2022
<u>Layer</u> Comments	Brown cove base							
202214475	301511-30A	Yes	Chrysotile	2	None detected		Calcite +	2/28/2022
Layer	Brown mastic						vinyl	
Comments								
202214476	301511-31A		NONE DETECTED		Cellulose (undulose)	2	Binder + other	3/1/2022
Layer	Brown cove base							
Comments								
202214476	301511-31A	Yes	Chrysotile	2	None detected		Calcite +	2/28/2022
<u>Layer</u>	Brown mastic						vinyi	
Comments								
202214477	301511-32A		NONE DETECTED		Cellulose (undulose) +	15	Gypsum + paint + mica	3/1/2022
<u>Layer</u>	Off-white paint / white drywall				fibrous glass (amorphous)			
Comments								
202214478	301511-33A		NONE DETECTED		Cellulose (undulose) +	15	Gypsum + mica	3/1/2022
<u>Layer</u>	White drywall				fibrous glass (amorphous)			
Comments								
202214478	301511-33A		NONE DETECTED		Cellulose (undulose)	2	Calcite + paint	3/1/2022
<u>Layer</u>	<u>White joint compound / blue paint</u> (limited)							
Comments								

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Bulk Asbestos Determination

Sample No.	Sample ID / Description	Asbestos Present?	Туре	%v/v	Other Fibrous	%v/v	Matrix	Date Analyzed
202214479	301511-34A		NONE DETECTED		Cellulose (undulose) +	15	Gypsum	3/1/2022
<u>Layer</u>	White drywall				fibrous glass (amorphous)			
Comments								
202214479	301511-34A		NONE DETECTED		Cellulose (undulose)	2	Calcite + paint	3/1/2022
<u>Layer</u>	<u>White joint compound / blue paint</u> (limited)							
Comments								

General Comments

The bulk sample[s] analysis subject of this analytical report were conducted in general accordance with the procedures outlined in the United States Environmental Protection Agency's "Interim Method for the Determination of Asbestos in Bulk Insulation Samples" (EPA-600/M4-82-020, Dec. 1982) and / or "Method for Determination of Asbestos in bulk Building Materials" (EPA-600/R-93-116, July 1993). The analysis of each bulk sample relates only to the material examined, and may or may not represent the overall composition of its original source. Floor tile and other resinously bound materials, when analyzed by the EPA methods referenced above may yield false negative results because of limitations in separating closely bound fibers and in detecting fibers of small length and diameter. Alternative methods of identification, including Transmission Electron Microscopy (TEM) may or may not be applicable. We utilize calibrated visual area estimation on a routine basis and do not conduct point counting unless specifically requested to do so. Estimated error for the visual determinations presented are 75% relative (1 to 2%), 50% relative (3 to 5%); 25% relative (6 to 25%) and 20% (>26% v/v). We will not separate layers which in our opinion are not readily discernable. This report must not be used by the client to claim product certification, approval or endorsement by NVLAP, NIST or any agency of Federal Governement. Unless otherwise indicated, the sample condition at the time of receipt was acceptable.

Results and Symbols Definitions

> This testing result is greater than the numerical value listed.

< This testing result is less than the numerical value listed.

None Detected = asbestos was not observed in the sample. If trace amount of asbestos was detected below our quantifiable limits of 1.0%, <1% (trace) would be indicated and the asbestos type listed. Point counting, where applicable, are recommended to improve accuracy.

Eva Skogsberg Laboratory Manager

ound Time: $(-12 \text{ Hs}$ $(24 \text{ Hs}$ $(48 \text{ Hs}$ $(326ys)$ (50 Days) Project No.: TICLP Lead Image: Ima	ation:
е eam 20:214 20:214 20:214 20:214 20:214 20:214 20:214 20:214 20:214 20:214	2124122

-<12 Hrs 24 Hrs 4 Micro ID (spore) Micro ID	Image: Service of the service of t	Image: Standing of the standi	livered to Lab By:	mpled By:	Ē	17		5 120		10-	3 Cal	0	1 3世代 03-	Sample #	TCLP Lead TCLP RCRA 8	Turnaround Time: Analysis:	Location:	Project Name:
	8 Hrs 3 Days 5 Days Sampling Media Bulk Bulk Bulk Soil Swab Component Substrate Component Substrate New Sold Ant Substrate New Sold Condult:	MISCELLANEOUS BU Page: 2 Date: Date: Date: Project No.: Sampling Media: Project No.: Bulk Bulk Bulk Bulk Bulk Bulk Bulk Bulk Bulk Color Swab Water Component Substrate Component Substrate Conduit- 20 Andrit- 20 Analyzed By/Date/Time Analyzed By Pate Analyzed 20	Received By/Date/Time	Relinguished Bullowski	the chart	red FA meta	pery per per	In permento	har a charter	heiplan elect n	given connet Stop	1 WY BALLON IN	alay alector it	Building Int Fir. Room	Micro ID (spore)	□<12 Hrs □24 Hrs □4		11

1.2

Project Name:		*	MISCELLANE	DUS BULK DATA SH
Location:		1	Page: Date:	4 26
Turnaround Time: Analysis:	□<12 Hrs □24 Hrs	48 Hrs 3 Days 5 Days	Project No.:	
TCLP Lead	Micro ID (spore)	Sampling Media	a: Tape	be
Sample #	Building Int/ FIr. R		water	
1 20101111	EXT	com component Substrate	Color % o	ream Area / Vol Res
10101-12	womens locker, 1	Derge week doior & ontal of T		96-9116
2 164				164674466
3	Mar Mar Ins	blue dix will.		202214495
1115		110 Dastron		
4 12L				96777202
		blue wind dow		202210497
5 100				1022201
ο) =		DIM CONVA LAIL / Colum	7	302214498
7.07	11	blue metal state in the		34 10 1 100
マエフ		1 SUCA SOVA	- HI -	GRUDIANA
amoled D	perp	esterior conorte curi		
cultured by:	Relinquished By/Date/Time	Relinquished By/Date/Time		202214200
elivered to Lab By:	Received Bullostan		Analy	zed by
		Received By/Date/Time	Date	Analyzed

3 Days 5 Days Sampling Media: Bulk Tape Soil Water Component Substrate At At H & f. f. Substrate At A



Hawaii Analytical Laboratory ANALYTICAL REPORT

Wednesday, March 2, 2022

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 Phone Number:
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 (808) 486-5889

 Email:
 eqi@enviroquestinc.com

Lab Job No:202201812Date Submitted:2/25/2022Your Project:301511, Leahi Hospital, Young Building. Sub Basement, 2/24/22

		Total Lead (paint chips)			
Sample No.	Sample ID / Description	NIOSH Method: 7082m LEAD by FAAS	Results	Units	Date Analyzed
202214480 Comments	301511-01L		0.13	wt %	2/28/2022
202214481 Comments	301511-02L		< 0.004	wt %	2/28/2022
202214482 Comments	301511-03L		< 0.004	wt %	2/28/2022
202214487 Comments	301511-08L		0.043	wt %	3/1/2022
202214489 Comments	301511-10L		0.05	wt %	3/1/2022
202214490 Comments	301511-11L		0.38	wt %	3/1/2022
202214491 Comments	301511-12L		0.84	wt %	3/1/2022
202214492 Comments	301511-13L		< 0.004	wt %	3/1/2022
202214493 Comments	301511-14L		0.18	wt %	3/1/2022

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98-029 Hekaha Street, Suite 21	Facsimile:	(808) 486-5889
Aiea HI 96701	Email:	eqi@enviroquestinc.com

		Total Lead (paint chips)			
Sample No.	Sample ID / Deparinting	NIOSH Method: 7082m LEAD by FAAS	Posults	Unito	Date
Sample No.	Sample ID / Description		Results	Units	Allalyzeu
202214494 Comments	301511-15L		0.031	wt %	3/1/2022
202214495 Comments	301511-16L		< 0.004	wt %	3/1/2022
202214496 Comments	301511-17L		0.057	wt %	3/1/2022
202214497 Comments	301511-18L		< 0.004	wt %	3/1/2022
202214498 Comments	301511-19L		0.1	wt %	3/1/2022
202214499 Comments	301511-20L		0.081	wt %	3/1/2022
202214500 Comments	301511-21L		0.011	wt %	3/1/2022
202214501 Comments	301511-22L		0.3	wt %	3/1/2022
202214502 Comments	301511-23L		0.042	wt %	3/1/2022

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Aiea HI 96701	Email:	eqi@enviroquestinc.com

Lab Job No:202201812Date Submitted:2/25/2022Your Project:301511, Leahi Hospital, Young Building. Sub Basement, 2/24/22

	Total Recoverable Lead #								
	Ormala ID (Decembration	EPA Method: 3051m / 7000Bm	Desults	11	Date				
Sample No.	Sample ID / Description		Results	Units	Analyzeu				
202214483 Comments	301511-04L		< 0.004	wt %	2/28/2022				
202214484 Comments	301511-05L		< 0.004	wt %	3/1/2022				
202214485 Comments	301511-06L		0.0049	wt %	3/1/2022				
202214486 Comments	301511-07L		0.025	wt %	3/1/2022				
202214488 Comments	301511-09L		0.0049	wt %	3/1/2022				

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EnviroQuest, Inc. 98-029 Hekaha Street, Suite 21 Aiea HI 96701

Lab Job No:202201812Date Submitted:2/25/2022Your Project:301511, Leahi Hospital, Young Building. Sub Basement, 2/24/22

All Quality Control data are acceptable unless otherwise noted. MRL for lead air is 5ug. MRL for lead wipe is 10ug. MRL for lead paint or soil is 40 mg/kg for a 0.25g sample.

General Comments

The sample[s] analysis subject of this analytical report were conducted in general accordance with the procedures associated with the "analytical method" referenced above. Modifications to this methodology may have been made based upon the analyst's professional judgment and / or sample matrix effects encountered. The analysis of sample relates only to the sample analyzed, and may or may not be representative of the original source of the material submitted for our analysis. All analysts participate in interlaboratory quality control testing to continuously document profiency. This report is not to be duplicated except in full without the expressed written permission of Hawaii Analytical Laboratory. This report should not be construed as an endorsement for a product or a service by the AIHA LAP, LLC or any affiliated organizations. Sample and associated sampling / collection data is reported as provided by client. TWA values have been calculated based on information supplied by the client that the laboratory has not independently verified. Results have not been corrected for blank determinations unless noted in remarks. Unless otherwise indicated the sample condition at the time of receipt was acceptable.

Results and Symbols Definitions

> This testing result is greater than the numerical value listed.

< This testing result is less than the numerical value listed.

= Analytical methods marked with an "#" are not within our AIHA LAP, LLC Scope of Accreditation.

MRL = Method Reporting Limit.

Eva Skogsberg Laboratory Manager

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3615 Harding Avenue, Ste. 308, Honolulu, HI 96816 - Telephone: (808) 735-0422 - Fax: (808) 735-0047

Project Name: Leahi HOSpital Young Building Page: 1044 Location: Sub-Daxement Project No.: 2/24/22 Jotation: Project No.: 301 Stj Turnaround Time: C12 Hrs 24 Hrs 48 Hrs Gabays Other: Analysis: Building Micro ID (spore) Building Media: Wipe TGLP RCRA 8 Internet Project No.: Sampling Media: Sampling Media: Sample # Building Internet Project No.: Sampling Media: Sample # Building Internet Project No.: Sampling Media: 1 201 SII-OIL 655 whilf? Plaster wall 20221448 2 02L blue wild and meta wall base 20221448 3 07L while? plaster? Color 21448 4 04L Gradmic ETT Convirgu N. 20221448 5 03L Gal ceramic ETC. Janitor 20221448 6 06L It gray ceramic wall wall base 20221448 7 0NL beige ceramic wall wall base 20221448 8 06L It gray ceramic wall w	S EnviroQuest		20220181 MISCELLANEOUS BULK DATA SHEET
Source of the second	Project Name:	eahi Hospital, Young Building Sub-Dasement	Page: $l \notin 4$ Date: $2/24/22$ Project No.: 20 by
Sample # Building Int/ Ext Fir. Room Component Substrate Color % of Waste Stream Area / Vol Result 1 JOISII-OIL 055 while plaster while 20221448 2021448 2 02L 5 We would and metal wall base. 20221448 3 07L while plaster while 20221448 4 04L 0100000000000000000000000000000000000	Turnaround Time: Analysis: TCLP Lead TCLP RCRA	□<12 Hrs □24 Hrs □48 Hrs □3 Days □5 Sampling Micro ID (spore) B □ □ Soil □ Swab	Days Other:
1 201511-01L 055 white plaster will 202214481 2 02L 51We would and metal wall base. 20221448. 3 07L white plaster ceiling. 20221448. 4 04L 01AY ceramic FT (morgw). 20221448. 5 05L 6 06L 1 6 06L 1 20221448. 7 0AL 6 06L 1 8 06L 1 20221448. 7 0AL 0146. 20221448. 8 06L 1 20221448. 6 06L 1 20221448. 7 0AL 50221448. 8 06L 1 20221448. 7 0AL 50221448. 3ampled Byt Ralinguished/Byt/DaterTime. Ralinguished Byt/DaterTime. Ralinguished/Byt/DaterTime. Ralinguished Byt/DaterTime. Analyzed Byt	Sample #	Building Int/ Ext Flr. Room Component Sub	bstrate Color % of Waste Area / Vol Result
2 02L blue wold and metal wall base. 20221448. 3 07L Unic Palmt plaster ceiling. 20221448. 4 04L 04L 20221448. 5 05L 5 05L 20221448. 6 06L 1 20221448. 1 7 0NL beige ceramic FT. (Janitor) 20221448. 8 06L 1 5.0221448. 6 06L 1 20221448. 7 0NL beige ceramic wall wall till r/r 20221448. 8 06L 1 20221448. 7 0NL beige ceramic wall till r/r 20221448. Sector and ceramic wall till r/r Sector and ceramic wall till regray ceramiceramic wall till regray c	1 301511-01L	oss white plaster wall	202214480
3 07L While path plaster ceiling 20221448 4 04L J My ceramic FT (murgu). 20221448 5 05L sed ceramic FT. (Janitar) 20221448 6 06L 1t gray ceramic will life rr 7 0 AL Delse ceramic will life rr 20221448 Sampled By/ Relinquished By/Date/Time Relinquished By/Date/Time Relinquished By/Date/Time	2 026	blue wood and metal wall base.	202214481
4 04L g (AY ceramic FT c murgu). 20::21448 5 05L 5 ed ceramic FT. (Janitur) 20::21448 6 06L 1t gray ceramic unit fill rr 20::21448 7 0NL beige (eramic wall fill rr 20::21448 Sampled By/ Relinquished By/Date/Time	3 074	while paint plaster ceiling.	202214482
5 05L Sed ceramic FT. (Janitar) 20221448 6 06L It gray ceramic wall till rr 20221448 7 0NL beige ceramic wall till rr 20221448 ampled By: Relinquished By/Date/Time Relinquished By/Date/Time Relinquished By/Date/Time	4 044	gray ceramic FT (morgue).	202214483
6 06L It gray ceramil well fill 11 7 0N beige (eramil well fill women's toylef · · · · · · · · · · · · · · · · · · ·	5 054	sed ceramil FT. (Janitor)	20:214484
7 0N beige (eramil wall fill, women'st offer :0:21448 iampled By: Relinquished/By/Date/Time Relinquished/By/Date/Time Analyzed By	° 06L	It gray ceramil wall till 11	202214485
Sampled By: Relinquished By/Date/Time Relinquished By/Date/Time Analyzed By	7 ONL	beise ceramic wall till women's to	lef · 202214486
Pelivered to Lab By: Peceived By/Date/Time Received By/Date/Time Date Analyzed 125/12 10/35 AM 02-14911P928159PAIN Date Analyzed	ampled By: AWA/A Pelivered to Lab By:	Relinquished By/Date/Time Received By/Date/Time 2.125/12 10/35 AM Received By/Date/Time 2.125/12 10/35 AM	Analyzed By Analyzed By Date Analyzed Date Analyzed

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Pro	oject Name:			//				P	age:	2014	
Loc	cation:							Project	No.:	/t	
Turi Ana	naround Time: Ilysis: TCLP Lead TCLP RCRA 8 Total Lead		s □2 Micro ID (s	4 Hrs	☐48 Hr	s 🛛 3 Days	☐5 Days Sampling Media: ☐Bulk ☐Ta ☐Soil ☐Va ☐Swab ☐W	Other: ape acuum 'ater			
	Sample #	Building	Int/ Ext	Flr.	Room	Component	Substrate	Color	% of Waste Stream	Area / Vol	Resul
1	30-112105	310	y plas	ter	uril.				2	02214	487
2	oay	e l	en co	nort	t Sloor	i o MPA 's	lucker.		2	202214	488
3	102-	h	egp/pa	ne	ect metr	t panel/ co	ndult.		2	202214	489
4		b	e150 0	elim	eter con	aute wall.			2	02214	490
5	126-		bergi	1 eti	perim	et and us	Now any Fr	ame.	2	202214	491
6	136		red	FA	metal	conduit.			2	202214	492
7	141		white	(encrit c	PILINC			2	202214	493
ampl	led By:		Relinquished B	y/Date/Ti	me	Relinquish	ed By/Date/Time		Analyzed By		
elive	red to Lab By:		Received By/D	ate/Time		Received E	By/Date/Time		Date Analyze	d	

Pro	piect Name:				11			P	ana: 3 (14	
					/				age	v (
LU	cation.			4 Ura					NO.:		
Ana	Iysis: TCLP Lead TCLP RCRA 8		Micro ID (s	pore)	40 r	ISS Days	5 Days Sampling Media: BulkT SoilV SwabV	ape 'acuum Vater	□Wipe □		
	Sample #	Building	Int/ Ext	Flr.	Room	Component	Substrate	Color	% of Waste Stream	Area / Vol	Result
1	301511-156	WOM	nsluc	ker	, beise	would001 @	orefald 7-		2 (122144	194
2	162	140	use keep	115	blue	2 dir unil	•		20	12144	95
3	172		/(blue	plaster a d			30	22144	96
4	13L		10		b	we would door			30	22144	97
5	laL		((-	blue convet	call / colum	n,	30	22144	98
6	2dL-		(· /	· /	olue metal e	lect cond	ut.	20	22144	99
7	21			bei	re ext	ender concret	1 Charl		21)::21/F	100
Samp	ed By:	F	Relinquished B	y/Date/Tir	me	Relinquishe	d By/Date/Time		Analyzed By	/ 6 / 1 1 1 1	100
Delive	red to Lab By:		Received By/D	ate/Time		Received B	y/Date/Time		Date Analyze	d	

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-								MICOLLE	ANECCOBE	C A	UNEL
Pr	oject Name:			1	1			P	age: 40	\$4	
Lc	ocation:							L Project	No.:		
u	rnaround Time:	□<12 Hrs	s 🗌 2	4 Hrs	□48 Hr	rs 🛛 3 Days	□5 Days	Other:			
Ana	alysis: TCLP Lead TCLP RCRA 8 Total Lead		Micro ID (spore)		[ampling Media Bulk Soil Swab	: Fape /acuum Vater	 □		
	Sample #	Building	Int/ Ext	Flr.	Room	Component	Substrate	Color	% of Waste Stream	Area / Vol	Resul
1	301511-222,	110	on pla	ster	wait	Janitors			2():214	501
0	34	bro)un or	retat	dour	and Frame	(stairs)	2(22145	92
	-										
	-								1		
	-]		
								•			
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DIVISION 13 - SPECIAL CONSTRUCTION

SECTION 13281 - ASBESTOS ABATEMENT

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

A. In performing this project, all possible safeguards, precautions and protective measures shall be utilized to prevent exposure of any individual to asbestos particulates.

1.02 DESCRIPTION OF WORK

- A. Furnish all labor, materials, equipment, and services, necessary to carry out the safe removal and disposal of asbestos-containing material in compliance with these specifications, EPA, OSHA, State of Hawaii regulations, and any other applicable Federal and State regulations. Whenever there is a conflict or overlap of the above references, the most stringent shall apply. The asbestos work at the Leahi Hospital shall generally include:
 - 1. <u>Young Building, Sub-Basement</u>: Removal and disposal of cove base and associated mastic located in the housekeeping wing as identified in the Inspection Report and/or Project Drawings.
 - 2. All work is to be completed when project areas are vacant
 - 3. Contractor to coordinate all work with the Architect and/or State, General Contractor and the Qualified Consultant. Contractor is responsible to satisfy himself as to the total extent of all work, including to but not limited to the quantity, location, thickness, layers, accessibility, etc. of all material prior to commencement of any work.
- B. In general, the principal items of the asbestos removal work shall be as follows:
 - 1. Worker Protection
 - 2. Decontamination Enclosure System
 - 3. Preparation of Work Area
 - 4. Removal of asbestos-containing materials
 - 5. Removal of protective sheeting
 - 6. Disposal

- C. Cleaning shall include areas within and immediately around the work area affected by the abatement work and all areas contaminated by the Contractor's work.
- D. The asbestos abatement work shall include removal of all asbestoscontaining materials within the work area as specified herein and noted on the drawing.
- E. Contractor shall comply with all regulations pertaining to asbestos removal. If there is a conflict with the specifications, the more stringent requirement shall apply.

1.03 COORDINATION WITH OTHER SECTIONS

A. Prior to commencement of work, an annotated description of all existing damaged and missing items shall be submitted to the Architect and/or State. It will be the Contractor's responsibility to repair and/or replace to the Architect and/or State's satisfaction all items identified as damaged and/or missing that cannot be proven to have been in this condition prior to the commencement of this project.

1.04 SUBMITTALS PRIOR TO WORK

- A. Final payment will not be made until copies of all submittals have been furnished to and accepted by the Architect and/or State. Submit one electronic copy of the submittal package, no later than 10 consecutive working days from award notice, which will include the items listed below.
- B. <u>Notices</u>: As early as possible but prior to commencement of work, as regulated by each agency and before commencement of any on-site project activity, send a courtesy 10-day notice in accordance with 40 CFR Part 61.145 of Subpart M, of the proposed asbestos abatement work with copies to the State and to the following agencies:
 - 1. The Administrator of the Environmental Protection Agency (EPA) Regional Office having jurisdiction over the project.
 - 2. State of Hawaii, Department of Health, "Notification of Demolition and Renovation" form. Send to: State of Department of Health, Indoor and Radiological Health Branch, 99-945 Halawa Valley Street, Aiea, Hawaii 96701.
- C. <u>Permits & Licenses</u>: Copies of all permits, licenses (C-19) and arrangements for removal, transportation and disposal of asbestos-containing materials and waste water.
- D. <u>Insurance</u>: Proof of insurance for Workman's Compensation and General Liability which covers asbestos, lead, and pollution.

- E. <u>Manufacturer's Data</u>: Copies of manufacturer's specifications, installation instructions and field test procedures for each material and all equipment related to asbestos handling and abatement and include other data as may be required to show compliance with these specifications and proposed uses.
- F. <u>Samples</u>: Samples of the following items for approval prior to ordering materials:
 - 1. <u>Surfactant</u>: copies of manufacturer's literature including all laboratory data, mixing and application instructions.
 - 2. <u>Tapes and Adhesives</u>: copies of manufacturer's literature including all laboratory data.
 - 3. <u>Warning Labels and Signs</u>: copies of examples of all required signage.
 - 4. <u>Protective Clothing</u>: copies of manufacturer's literature on all protective clothing and one sample of each item which will be returned to the Contractor.
 - 5. <u>Respirator Equipment</u>: copies of manufacturer's literature on all respirator equipment and one sample of each item which will be returned to the Contractor.
 - 6. <u>Asbestos Encapsulant(s)</u>: copies of manufacturer's literature including all laboratory data, application instructions.
- G. <u>Work Plan</u>: Submit a project Work Plan for the asbestos-containing material disturbance work written and signed by the Contractor's State of Hawaii, Department of Health certified Asbestos Project Designer. The Contractor shall also provide detailed information concerning:
 - 1. Preparation of the work area.
 - 2. Personal protective equipment including respiratory protection and protective clothing.
 - 3. Decontamination procedures for the personnel who may be exposed to asbestos.
 - 4. Handling and disposal methods and procedures to be used.
 - 5. Required air monitoring procedures and sampling protocols.
 - 6. Procedures for final cleanup.
 - 7. A sequence of work and performance schedule in coordination with other trades.

- 8. Emergency procedures.
- H. <u>Shop Drawings</u>: Submit shop drawings for the following items as a minimum:
 - 1. Descriptions of any equipment to be employed not discussed in this section.
 - 2. Security provisions, if any, in and around the project area.
 - 3. Outline of work procedures to be employed.
 - 4. Location of construction barriers.
 - 5. Location of waste dumpster.
 - 6. Staging of the work, the sequence.
 - 7. Entrances and exits to the work place
 - 8. Location and construction of worker decontamination units.
- Ι. Documentation for Instruction: Submit documentation that each and every individual, including foremen, supervisors, and other company personnel or agents and any other individual who may be exposed to airborne asbestos fibers, who may be responsible for any aspect of abatement activities, or who is allowed or permitted to enter areas where such exposure may occur has currently attended and passed the Abatement Worker and/or Abatement Contractor/Supervisor course whichever is relevant to that workers responsibilities as specified in 40 CFR Part 763, "Asbestos Materials in Schools". These courses shall be EPA-approved or approved by a State Accreditation Program in the most current listing of the Federal Register. No worker shall be allowed on site if they are found to have either an expired accreditation certificate or does not comply with the requirements set forth in 40 CFR Part 763 on training. All workers shall be certified for asbestos related work in accordance with Department of Health, Chapter 11-504, Hawaii Administrative Rules, Asbestos Abatement Certification Program. The Contractor shall be responsible for keeping the documentation up to date and subsequent submittals to the Architect and/or State before any additional employee or individual, not currently on the list, is allowed within the project site. Submit completed and signed "Employee Acknowledgment of Instruction and Release" forms. A sample "Employee Acknowledgment of Instruction and Release" form is provided at the end of this section.
- J. <u>Documentation from Physician</u>: Submit documentation from a physician that all employees or agents who may be exposed to airborne asbestos have been provided with an opportunity to be medically monitored to

determine whether they are physically capable of working while wearing the respirator required without suffering adverse health effects. In addition, document that all individuals permitted within the project site have received medical monitoring or had such monitoring made available to them as required in OSHA 29 CFR 1926.1101. The Contractor must be aware of and provide information to the examining physician about unusual conditions in the workplace environment (e.g. high temperatures, humidity, chemical contaminants) that may impact on the employee's ability to perform work activities. The Contractor shall keep and make available to all affected individuals a record and the results of such examinations.

- K. <u>HEPA Vacuums</u>: Submit manufacturer's certification that vacuums conform to ANSI Z9.2-79, Fundamentals Governing the Design and Operation of Local Exhaust Systems as applicable to this project.
- L. <u>Rental Equipment</u>: When rental equipment is to be used in abatement areas or to transport asbestos contaminated waste, a written notification concerning intended use of the rental equipment must be provided to the rental agency with a copy submitted to the Architect and/or State.
- M. <u>Emergency Planning Procedures</u>: Contractor shall submit for review and acceptance by the Architect and/or State, an emergency plan prior to abatement initiation.
 - 1. Emergency procedures shall be in written form and prominently posted adjacent to the Worker Protection Notices specified hereinafter. Everyone prior to entering the work area must read and sign these procedures to acknowledge receipt of emergency exits and emergency procedures.
 - 2. Emergency planning shall include notification of police, fire, and emergency medical personnel of planned abatement activities work schedule, and layout of the work area, particularly barriers that may affect response capabilities.
 - 3. Emergency planning shall include considerations of fire, explosion, toxic atmospheres, electrical hazards, slips, trips and falls, and heat related injury. Written procedures shall be developed and employee training procedures shall be provided in Contractors plan.

1.05 SUBMITTAL AFTER WORK IS COMPLETED

A. At the completion of the work, a final report shall be prepared by the Contractor for acceptance by the Architect and/or State. One electronic copy of the report shall be submitted and shall include the items listed below.

- 1. The project name, Abatement Contractor, Abatement Contractor license number, notification form to the Hawaii Department of Health and EPA, work duration, material removed, respiratory protection employed, asbestos waste manifest, total quantity of waste, employee exposure air sample results, and results of the most current PAT round results for the laboratory or laboratories conducting the employee exposure air sample analysis.
- 2. Certification of the Abatement Contractor's employees.
- 3. <u>Visitor/Worker Entry Log</u>: The daily log of all personnel including the Contractor's employees and agents who enter the work area while asbestos abatement operations are in progress, until final clearance is received that the work area is asbestos free. The log shall contain the listed information as a minimum and shall be certified by the Qualified Consultant.
 - a. Date of visit/worker entry
 - b. Visitor/Worker's name, employer, business address and telephone number
 - c. Time of entry and exit from work area
 - d. Purpose of visit
 - e. Type of protective clothing and respirator worn
 - f. Certificate of release signed and filed with the contractor
- 4. A statement signed by the Asbestos Abatement Contractor that all asbestos abatement and disposal was completed in compliance with this specification, Federal and State regulations, and the approved Work Plan.

1.06 PRODUCT HANDLING

A. <u>Delivery and Storage of Materials</u>: Deliver materials to the site in original packages, containers or bags fully identified with manufacturer's name, brand and lot number. Store materials in a dry well-ventilated space, under cover, off the ground and away from surfaces subject to dampness or condensation as approved by the Architect and/or State. Material that becomes contaminated with asbestos shall be disposed of in accordance with applicable regulations. Replacement materials shall be stored outside the contaminated work area until abatement is completed.

1.07 PROTECTION

A. Site Security: The work area is to be restricted only to authorized, trained, and protected personnel. These may include the Contractor's

employees, employee's of subcontractors, the Architect and/or State, State and local inspectors and any other designated individuals. A list of authorized personnel shall be established prior to job start.

- 1. Entry to the work area by unauthorized individuals shall not be permitted without the express approval of the Architect and/or State and any such entry shall be reported immediately to the Architect and/or State by the Contractor.
- 2. A Visitor/Worker Entry Log shall be maintained.
- 3. The Contractor shall have control, subject to approval of the Architect and/or State, of security in the work area and in proximity of Contractor's equipment and materials.
- B. <u>Site Protection and Safety</u>: As a minimum follow the requirements of EPA, HIOSH (State of Hawaii), OSHA and NIOSH. Take all necessary precaution to ensure there is no asbestos contamination to those areas not included in the work schedule.
- C. <u>Protective Covering</u>: The Contractor shall provide and install protective covering on an "as required" or "upon request" by the Qualified Consultant. Protective covering shall be clean plastic sheets minimum thickness of 6-mil.
- D. <u>Safeguarding of Property</u>: The Contractor shall take whatever steps necessary to safeguard his work and also the property of the State and other individuals in the vicinity of his work area during the execution of this Contract. He shall be responsible for and make good on any and all damages by his employees negligence. Do not load structure with weight that will endanger the structure.
- E. <u>Completed Work</u>: The Contractor shall provide all necessary protection for surfaces encapsulated under this section.

1.08 ABBREVIATIONS

- A. <u>ANSI</u>: American National Standards Institute, Inc.
- B. <u>CFR</u>: Code of Federal Regulations
- C. <u>HIOSH</u>: Division of Occupational Safety and Health, Department of Labor and Industrial Relations, State of Hawaii
- D. <u>EPA</u>: U.S. Environmental Protection Agency
- E. <u>NESHAP</u>: National Emission Standards for Hazardous Air pollutants
- F. <u>NIOSH</u>: National Institute for Occupation Safety and Health

G. OSHA: Occupational Safety and Health Administration

1.09 GENERAL REQUIREMENTS

- A. Contractor shall examine and have at all times in his possession at his office (one copy) and in view at each job site office (one copy) a current issue of the following publications:
 - 1. State of Hawaii, Department of Health, Title 11, Chapter 501-1, Asbestos Requirements
 - 2. State of Hawaii, Department of Health, Title 11, Chapter 501-2, Asbestos Containing Materials in Schools
 - 3. State of Hawaii, Department of Health, Title 11, Chapter 501-4, Asbestos Abatement Certification Program
 - 4. Title 29, Code of Federal Regulations, Section 1910.134 -General Industry Standard for Respiratory Protection, Occupational Safety and Health Administration (OSHA), U.S. Department of Labor
 - 5. Title 29, Code of Federal Regulations, Section 1926.1101 -Asbestos, Construction Industry, Occupational Safety and Health Administration (OSHA), U.S. Department of Labor
 - 6. Title 29, Code of Federal Regulations, Section 1910.2 Access to Employee Exposure and Medical Records, Occupational Safety and Health Administration (OSHA), U.S. Department of Labor
 - 7. Title 29, Code of Federal Regulations, Section 1910.1200 -Hazard Communication, Occupational Safety and Health Administration (OSHA), U.S. Department of Labor
 - 8. Title 40, Code of Federal Regulations, Part 61, Subparts A and M (Revised Subpart B), National Emission of Standards for Hazardous Air Pollutants, U.S. Environmental Protection Agency (EPA)
 - 9. Guidance for Controlling Asbestos-Containing Materials in Buildings, EPA 560/5-85-024 (Purple Book), U.S. Environmental Protection Agency (EPA)
 - 10. Title 34, Code of Federal Regulations, Part 231, Appendix C, Procedures For Containing and Removing Building Materials Containing Asbestos, U.S. Environmental Protection Agency (EPA)
 - 11. Title 29, Code of Federal Regulations, Section 1910.145 Specifications for Accident Prevention, Signs and Tags,

Occupational Safety and Health Administration (OSHA), U.S. Department of Labor

- 12. ANSI Z88.2-80 Practice for Respiratory Protection
- 13. EPA, Final Response to the Asbestos Hazard Emergency Response Act (AHERA), 40 CFR, Part 763, Subpart E
- B. The Contractor shall comply with the above requirements and any applicable State and City & County regulations. Where conflict or any inconsistency among requirements or with this specification exists, the more stringent requirements shall apply. Ignorance of the above requirements and any applicable State and City & County regulations resulting in additional cost to the Contractor shall be solely the Contractor's responsibility.
- C. All regulations shall govern over these specifications, except that any more stringent specification or specification providing greater protection against asbestos exposure, injury, loss or liability, shall control to the extent permitted by regulation. Any question regarding conflict or inconsistency between specification and/or regulations should be directed to the Architect and/or State.
- D. Whenever approval of the Architect and/or State is required prior to proceeding with other work, the following shall be complied with:
 - 1. The Contractor shall allow the Architect and/or State 72 hours from notification to respond to the request for inspection.
 - 2. The Contractor shall designate one person (either a foreman or superintendent) who will be authorized to request for inspections. The name of the designated person shall be submitted in writing to the Architect and/or State prior to commencing with the work. Request from any other person will not be considered an official request.

1.10 DEFINITIONS

- A. <u>Abatement</u>: Procedure to control fiber release from asbestos-containing building materials.
 - 1. <u>Removal</u>: All herein specified procedures necessary to remove asbestos-containing materials at an approved site in an acceptable manner.
 - 2. <u>Post-Removal Surface Encapsulation</u>: Procedures necessary to coat surfaces from which asbestos-containing materials have been removed and where designated on the drawings to control any residual fiber release.

- B. <u>Air Monitoring</u>: The process of measuring the fiber content of a specific, known, volume of air in a stated period of time.
- C. <u>Amended Water</u>: Water to which a surfactant has been added to reduce water surface tension and thereby provide a more rapid penetration.
- D. <u>Authorized Visitor</u>: the Architect and/or State, the Qualified Consultant, his representatives, air monitoring personnel, or a representative of any regulatory or other agency having jurisdiction over the project.
- E. <u>Holding Area</u>: A secure area used for the storage of double-bagged asbestos containing material before removal from the project site to an approved disposal site.
- F. <u>Fixed Object</u>: A unit of equipment or furniture in the work area which cannot be removed from the work area without dismantling.
- G. <u>Friable Asbestos</u>: Asbestos containing material which can be crumbled to dust, when dry, under hand pressure.
- H. <u>HEPA Filter</u>: A High Efficiency Particulate Absolute filter capable of trapping and retaining 99.97% of asbestos fibers greater than 0.3 micron in length.
- I. <u>HEPA Vacuum Equipment</u>: Vacuuming equipment that utilizes a High Efficiency Particulate Absolute (HEPA) filter.
- J. <u>Surfactant</u>: A chemical wetting agent added to water to improve penetration, thus reducing the quantity of water required for a given operation or area.
- K. <u>Post-Removal Encapsulation</u>: A liquid material which can be applied to surfaces from which asbestos-containing material has been removed to control the possible release of residual fibers, either by creating a membrane over the surface (bridging encapsulant) or by penetrating in to the material and binding its components (penetrating encapsulant). Selected product shall be compatible with the existing finishes including wood, metal, and plastic.
- L. <u>Qualified Consultant</u>: Consultant hired by the General Contractor who will perform air monitoring and inspection during abatement work and shall have the authority to initiate engineering controls. The Qualified Consultant will be accredited as a State of Hawaii Department of Health accredited Asbestos Project Monitor.

PART 2 - PRODUCTS

2.01 MATERIALS

A. <u>Plastic Sheeting</u>: Minimum thickness is 6-mil polyethylene film.

- B. <u>Plastic Bags</u>: Minimum thickness 6-mil polyethylene film labeled as specified hereinafter.
- C. <u>Tapes</u>: Tape shall be capable of sealing joints of adjacent sheets of polyethylene and for attaching polyethylene sheets to finished or unfinished surfaces of dissimilar materials and capable of adhering under both dry and wet conditions, including the use of amended water. Silver cloth duct tape, minimum 2 inches wide; red or NATO orange tape, minimum 2 inches wide for exit arrows; and double faced foam tapes, by Nashua, 3-M, Arno, or approved equal.
- D. <u>Adhesives</u>: Adhesives shall be capable of sealing joints of adjacent sheets of polyethylene and for attachment of polyethylene sheet to finished or unfinished surfaces of dissimilar materials and capable of adhering under both dry and wet conditions, including use of amended water.
- E. <u>Warning Labels and Signs</u>: As required by OSHA regulations 29 CFR 1926.1101. Permanent signage for access panels and areas with encapsulated asbestos-containing materials shall be as specified hereinafter. Signage shall be as approved by the Architect and/or State.
- F. <u>Protective Clothing</u>: As specified hereinafter. The Contractor shall have all the required sets of coveralls required for this project on island prior to the start of work. There will be no time extension for the unavailability of coveralls or related equipment.
- G. <u>Post-Removal Encapsulation</u>: The encapsulant shall be applied to surfaces from which asbestos-containing material has been removed to control the possible release of residual fibers, either by creating a membrane over the surface (bridging encapsulant) or by penetrating in to the material and binding its components (penetrating encapsulant) and shall be compatible with the existing finishes including wood, metal, and plastic.
- H. <u>Other Materials</u>: Provide all other materials, such as, but not limited to lumber, plywood, nails, fasteners, metal studs, hardware, foam sealants, and caulking which may be required to properly prepare and complete this project.

2.02 TOOLS AND EQUIPMENT

- A. <u>General</u>: Provide and fabricate suitable tools for the asbestos abatement procedures.
- B. <u>Water Sprayer</u>: Airless or a pressure sprayer for amended water application as applicable.

- C. <u>Air Purification Equipment</u>: High Efficiency Particulate Absolute (HEPA) filtration systems.
- D. Paint/Encapsulant Sprayer: Airless type.
- E. Other tools and equipment as necessary.

2.03 PERSONNEL PROTECTION REQUIREMENTS

- A. The contractor acknowledges he alone is responsible for instruction and for enforcing personnel protection requirements and that these specifications provide only a minimum acceptable standard.
- B. Provide workers with sufficient sets of disposable protective full body clothing consisting of material impenetrable by asbestos fibers and of the proper size for each individual to accommodate movement without tearing. Such clothing shall consist of full body coveralls, footwear, gloves and headgear. Provide hard hats as required by applicable safety regulations. Disposable clothing shall not be allowed to accumulate and shall be disposed of as asbestos contaminated waste. Protective clothing shall be worn by all personnel within the work area from the start of the removal and post-removal encapsulation work until the work area has received its final clearance.
- C. Insulated non-skid rubber boots or an approved equal shall be required for all individuals entering the work area. Protective full body clothing without elastic at sleeves and legs shall require separate elastic or taped protection to seal the opening. Visitors shall be provided full body protective clothing.
- D. No visitors shall be allowed in work areas, except as authorized by the Architect and/or State. Visitors must supply their own respiratory protection and show proof training in accordance with DOH 11-501-504. Provide authorized visitors with suitable disposable protective full body clothing consisting of material impenetrable by asbestos fibers and of the proper size for each individual to accommodate movement without tearing. Such clothing shall consist of full body coveralls, footwear, gloves and headgear including hard hat when required and insulated rubber boots or equal. The Contractor shall include in his Bid the expense of a total of 4 changes of clothing per day for each day of asbestos abatement work for visitor's use. The quantity shall accumulate and may be used at any time during asbestos abatement work at the discretion of the Architect and/or State.
- E. All electrical systems used for asbestos abatement operations shall as a minimum be protected with "Ground Fault Circuit Interrupters" selected and installed in strict accordance with the manufacturer's instructions, the National Electric Code and all other pertinent codes.

F. Additional safety equipment (e.g. hardhats meeting the requirements of ANSI Z-89.1-2009, eye protection meeting the requirements of ANSI Z87.1-2015, safety shoes meeting the requirements of ANSI Z41.1-1991, disposable PVC gloves), as necessary, shall be provided to all workers and authorized visitors.

PART 3 - EXECUTION

3.01 SEPARATION OF WORK AREAS FROM NON WORK AREAS

- A. <u>Penetrations</u>: Windows and doors and any other openings to the work area, shall be sealed with 2 layers of 6-mil poly sheeting and secured with duct tape.
- B. <u>Emergency Exits</u>: Designate and maintain emergency and fire exits from the work area in accordance with local codes and regulations. Provide knockout/cut away panels in the barriers in the direction of emergency egress. Properly mark the knockout/cut away panels, seal them airtight, and on a continuing basis instruct workers and authorized personnel as to their locations. Post a diagram in each Clean Room and Equipment Room locating the emergency exits. In case of fire while doing work in the work areas, emergency exit procedures have priority over normal work exiting procedures.
- C. <u>Inspection</u>: The Contractor shall inspect all barriers at least twice a day (once prior to the start of each day's abatement operations and following the day's abatement operations). Document the inspections and observations in a daily project log.
- D. <u>Emergency Exits</u>: Designate and maintain emergency and fire exits from the work area in accordance with local codes and regulations.

3.02 DECONTAMINATION ENCLOSURE SYSTEMS

- A. <u>General</u>: The Contractor shall construct the decontamination enclosure system or use portable units acceptable to the Qualified Consultant and as identified in the approved asbestos abatement work plan.
- B. <u>Worker Protection Notice</u>: Post the following notice in each Clean Room and Equipment Room:
 - 1. Workers and authorized personnel, in order to enter the work area, shall:
 - a. Remove all clothing, unless it is to remain in the Equipment room for eventual disposal.
 - b. Don the appropriate respiratory protection, follow all training procedures and manufacturer's instructions.

Check the equipment for proper operation before proceeding any further.

- c. Don protective clothing (full body coveralls, gloves, boots, headgear etc.) after donning respirator.
- 2. All workers and authorized personnel, in order to leave the work area, shall:
 - a. Remove gross (visible) contamination from themselves and their equipment. HEPA vacuum off dust in the work area.
 - b. Enter the Equipment Area and, keeping your respirator in place, remove all protective clothing, including full body coveralls, gloves, boots, and headgear. Place contaminated clothing in the bag(s) provided.
 - c. Proceed to the Clean Area: Get dressed and return respirator to its proper place.
 - d. No smoking, eating, drinking shall be allowed inside the work area or the decontamination area.

3.03 WASTE WATER FILTERING SYSTEM

- A. Prior to any waste water disposal into the sanitary sewer system, the Contractor shall be responsible for obtaining from the City and County of Honolulu, Environmental Services, Division of Environmental Quality, *Temporary Industrial Wastewater Discharge* Permit.
- B. <u>Filter</u>: All waste water that will be discharged into the sanitary sewer system shall be treated as contaminated with asbestos and shall be filtered using two in-line filter cartridges with 2" inlets and outlets. The outlet of the first cartridge shall connect to the inlet of the second cartridge. The first cartridge shall contain six 100-micron prefilters and a second cartridge shall contain six 0.5-micron filters or equal staging according to type filtering unit.
- C. One spare set of 100-micron prefilters shall be maintained at the site at all times to replace prefilters during cleaning. Maintain at least one set of 0.5-micron or equal filters at the site at all items form replacement as necessary.

3.04 COMMUNICATIONS

A. Provide a communications system suitable to monitor all activities within the work area and to readily transfer messages from one location to another.

3.05 WORK AREA PREPARATION

A. <u>Work by the Asbestos Abatement Contractor</u>:

- 1. <u>Step 1</u>:
 - a. <u>Posting of Danger Signs</u>: Post danger signs in and around the work area to comply with 29 CFR 1926.1101 and all other Federal, State and local requirements. Signs shall be posted at a distance sufficiently far enough away from the work area to permit a person to read the sign and take the necessary protective measures to avoid exposure.
 - b. <u>Critical Seals (barriers)</u>: Seal all interior penetration and/or openings within the regulated work areas with plastic sheeting. Plastic sheeting is to remain in place for the duration of the asbestos abatement or until specified by the QC.
 - c. Install another barrier or isolation method which prevents the migration of airborne asbestos and debris from the regulated work area.
 - d. <u>Inspect the Building Openings</u>: At the beginning of each work day, the Contractor shall inspect and ensure that all doors, windows and other openings of affected building(s) and all surrounding buildings are closed and locked (as applicable).
- 2. <u>Step 2</u>:
 - a. <u>Provide Decontamination Units where appropriate</u>: Personnel Decontamination Unit(s) specified hereinafter shall be required.
 - b. <u>Air Filtration Units</u>: Install sufficient number of HEPA air filtration units to create a minimum of four air changes per hour and create a negative pressure differential of -0.02 inches of water, as applicable. Contractor to monitor the pressure differential for the duration of the project using a portable manometer. Contractor will keep one spare unit at the job site for the duration of the work.
 - c. <u>Precleaning/Wet-wiping</u>:
 - Pre-clean fixed object within the work area, first using HEPA vacuum equipment and then wet cleaning methods as appropriate and separately enclose with minimum 6-mil plastic sheeting sealed with tape. Fixed objects shall include, but not be

limited to exposed electrical conduits and all other permanently fixed items.

- 3. <u>Step 3</u>:
 - a. <u>Plasticizing</u>: Objects which may be contaminated during abatement or difficult to clean shall be taped and sealed in a minimum of 6-mil polyethylene plastic sheeting. A minimum of 2 layers of 6-mil polyethylene plastic sheeting shall be used for preparation of critical barriers and containments.
 - When sealing (plasticizing), plastic sheet shall be protected against damages by sharp edges, projections, etc. Provide 2" squares of duct tape at all sharp projections prior to applying plastic sheet to prevent puncture and tearing.
 - c. <u>NOTE</u>: Combining lower mil thickness sheets to total the minimum mil thickness is not acceptable.
 - d. Install a poly sheeting splashguard covering all walls within the work area, extending from the top of cove base to be removed to four feet for the floor tile/adhesive and cove base/adhesive removal.
 - e. <u>Marking Exits</u>: Maintain and mark both normal and emergency exits from the work areas to include large tape or spray painted orange arrows in the direction of egress and at curtained doorways which side of plastic sheeting to access first. One arrow marking shall be visible from every work location. Establish a color or designation system to distinguish normal exiting to the personnel decontamination unit and emergency exiting when life safety conditions prevail.
- 4. <u>Step 4</u>: Temporary utility services:
 - a. <u>Temporary Electricity and Lighting</u>:
 - Existing electrical service to the building may be used for temporary electrical power during abatement and replacement work; however, the electrical power to the work area will be shut down during abatement work.
 - The Contractor shall verify the locations(s) of available electrical service outside the work areas and shall tie into the existing system at a location approved by the Architect and/or State.

- 3) Install circuit and branch wiring, with area distribution boxes located so that power is available throughout the project by use of construction type power cords. All lighting shall be three wire with a ground fault interrupter.
- 4) Provide a minimum of 35 foot-candles of illumination on surface for finishing operation and 100-foot candles for removal operations. Provide 24 volt safety lighting.

b. <u>Temporary Water</u>:

 Existing domestic water service to the building may be used for temporary water during construction. Location of tie-in shall be approved by the Architect and/or State.

c. <u>Temporary Fire Protection</u>:

- 1) Provide and maintain temporary fire protection equipment during the asbestos abatement operations.
- 2) Equipment shall be of the appropriate type to fight fires associated with the existing building materials and those materials used during the construction operations.
- 3) The Contractor shall clearly mark the location of all fire extinguishers.
- 5. Step 5: After the sealing and temporary facility work is completed, notify the Qualified Consultant and get his approval prior to proceeding with abatement.

3.06 COVE BASE AND MASTIC

- A. Thoroughly wet the caulking and glazing materials with amended water before starting the removal.
- B. Spray the asbestos-containing material repeatedly during the removal operations to maintain a wet condition and to minimize asbestos fiber dispersion. The Qualified Consultant shall have the authority to stop all work due to improper removal techniques.
- C. The asbestos-containing material shall be removed in small sections. Before beginning the next section, the material shall be packed while still moist into sealable 6-mil double polyethylene bags and sealed airtight. No removed material, whether bagged or unbagged, shall be allowed to

dry, fall to the ground, be crumbled into small pieces, pulverized, or made friable.

- D. Prevent contamination spreading to the surrounding public area. A fine spray of the amended water shall be applied in small sections to reduce fiber release preceding the removal of the asbestos-containing material. Spray the asbestos-containing material repeatedly during the removal operations to maintain a wet condition and to minimize asbestos fiber dispersion. The Qualified Consultant shall have the authority to stop all work due to improper removal techniques.
- E. It shall be the responsibility of the Contractor to verify the thickness of the material and satisfy himself as to the total work and/or effort to remove said material.
- F. Contractor to coordinate all work with the Architect and/or State, General Contractor and Qualified Consultant
- G. The Contractor is prohibited from using methods of removal that create excessive amounts of dust and debris.
- H. Mechanical means of removal will not be allowed for caulking/glazing removal work.

3.07 EQUIPMENT CLEANING

A. All contaminated equipment and tools used for removal work shall be washed and cleaned in the work area prior to removing them from the work area. No washing of contaminated equipment and tools will be allowed outside the work area.

3.08 ASBESTOS-CONTAINING WASTE HANDLING

- A. Collect and bag all asbestos debris and any other contaminated debris found in the work area. Clean the visible residual by HEPA vacuuming.
- B. Clean fixed object within the work area, using HEPA vacuum equipment. Fixed objects shall include, but not be limited to pipes, wiring and all other permanently fixed items. Do not use methods that raise dust, such as dry sweeping or vacuuming with equipment not equipped with HEPA filters. Do not use HEPA vacuum equipment on wet surfaces.
- C. Debris shall be bagged and sealed in 6-mil plastic bags immediately after removal. All gross debris created by the removal process shall be bagged and sealed at the end of each removal day.
- D. The bags containing the asbestos waste material shall be checked for evidence of waste material attached to the outside of the bags. If dirty, the bags shall be washed down in the work area. The bags are then moved to the Holding bin. Bags and containers shall be marked with

OSHA label prescribed by the Hawaii OSHA regulations referenced in these specification. Label shall state, "DANGER – CONTAINS ASBESTOS FIBERS – AVOID CREATING DUST – CANCER AND LUNG DISEASE HAZARD." Additionally, label bags in accordance with OSHA 40 CFR 61.150; or EPA 40 CFR 763 if more restrictive. Labeling shall include the name of the waste generator and the site where the waste was generated.

- E. Asbestos contaminated waste with sharp edges (e.g. nails, screws, metal lath, etc.) will tear the polyethylene bags and sheeting and therefore shall be placed in drums or enclosed with cardboard and double wrapped and sealed with plastic.
- F. During the removal process, if plastic sheeting tears, or the duct tape loosens from the surface, the Abatement Contractor shall immediately stop work, cleanup loose asbestos–containing materials, and then reseal the surface by taping over the torn or loosened surface, before commencing again.
- G. Protect the plastic sheeting against tearing caused by sharp projection, corners, edges, etc., of all equipment being used in the removal process. However, if the plastic sheeting tears, the Abatement Contractor shall follow repair procedure specified above.
- Any housing or penetration concealing asbestos-containing materials shall be removed and protected to provide access to the materials.
 Replacement or reattachment of these shall be in a manner such that function and appearance is equal or exceeds the original condition.

3.09 CLEANING AND CLEARANCE OF THE WORK AREA

- A. Should the contractor fail to commence work to clean-up and make the work area asbestos free within one working day after the clean-up thereof has been requested by the Architect and/or State, and thereafter to expeditiously complete the said clean-up, Architect and/or State may without further notice and without termination of contract, have the clean-up done and deduct the cost thereof from the contract.
- B. <u>Visual Clearance of Removal Work Areas</u>: Remove all visible accumulation of asbestos-containing materials and debris by HEPA vacuums, sponging, and wet-wiping. The work areas shall be totally visibly clean and remaining material encapsulated. The Contractor, in the presence of the Qualified Consultant, shall make a complete visual inspection of the work area to ensure dust-free conditions.
- C. Once the Qualified Consultant verifies that the work areas are essentially clean of visible asbestos-containing debris, the Qualified Consultant will collect five post abatement PCM air clearance samples from each work area. The turnaround time of all PCM air samples will be 12 hours from the time of collection.

- D. Should the Contractor fail to achieve the clearance level lower than 0.01 f/cc. Contractor will re-clean the area at no additional cost to the Architect and/or State and all additional fees to perform the sampling and analysis by the Qualified Consultant shall be paid for by the Contractor.
- E. After achieving a clearance level lower 0.01 f/cc, the work area will be cleaned of all remaining containment enclosure sheeting. Clean and repair damage caused by temporary installations or use of temporary facilities. Restore existing facilities to their original condition or better, as approved by the Architect and/or State. Signage applicable to job site safety and the performance of the remaining portions of the work shall remain as applicable.

3.10 DISPOSAL OF ASBESTOS-CONTAINING MATERIAL

A. As the work progresses asbestos-containing waste is generated the Contractor shall transport all waste generated on a pre-scheduled day to the State of Hawaii, Department of Health's authorized disposal site, or as specifically approved by the Architect and/or State to delay a disposal operation. Transport all waste to the predesignated disposal site in accordance with EPA regulations and specific landfill requirements.

Contaminated material shall be double–bagged in bags with OSHA label prescribed by the HIOSH regulations referenced in these specifications. Label shall state, "DANGER – CONTAINS ASBESTOS FIBERS – AVOID CREATING DUST – CANCER AND LUNG DISEASE HAZARD." Additionally, label bags in accordance with OSHA requirement 29 CFR 1926.1101 or EPA 40 CFR 61.150 if more restrictive. Labeling shall include the name of the waste generator and the site where the waste was generated.

- B. Mark vehicles used to transport asbestos-containing waste material during the loading and unloading of the waste so that the signs are visible. The marking must be displayed in such a manner and location that a person can easily read the legend. Refer to 40 CFR Part 61.149 for lettering size, fonts and wording of sign requirements. For all loading and unloading activities, the sign referred to in 40 CFR Part 61.150 (b) (3) shall be displayed prominently.
- C. Vehicles used for transporting waste to the disposal sites shall have a completely enclosed, lockable storage compartment. Storage compartments shall be plasticized and sealed with a minimum of one layer of 6 mil polyethylene sheeting on the sides and top and two layers of 6 mil polyethylene on the floor (bed). Waste materials, except those with sharp edges (metal lath, screws, nails, metal suspension system, etc.), properly double bagged may be transported to the disposal site without being placed in drums if the transporting vehicle is prepared as specified above in addition to any more stringent requirements by HIOSH. The compartments shall be thoroughly wet–cleaned and/or

HEPA vacuumed following the disposal of each load at the disposal sites at an approved location with electrical power as required. At the conclusion of the asbestos abatement, or before transport vehicles are used for other purposes, the polyethylene sheeting shall be properly removed and disposed of as contaminated waste. After this has been accomplished, compartments shall once again be wet–cleaned and HEPA vacuumed in order to eliminate all debris.

- D. At the landfill, upon delivery of the waste for disposal, the Contractor shall notify the Scale Attendant and Landfill Spotter that the waste to be disposed of is asbestos material.
- E. Workers unloading bags at the disposal sites shall be dressed in full body protective clothing and dual cartridge respirators.
- F. Waste disposal manifest forms shall be properly completed to assure custody and disposal of all asbestos–containing material and asbestos contaminated waste at approved disposal sites. Forms shall be kept on file as directed by the Architect and/or State with copies submitted to the Qualified Consultant the next working day after each trip.

NOTE: IT IS THE CONTRACTOR'S RESPONSIBILITY TO ASSURE THAT ANY LANDFILL USED FOR DISPOSAL OF ASBESTOS– CONTAINING OR ASBESTOS CONTAMINATED WASTE IS APPROVED FOR THAT PURPOSE.

- G. Bags must be placed in the hole for burial. Dumping of bags from the containers will not be allowed. However, if a bag is torn and if acceptable by the landfill, the entire container may be buried.
- H. The Contractor shall pay the waste disposal charge and any special handling charges at the landfills. All expenses for landfills shall be the complete responsibility of the Contractor. The bagged material shall be loaded in drums except as noted previously and transported to a landfill authorized by the State Department of Health to accept material containing asbestos. In the event the bag is torn, the tear shall be immediately mended with duct tape and the bag placed into another bag and sealed, and the wrapped material covered with another wrap and sealed. The Contractor shall make all prior arrangements with the landfill.

3.11 LOCK DOWN

A. Prior to removal of the plastic barriers and final visual inspection, a compatible post removal (lockdown) encapsulant shall then be spray applied to all exposed wall surfaces where asbestos has been removed.

TEN DAY NOTICE FORM (sample) page 1

Asbestos Notification of Demolition & Renovation (Ref. HAR Chapter 11-501)

SEND TO: STATE DEPARTMENT OF HEALTH INDOOR AND RADIOLOGICAL HEALTH BRANCH 99-945 HALAWA VALLEY STREET AIEA, HAWAII 96701 Phone (808) 586-5800 Fax (808) 586-5811



I.	Type of notification: O=original R=revised C=cancelled							
II.	Type of operation: D=Demolit	ion R=Renovation OD=Ordered Demo	blition ER=Emergency Renovation					
III.	Facility information							
	Owner name:							
	Address:							
	City:	State:	Zip code:					
	Contact person:		Telephone #:					
	Removal contractor:		License #:					
	Address:							
	City:	State:	Zip code:					
	Contact person:		Telephone #.					
	Other operator:							
	Address:							
	City:	State:	Zip code:					
	Contact person:	5.F	Telephone #:					
IV.	Is asbestos present (y/n):	Certification #:	State of certification:					
v.	Facility description (Inc	lude building number, floor a	nd room number)					
	Building name:							
	Address:							
	City:	State:	Zip code:					
	Location(s) on site:	in la companya de la						
	Building size (sq. ft.):	# Floors:	Age:					
	Present use:	Prior use:						
Of	ficial Use Only							
Pos	stmark Date:	Received by:	State Record Number:					

Page 1 of 3

TEN DAY NOTICE FORM (sample) page 2

VI.	Procedure used to detect the Laboratory name:	is processes a		Analytical metho	od:		
VII.	Specify the nature of the as	bestos materi	al (TSI, surfa	acing, VAT, misce	ellaneous):		
Ame 1	ount of asbestos, including:	PACA	(to be		Nonfriable AC	M (not) to be removed	
2.	CAT I left in place, and CAT II left in place	in place, and removed		Category	1	Category II	
	Pipes (linear ft.)						
	Surfacing (square ft.)	0			() 		
	Facility components (cu. ft.)						
Sc	heduled asbestos abate Start (mm/dd/yy):	ment dates	: Finish (mm/o	id/yy)			
	Circle workdays and times:	weekdays: weekends:	daytime daytime	nighttime nighttime			
Sc	heduled renovation/den Start (mm/dd/yy):	nolition dat	es Finish (mm/o	id/yy)			
	Circle workdays and times:	weekdays:	daytime	nighttime			
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TEN DAY NOTICE FORM (sample) page 3

Na	ame:	Title:	
Au	uthority (Agency):	1	
Da	ate of order (mm/dd/yy):	Date ordered to begin (mm/dd/yy):	
XV. F	or emergency renovations (Ple	ase call 808-586-5800 for additional instructions)	
Da	ate and time of emergency ate (mm/dd/w):	Time: (am/nm)	
De	escription of sudden, unexpected event a	nd the damage caused:	
Đ	planation of how the event caused an u	safe condition or would cause equipment damage or an unreasonable	financial burden
Pe	erson contacted for approval at the Indoc	r and Radiological Health Branch:	
Na	ame	Date (mm/dd/vv): Time: /a.m	./p.m.)
XVII.	I certify that an individual trained in	the provisions of Hawaii administrative rules chapter 11-501, and	certified as a
XVII.	I certify that an individual trained in contractor/supervisor, will be on-si training has been accomplished fo	the provisions of Hawaii administrative rules chapter 11-501, and te during the entire renovation and/or demolition and evidence tha this and all workers will be available at the work-site.	certified as a a the required
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Page 3 of 3

VISITOR/WORKER ENTRY LOG (Sample)

DATE

PROJECT

ALL PERSONNEL MUST SIGN-IN AND SIGN-OUT EVERY TIME THEY ENTER/EXIT THE WORK AREA. PLEASE PRINT CLEARLY. ATTACH EMPLOYEE RELEASE FORM FOR ALL VISITORS.

NAME	EMPLOYER Name, *Address, *Phone	TIME IN	TIME OUT	*PURPOSE OF VISIT	**TYPE OF PPE ISSUED

*NOT required of Contractor's employees

** Type of PPE (Personal Protective Equipment) Issued to include list of protective clothing worn and type of respirator used (Type "C", half-face dual cartridge, etc.

EMPLOYEE ACKNOWLEDGMENT OF INSTRUCTION AND RELEASE FORM (sample)

Employee Name:

Employee Address:

Employee Telephone No .:

DOH Asbestos Certification Number:

Classification of Worker:

Have you had in the past, or present, any respiratory problems?

Yes No

Have you worked in the past with asbestos or fiberglass type materials?

Yes No

The project you will be working on involves the use of asbestos and the removal of the asbestos from the building. Asbestos is considered a health hazard.

The company is supplying all necessary safety clothing and working conditions required and necessary for your protection from asbestos hazard.

You shall be instructed a commencement of the job on the required use of safety equipment, clothing, working conditions and procedures. These must be rigidly adhered to. Smoking is not permitted in the work areas. Disregarding of safety instructions shall result in instant dismissal.

I acknowledge that safety instructions have been given to me by the company at my work commencement and I am thoroughly conversant with them and have answered the above questions truthfully.

Signed:

Employee

Date:

ASBESTOS DISPOSAL FORM (sample)

	Date: .	
Owner or Operator	of Landfill	
Name		
Address		
City	State	Zip
Phone:		
Name of Landfill		
Name		
Address		
City	State	Zip
Phone:		
Hauler		
Approximate Volum	ne of Asbestos R	eceived
Type of Container A	Asbestos in	
Asbestos Containe	r Labeled? YES	S NO
I certify that the abo of asbestos. The	ove statements a delivered mater	re true and that the landfill has been approved for the disposal ial will be covered within 6 inches (15 cm.) of non-asbestos

signed Landfill Owner-Operator

material within 24 hours.

END OF SECTION

SECTION 13282 - LEAD PAINT CONTROL MEASURES

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

A. In performing this project, all possible safeguards, precautions and protective measures shall be utilized to prevent exposure of any individual to lead particulates.

1.02 DESCRIPTION OF WORK

- A. Furnish all labor, materials and equipment necessary to carry out the safe removal, clean-up, proper handling, transportation and disposal of existing lead paint and building components with lead paint with all applicable laws and regulations concerning lead, including all incidental and pertinent operations. The lead work at Young Building, Sub-Basement, Leahi Hospital shall generally include:
 - 1. Selective demolition, removal and disposal of building components coated with lead paint to allow for the safe new work and/or renovation/demolition work as identified in the Inspection Report and Project Drawings.
 - 2. Spot removal and disposal of both deteriorated and intact paint to allow for the safe new work including repainting and/or renovation/demolition work as identified in the Inspection Report and Project Drawings
 - 3. The Contractor shall assume any untested paint to contain lead.
- B. The Contractor shall inform his employees, Subcontractors and all other persons performing work in this project, that painted surfaces within the project areas of the building contain lead. The Contractor, his employees, Subcontractors, etc. shall initiate and maintain all programs necessary to execute the work in accordance with the contract documents, federal, state and local laws, codes, rules and regulations.
- C. The Contractor shall be responsible for ensuring that all work generating lead paint containing debris conforms to the following applicable federal, state and local laws, codes, rules and regulations
 - 1. Occupational Safety and Health Administration (OSHA); Hawaii Occupational Safety and Health (HIOSH) standards and rules.
 - 2. Environmental Protection Agency (EPA), Toxic Substance Control Act (TSCA), 40 CFR Part 745, Lead, Requirements for Lead-Containing Paint Activities in Target Housing and Child Occupied Facilities.

3. Environmental Protection Agency (EPA), Resource Conservation and Recovery Act (RCRA) of 1976, amended in 1980 and 1984.

1.03 COORDINATION WITH OTHER SECTIONS

A. The Contractor shall coordinate all of his lead disturbance activities with the Architect and/or State, General Contractor and and the Qualified Consultant.

1.04 CONTRACTOR RESPONSIBILITIES

- A. The Contractor acknowledges that he alone is responsible for the instruction and for enforcing personnel protection requirements and that these specifications provide only a minimum acceptable standard. Contractor shall comply with all requirements of 29 CFR 1926.62. The Contractor shall also be responsible for complying with all applicable EPA regulations in regards to lead-containing materials.
- B. <u>Respirators</u>: Use appropriate respirators and filters which meet all requirements of OSHA 29 CFR 1926.62.
- C. <u>Protective Clothing</u>: Use appropriate personal protective clothing (disposable suits, eye protection, gloves, etc.) as required by OSHA 29 CFR 1926.62.

1.05 GENERAL REQUIREMENTS

- A. The work specified herein shall include the handling of lead paint, components painted or coated with lead, transportation and disposal procedures as required of lead-containing materials by persons with approprite OSHA/HIOSH training. This work must be performed in compliance with all applicable federal, state, and local regulations and be performed by workers who are capable of and willing to perform the work of this contract.
- B. <u>Applicable Standards and Guidelines</u>: All work under this contract, and any other trade work conducted with the project, shall be done in strict accordance with all applicable federal, state and local regulations, standards and codes governing lead paint removal, transportation and disposal of lead materials.
 - 1. The most recent edition of any relevant regulation, standard, document or code shall be in effect.
- C. <u>Specific Statutory and Regulatory Requirements</u>:
 - 1. Title 29, Code of Federal Regulations, section 1926.62, entitled "Lead Exposure in Construction; Interim Final Rule".

- 2. Title 29 Code of Federal Regulations Part 1910.134, Respiratory Protection.
- 3. Federal Register: Vol. 54, No. 131; Tuesday, July 11, 1989. Department of Labor, Occupational Safety and Health Administration; 29 CFR Parts 1910, 1915, 1917, and 1918; Occupational Exposure to Lead; Statement of Reasons; Final Rule.
- 4. Title 40 Code of Federal Regulations Part 61, National Emissions Standards for Hazardous Air Pollutants
- 5. Title 40 Code of Federal Regulations Part 745, Lead; Requirements for Lead-Based Paint Activities in Target Housing and Child Occupied Facilities; Final Rule
- 6. Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing.

1.06 **DEFINITIONS**

- A. <u>Action Level (AL)</u>: Employee exposure averaged over an 8-hour period, without regard to the use of respirators, to a particular airborne concentration. OSHA requirements become effective at this level. Lead: 30 micrograms per cubic meter of air.
- B. <u>Air Monitoring</u>: The process of measuring the content of a specific, known, volume of air in a stated period of time. For this project, NIOSH 7082 method for lead monitoring.
- C. <u>Authorized Visitor</u>: The Architect and/or State, Contractor hired Qualified Consultant, their representatives, air monitoring personnel, or a representative of any regulatory or other agency having jurisdiction over the project.
- D. <u>Contaminated Area</u>: An area where unwanted toxic or harmful substances exists.
- E. <u>HEPA Filter</u>: A High Efficiency Particulate Absolute filter capable of trapping and retaining 99.97% of particulates greater than 0.3 micron in length.
- F. <u>Lead</u>: Metallic lead, all inorganic lead compounds, and inorganic lead soaps. Excluded are all other organic lead compounds.
- G. <u>Permissible Exposure Limit (PEL)</u>: The employer shall ensure that no employee is exposed to concentrations greater than the PEL as determined from an 8-hour time weighted average. Lead: 50 micrograms per cubic meter.
- H. <u>Personal Monitoring</u>: Contractor's sampling of lead in air concentrations within the breathing zone of an employee to determine the 8-hour time weighted average. The samples shall be representative of the employee's work tasks. The breathing zone shall be considered an area within 12 inches of the nose or mouth of an employee.
- <u>Qualified Consultant</u>: A third party independent consultant hired by the General Contractor, who is educated and trained in recognizing and evaluating work place hazards and stress (in this instance, lead paint removal and related work in accordance with 40 CFR 745, 29 CFR 1926.62) and providing guidance on the methods and means of removing or correcting such hazards and stresses within the work environment. The Qualified Consultant will be accredited as a State of Hawaii Department of Health accredited Lead Supervisor.

1.07 <u>ABBREVIATIONS</u>

- A. <u>CFR</u>: Code of Federal Regulations
- B. <u>HIOSH</u>: Department of Occupational Safety and Health, Department of Labor and Industrial Relations, State of Hawaii
- C. <u>EPA</u>: U.S. Environmental Protection Agency
- D. <u>NIOSH</u>: National Institute for Occupational Safety and Health
- E. <u>OSHA</u>: Occupational Safety and Health Administration
- F. <u>NESHAP</u>: National Emissions Standards for Hazardous Air Pollutants
- G. <u>LP</u>: Lead Paint
- H. <u>TCLP</u>: Toxicity Characteristic Leaching Procedure

1.08 SUBMITTALS PRIOR TO WORK

- A. Final payment will not be made until copies of all submittals have been furnished to and accepted by the Architect and/or State. Submit one electronic copy of the submittal package no later than 10 work days from the notice of award unless otherwise specified in this section. The submittal package will include the items listed below.
- B. <u>Detailed Work Plan</u>: The Contractor shall submit a project work plan for the lead paint disturbance work. The Plan shall be prepared by the State of Hawaii accredited lead supervisor. The Contractor shall also provide detailed information concerning:
 - 1. Preparation of the work area

- 2. Personal protective equipment including respiratory protection and protective clothing.
- 3. Employees who will participate in the project: include documentation of experience, documented proof of lead removal training based on 29 CFR 1926.62 and/or the proposed EPA Model Accreditation for Lead-based Paint Removal Work Training, in addition to any current EPA regulatory requirements, and assigned responsibilities during the project.
- 4. Decontamination procedures for the personnel who may be exposed to lead paint.
- 5. Lead paint treatment, handling and disposal methods and procedures to be used.
- 6. Required air monitoring procedures and sampling protocols.
- 7. Procedures for final cleanup.
- 8. A sequence of work and performance schedule in coordination with other trades.
- 9. Emergency procedures.
- C. <u>Shop Drawings</u>: Submit shop drawings for the following items as a minimum:
 - 1. Descriptions of any equipment to be employed not discussed in this section.
 - 2. Security provisions, if any, in and around the project area.
 - 3. Outline of work procedures to be employed.
 - 4. Location of the waste storage area.
 - 5. Staging of the work, the sequence
 - 6. Entrances and exits to the work place
 - 7. Location and construction of worker decontamination units
 - 8. Water filtration system for all contaminated water. Description of water disposal and copy of water disposal permit from the City & County of Honolulu, Environmental Services, Division of Environmental Quality, *Temporary Industrial Wastewater Discharge* Permit.

- D. <u>Notices</u>: The Contractor shall obtain a Generator's EPA Identification number (if necessary) for the lead-containing waste material generated from the project that is determined to be hazardous.
- E. <u>Insurance</u>: Proof of insurance for Workman's Compensation and General Liability which covers asbestos, lead, and pollution.
- F. Qualifications of the Qualified Consultant.
- G. <u>Manufacturer's Data</u>: Copies of manufacturer's specifications, installation instructions and field test procedures for each material and all equipment related to lead handling and abatement and include other data as may be required to show compliance with these specifications and proposed uses.
- H. <u>Documentation for Instructions</u>:
 - 1. Submit documentation satisfactory to the Architect and/or State that the Contractor's employees, including foremen, supervisors, and any other company personnel or agents who will be exposed to airborne lead dust or who shall be responsible for any aspects of the lead paint removal work activities, have received training in accordance with this specification, 29 CFR 1926.62 and any current EPA regulatory requirements.
 - 2. Submit to the Architect and/or State a written respiratory protection program meeting the requirements of 29 CFR 1910.134(b)(d)(e) and (f), documentation that all employees using respirators have received training, and documentation of respirator fit-testing for all Contractor employees and agents who will enter the work area wearing negative pressure respirators. The Contractor shall be solely responsible for his employee's personal protection.
- I. <u>Documentation From Physician</u>: Before exposure to lead dust or fumes, the Contractor shall provide workers with a comprehensive medical examination as required by 29 CFR 1926.62. This examination will not be required if adequate records show the employees have been examined as required by the aforementioned regulations within the last year.
- J. <u>Respirator</u>s: Submit document NIOSH approvals for all respiratory protective devices used on site. Include manufacturer certification of HEPA filtration capabilities for all cartridges and filters.
- K. <u>Emergency Planning Procedures</u>:
 - 1. The Contractor shall submit an emergency evacuation plan for the Architect and/or State's acceptance prior to the commencement of work. This plan shall include consideration of fire explosion, toxic

atmospheres, electrical hazards, slips, trips and falls, confined spaces and heat related injury. In non-life threatening situations, the injured or incapacitated employee shall decontaminate following normal procedures, with assistance from co-workers if necessary, before exiting the work area to obtain proper medical treatment. In life threatening situations, worker decontamination shall take least priority after measures to stabilize the injured worker, remove the injured worker from the work area, and secure proper medical treatment.

- 2. <u>Emergency Response and Evacuation</u>: The Contractor shall provide and document training in emergency response and evacuation procedures to all workers entering the work area.
- L. <u>Weekly Submittals During the Lead Disturbance Work</u>: Copies of the following:
 - 1. Contractor's weekly job progress reports detailing lead paint disturbance, handling, transportation, and disposal activities. In the job progress reports, the Contractor shall include information on the review of progress concerning previously established milestones and schedules, major problems and action taken, injury reports, equipment breakdown, and bulk material and air sampling results.
 - 2. Work site entry logbooks with information on worker and visitor access.
 - 3. Daily logs documenting filter changes on respirators, HEPA vacuums, and other engineering controls.
 - 4. Waste disposal manifest forms for all lead-containing waste material removed from the lead paint removal site and transported to the disposal site. The papers will include a chain-of-custody form with the names and addresses of the facility, the Contractor, the landfill operator, as well as the estimated quantity of leadcontaining waste material, and the number and type of containers used. The form shall be signed and dated by the Facility Owner, the Contractor, and the landfill operator as the material changes custody. If a separate hauler is employed, their name, address, telephone number, and signature also shall appear on the form.
- M. <u>Waste Disposal and Landfill Requirements</u>: Contractor shall separate lead paint chips and debris from non-hazardous waste materials such as used plastics, disposable tools, etc. Contractor shall clean all bulk lead-containing debris and waste from non-hazardous plastic, tools, suits, etc. prior to disposal.
 - 1. If Toxic Characteristic Leaching Procedure (TCLP) test results of the containers of waste material are below the EPA limit the lead-

containing waste materials (paint chips, contaminated materials, etc.) shall be disposed of at a landfill approved for such purposes. The Contractor shall submit to the Architect and/or State, documentation that the lead-containing waste material removed from the work area has been accepted by the landfill Owner.

- 2. If the TCLP test results are above the EPA limit or if materials are identified as hazardous waste, the lead-containing waste materials shall be disposed of at an EPA approved facility capable of accepting such hazardous waste.
- 3. The Contractor shall submit to the Architect and/or State, documentation that disposal of the lead-containing waste material at the selected landfill is approved by the State of Hawaii, or the EPA approved mainland facility for hazardous lead-containing waste material.

1.09 SUBMITTAL AFTER WORK IS COMPLETED

- A. At the completion of the work, a final report shall be prepared by the Contractor for acceptance by the Architect and/or State. One electronic copy of the report shall be submitted and shall include the items listed below.
- B. The project name, Abatement Contractor, Abatement Contractor license number, EPA waste generator number, work duration, material removed, respiratory protection employed, waste manifest signed by the Contractor, waste transporter, and ladnfill operator, and total quantity of waste, TCLP lead reports, employee exposure air sample results, and results of the most current PAT round results for the laboratory conducting the employee exposure air sample analysis.
- C. Certification of the Abatement Contractor's employees.
- D. <u>Visitor/Worker Entry Log</u>: The daily log of all personnel including the Contractor's employees and agents who enter the work area while lead abatement operations are in progress, until final clearance is received fromt eh Qualified Consultant. The log shall contain the listed information as a minimum and shall be certified by the Contractor hired Qualified Consultant.
 - 1. Date of visit/worker entry
 - 2. Visitor/Worker's name, employer, business address and telephone number
 - 3. Time of entry and exit from work area
 - 4. Purpose of visit

- 5. Type of protective clothing and respirator worn
- 6. Certificate of release signed and filed with the contractor
- E. Clearance certifications received from the Qualified Consultant.
- F. A statement signed by the Lead Abatement Contractor that all lead abatement and disposal was completed in compliance with this specification, Federal and State regulations, and the approved Work Plan.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.01 POTENTIAL LEAD HAZARD

- A. The disturbance or dislocation of lead-containing materials may cause lead-containing dust to be released into the atmosphere, thereby creating a potential health hazard to the workers and the general public. Apprise all workers, supervisory personnel, subcontractors, consultants, authorized visitors, occupants and neighbors who will be at or near the job site of the seriousness of the hazard and of proper work and protective procedures which must be followed (such as informing affected individuals as required by 40 CFR 745, keeping windows and doors closed; and air conditioning and ventilation units shut down during removal work).
- B. Where in the performance of the work, workers, supervisory personnel, subcontractors, or consultants who may encounter, disturb, or otherwise function in the immediate vicinity of any identified lead-containing materials, take appropriate continuous measures as necessary to protect all workers and the general public from the potential hazard of exposure to respirable airborne lead dust. Such measures shall include the procedures and methods described in the regulations of applicable federal, state and local agencies.

3.02 WORK AREA PREPARATION

- A. <u>Treatment of Surfaces</u>: During disturbance work, acceptable industry standard dust control methods shall be used to control dust (such as wetting items to be disturbed, by misting; provide dust screens; remove items in large, whole pieces; avoid crushing and pulverizing removal methods; encapsulate material prior to disturbace; use amended water; and containerize wet waste material). Prevent contamination spreading to the surrounding public and residential area.
- B. <u>Barriers</u>: Standard barriers such as construction warning tape, fencing, etc. shall be used to prevent the general public access on to the work site. Seal any penetrations to the affected work area with 6 mil polyethylene plastic sheeting and duct tape.

- C. <u>NESHAP Compliance</u>: Compliance with the requirements of EPA's NESHAP regulation is required for this project. Proper notification of the renovation of the building to the Department of Health shall be the Contractor's responsibility.
- D. Ensure that all personnel working on site during the removal work are properly trained and protected as required by law.

3.03 CLEANUP AND TESTING

- A. Post-work visual clearance will be conducted by the Qualified Consultant.
- B. All non-hazardous waste shall be removed from the site by the completion of the project. The Contractor, in the presence of the Qualified Consultant, shall collect representative samples of the waste stream for TCLP lead analysis. All hazardous waste shall be removed from the site to an EPA approved disposal facility within 90 days of the removal work.
- C. Clean Up and Testing: Wet clean and HEPA vacuum clean surfaces and surrounding ground within the lead control area daily. Do not allow lead painted/coated debris, paint chips, and dust to accumulate. Restrict the spread of dust and debris. Keep waste from being distributed over the general area. Do not dry sweep or use compressed air to clean the area. When the removal operation has been completed, the area will be cleaned of all visible lead paint contamination by vacuuming with a High Efficiency Particulate Absolute (HEPA) filtered vacuum cleaner followed by wet mopping where applicable. The Qualified Consultant will visually inspect the affected surfaces for residual lead paint chips and accumulated dust. The Contractor shall reclean areas showing dust or residual paint chips. If recleaning is required, the process will be repeated until the visual clearance is given by the Qualified Consultant. Do not remove the lead control area or roped-off perimeter and warning signs prior to the receipt of the Qualified Consultant's lead clearance certification.

3.04 TRANSPORTATION AND DISPOSAL

A. Disposal of Hazardous Waste and Non-hazardous Waste: Contractor shall separate potentially non-hazardous waste material (i.e. plastic sheeting, disposable protective suits, etc.) from hazardous waste material prior to testing. All other debris, scraps, waste materials, rubbish and trash contaminated with lead paint and contaminated dust from the immediate work area and place in UN approved (49 CFR 178) and appropriately labeled containers and store on site for TCLP lead testing. The Contractor shall be responsible for collecting and paying of all TCLP testing.

- Local waste landfill facilities do not accept any RCRA hazardous waste. All hazardous waste must be disposed of at an EPA approved mainland U.S. RCRA hazardous waste disposal facility. Hazardous waste must be disposed of within 90 days of the waste being created.
- 2. Non-hazardous lead waste and debris may be disposed of at the local waste landfill facility that is State approved to accept such waste.
 - a. Notify Non-hazardous Waste Landfill Operator: The Contractor shall advise the Non-hazardous Waste landfill operator, at least twenty-four (24) hours prior to transportation, of the material to be delivered.
 - b. Provide the Non-hazardous Waste Landfill Operator with applicable TCLP results which indicate that the waste material is non-hazardous.
- B. Disposal of Non-Hazardous Painted Construction Debris (TCLP for Lead Not Exceeding EPA Limits): Remove non-hazardous lead waste including, debris, scraps, waste materials, rubbish, and trash from the site and disposed of at a landfill approved for disposal.
- C. The Contractor shall submit disposal manifest and receipts showing acceptance of all waste material by the approved waste disposal site to the Qualified Consultant. The shipping papers shall include a chain-of-custody form and include names and addresses of the Facility Owner, the Contractor, and the Landfill Operator and information on the type and number of waste containers.

3.05 CLEARANCE CRITERIA

- A. Should the contractor fail to commence work to clean-up and make the work area lead debris free within one working day after the clean-up thereof has been requested by the Architect and/or State, and thereafter to expeditiously complete the said clean-up, Architect and/or State may without further notice and without termination of contract, have the clean-up done and deduct the cost thereof from the contract.
- B. <u>Visual Clearance of Removal Work Areas</u>: Remove all visible accumulation of lead-containing materials and debris by HEPA vacuums, sponging, and wet-wiping. The work areas shall be totally visibly clean of any lead debris or waste. The Contractor, in the presence of the Qualified Consultant, shall make a complete visual inspection of the work area to ensure lead debris free conditions.

- C. Once the Qualified Consultant certifies that the work areas are essentially clean of lead debris the other Contractors may proceed with their work. The removal of signage required by lead disturbance work shall be allowed after all lead-containing material designated to be removed is removed. Signage applicable to job site safety and the performance of the remaining portions of the work shall remain as applicable.
- D. Completely remove all temporary barriers and materials when their use is no longer required. Clean and repair damage caused by temporary installations or use of temporary facilities. Restore existing facilities to their original condition or better, as approved by the Architect and/or State.

3.06 CONTRACTOR RESPONSIBILITIES

- A. The Contractor shall be responsible for all TCLP lead testing and alaysis.
- B. The Contractor shall be responsible for his employees' personnel protection, personal air monitoring and necessary records as required by OSHA, Hawaii State Law and all other applicable laws and as required in these specifications. The Contractor shall provide all required documentation to the government. Contractor shall collect daily personal air samples on at least 25% of the personnel performing removal work with the most exposure for the duration of the project.
- C. Air monitoring and testing which becomes necessary in order to follow up on work by the Abatement Contractor, rejected as not conforming to the requirements shall be the responsibility of the Abatement Contractor. The full cost of such additional monitoring shall be borne by the Abatement Contractor, and shall not be a part of the final contract payment.

3.07 MONITORING RESULTS

- A. Airborne lead levels in areas adjacent to the work area or in any part of the work site impacted by the removal activities shall not exceed 30 micrograms per cubic meter of air.
- B. If the above ambient concentrations and/or the PEL's are exceeded, the Contractor shall cease all work immediately in any work area causing or contributing to such a condition. The Contractor shall take remedial action (e.g. misting with more water, encapsulation, provide dust screens, etc.) to reduce concentrations to acceptable levels.

END OF SECTION

SECTION 13288 - TESTING AND AIR MONITORING

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

A. In performing this project, all possible safeguards, precautions and protective measures shall be utilized to prevent exposure of any individual to asbestos and lead particulates.

1.02 DESCRIPTION OF WORK

- A. These specifications are based upon procedures and standards derived from U.S. regulatory agencies (EPA, OSHA, NIOSH) and the Hawaii State Division of Occupational Safety and Health as well as from industry and sound industrial hygiene practice.
- B. Testing, daily area air monitoring and visual inspections shall be provided by the Qualified Consultant hired by the General Contractor for the purpose of:
 - 1. Verifying compliance with the specifications and the applicable regulations listed in SECTION 13281 ASBESTOS ABATEMENT; SECTION 13282 LEAD PAINT CONTROL MEASURES;
 - 2. Ensuring that the State's legally required documentation is collected;
 - 3. Providing engineering control during the project.

1.03 **DEFINITIONS**

- A. ACM: asbestos containing materials.
- B. <u>ASCM</u>: arsenic containing materials.
- C. <u>Building representative(s)</u>: The person or persons designated by the users of the building to act on their behalf.
- D. <u>Contractor</u>: The construction firm engaged to remove, encapsulate and/or dispose of the hazardous materials.
- E. <u>Industrial Hygienist</u>: A Certified Industrial Hygienist (CIH) certified by the American Board of Industrial Hygiene who shall direct all air monitoring and project supervision.
- F. <u>Lead</u>: Metallic lead, all inorganic lead compounds, and inorganic lead soaps. Excluded are all other organic lead compounds

- G. <u>Project Designer</u>: The person of firm who prepared the plans and specifications to remove, encapsulate and dispose of the ACM.
- H. <u>Project Manager</u>: The State employee responsible for administering the construction contract and ensuring that the work of the contractor is conducted according to the contract documents and in compliance with applicable laws, regulations, ordinance, etc.
- I. <u>Project Monitor</u>: A member of the construction management team who enters the work area to set up the air monitoring device and then collects the various air samples to be sent to the laboratory for analysis.
- J. Qualified Consultant: A third party independent consultant hired by the General Contractor who will perform air monitoring and inspection during asbestos and lead work and shall have the authority to initiate engineering controls. The Qualified Consultant will be accredited as a State of Hawaii Department of Health accredited Project Monitor and Lead Supervisor.

1.04 COORDINATION WITH OTHER SECTIONS

A. Coordinate with the Architect and/or State, General Contractor and Qualified Consultant for the testing/air monitoring requirements included in SECTION 13281 - ASBESTOS ABATEMENT; SECTION 13282 -LEAD PAINT CONTROL MEASURES.

PART 2 PRODUCTS (Not Used)

PART 3 - EXECUTION

3.01 GENERAL CONTRACTOR'S RESPONSIBILITIES

- A. Testing, ambient air monitoring shall be provided by the General Contractor.
- B. The Contractor shall be responsible for his employees' personnel protection, personal air monitoring and necessary records as required by OSHA, Hawaii State Law and all other applicable laws and as required in these specifications. The Contractor shall provide a final report with all required documentation to the State.
- C. The Contractor shall procure legally required reports for air monitoring as part of the contract. All air monitoring reports shall include all field data, laboratory reports, test results and other pertinent information about the daily work activities.
- D. The Contractor shall be responsible for the proper required notifications to the EPA and State of Hawaii Department of Health.

3.02 TESTING AND AIR MONITORING

- A. Duties of the Qualified Consultant.
 - 1. <u>Photographic Record of Project</u>: Record the abatement project with representative photos. All photos shall become the property of the State and are to be accompanied by a detailed log.
 - 2. <u>Project Log</u>: Maintain daily field reports detailing all key activities during abatement and make a summary of project activities to the Architect and/or State. Incorporate the contents of the daily field reports with other project data into a final project report.
 - 3. <u>Visual Inspection of all Work Areas</u>: Perform regular inspections of all containment areas. Conduct inspections during the actual work performance of the contractor to document the work practices employed and prior to air testing in each area to verify that all materials scheduled for abatement were removed and the area was properly cleaned.
- B. <u>Air Monitoring</u>: The Qualified Consultants on-site air monitoring specialists or industrial hygienists shall perform the following activities associated with this portion of the project:
 - 1. On-site environmental air monitoring as required by EPA, OSHA, and the project specifications.
 - 2. Laboratory analysis by the most current NIOSH or OSHA method.
 - 3. Monitoring of decontamination procedures at site entry/exit.
 - 4. Monitoring of containment maintenance by visual and instrumental inspection.
 - 5. Interface with project inspectors, building representatives, representatives of regulatory agencies, and project designers during site visits.
 - 6. Ensure that proper respiratory protection is utilized by all persons at the project site.
 - 7. Relay to the Architect and/or State any discrepancies in contractor's action with provisions of project specifications.
 - 8. Act quickly in case of emergencies with appropriate response.

3.03 SAMPLING DESIGN

- A. The following is a typical sampling design per containment area during the actual construction. The number of samples and volume quantities may vary, depending on each project's specification.
- B. <u>Work Area Samples</u>: Low volume samples of 480 liters each shall be taken asbestos and lead work areas. If monitoring inside and outside the abatement work area shows airborne concentrations have reached the predetermined specified action level and/or TWA, the Qualified Consultant shall stop all work, notify the Architect and/or State immediately, have the Contractor correct the condition(s) causing the increase and ensure that the Contractor obtains the Architect and/or State's approval prior to restarting the removal work. At minimum one sample will be collected from the center of the work area, one sample upwind of the work area and two samples downwind of the work area.
- C. <u>Final Clearance Samples</u>: Visual inspections will be conducted at the completion of the asbestos work. Asbestos air clearance samples shall be collected for all interior work.

3.04 LABORATORY ANALYSIS

A. The Qualified Consultant shall provide air monitoring results within the 3 days of sample collections to State.

3.05 DAILY TESTING RECORDS

A. At the conclusion of every day's testing, the Qualified Consultant shall have available copies of all air monitoring records of each work area for the Architect and/or State.

END OF SECTION