State of Hawaii
DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESOURCE MANAGEMENT DIVISION
Honolulu, Hawaii

BOARD OF AGRICULTURE

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CONTRACT SPECIFICATIONS AND PLANS

Job No. DOAH26B
Kamuela Vacuum Cooling Plant
Demolition of Inactive Vacuum Cooling Warehouse
Lalamilo Ahupua'a, South Kohala, Hawai'i Island

Civil Engineer:	SSFM International, Inc.
Mechanical/Electrical Engineer:	Inatsuka Engineering LLC
Environmental:	Myounghee Noh and Associates LCC
Architect:	INK Architects

August 2022

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Kamuela Vacuum Cooling Plant
Demolition of Inactive Vacuum Cooling Warehouse
Lalamilo Ahupua'a, South Kohala, Hawai'i Island

Brian Kau, P.E.
Administrator and Chief Engineer
Agricultural Resource Management Division

August 2022

NOTICE TO BIDDERS
(Chapter 103D, HRS)

COMPETITIVE BIDS for Job No. DOAH26B Kamuela Vacuum Cooling Plant, Demolition of Inactive Vacuum Cooling Warehouse, Lalamilo Ahupua'a, South Kohala, Hawai'i Island, shall be submitted to the Department of Agriculture, Agricultural Resource Management Division, on the specified date and time through the Hawaii State e-Procurement (HIePRO). HIePRO is accessible through the State Procurement Office website at www.spo.hawaii.gov.

The Department of Land and Natural Resources Interim General Condition, dated October 1994, as amended, and the General Conditions –AG008, latest revision, shall be made part of the specifications.

The project is located at Waimea (Kamuela), Big Island, Hawaii.

The work shall generally consist of demolition and removal of a vacuum cooling warehouse that is no longer in use. As a bid additive, this work will include work on the exterior of the active warehouse to remove/dispose of hazardous materials, seal warehouse openings, and painting.

Due to the nature of work contemplated, bidders must possess a valid State Contractor's license, classification "A" or "B". In addition, contractor or its subcontractor must possess any additional State Contractor Specialty "C" license to perform the work, including specialty license C-19.

A voluntary pre-bid telephone conference will be held, on Wednesday, September 7, 2022, at 10:30 am. If you are interested in joining the telephone conference, please contact Janice Fujimoto at Janice.fujimoto@hawaii.gov, or by phone at 808-973-9473, by 12:00 pm on Tuesday, September 6, 2022 for the telephone conference dial-in number.

All interested parties are invited to attend a site visit. Additional information about the site visit will be provided during the pre-bid conference. The site visit will be held at the project site, on Thursday, September 8, 2022, at 10:30 am.

The estimated cost of construction is $350,000.00.

The award of the contract, if it be awarded, will be subject to the availability of funds.

Since the estimated cost of construction is $250,000 or more, the apprenticeship agreement preference pursuant to Hawaii Revised Statutes §103-55.6 (ACT 17, SLH 2009) shall apply.

Should there be any questions, please refer to the HIePRO solicitation.

The Hawai‘i Department of Agriculture does not discriminate on the basis of race, color, sex, national origin, age, or disability, or any other class as protected under applicable federal or state law, in administration of its programs, or activities, and, the Department of Agriculture does not intimidate or retaliate against any individual or group because they have exercised their rights to participate in actions protected, or oppose action prohibited, by 40 C.F.R. Parts 5 and 7, or for the purpose of interfering with such rights.

If you have any questions about this notice or any of the Department's non-discrimination programs, policies, or procedures, you may contact:

Morris Atta, Acting Non-Discrimination Coordinator
Hawai‘i Department of Agriculture
1428 S. King Street, Honolulu, HI 96814,
(808) 973-9560
hdoa.titlevi@hawaii.gov

If you believe that you have been discriminated against with respect to a Department of Agriculture program or activity, you may contact the Non-Discrimination Coordinator identified above.

To request translation, interpretation, modifications, accommodations, or other auxiliary aids or services for this RFP, contact the HDOA at (808)973 9473 or email janice.fujimoto@hawaii.gov. Please allow sufficient time for HDOA to meet accommodation requests.

‘A‘ole nō ho‘okae ka ‘Oihana Mahi ‘Ai o ka Moku‘āina o Hawai‘i i kō ke kanaka lāhui, ‘ili, keka, ‘āina, kūlana makahiki, kīnānā a mea ‘oko‘a a‘e i ka‘a ma lalo o nā kānāwai pekelala a moku‘āina, ma ka ho‘okele ‘ana i kona mau papahana, pāhana, a ‘a‘ole ho‘i ho‘omaka‘u, ‘imi mākaia, a ‘āke‘ake‘a ka ‘Oihana Mahi ‘Ai i kekahi kanaka a hui paha ma muli o kō lākou pono, hihia ‘ana i kekahi mau hana ho‘opale ‘ia a i ‘ole kū‘ē kekahi mau hana ho‘okapu ‘ia ma lalo o nā Mahele 5 a me ka 7 o ka 40 Papa Kānāwai Pekelala (C.F.R.).

Inā he mau nīnau kāu no kēia ho‘olaha, a i ‘ole no kekahi o kō ka ‘Oihana Mahi ‘Ai mau polokalamu, kulekele, a ka‘ina hana i pili i ka ho‘okae, e ho‘ohui ‘oe me:

Hawai‘i Department of Agriculture
1428 S. King Street, Honolulu, HI 96814,
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Inā he mana‘o no kou ho‘okae ‘ia i loko kekahi pō‘aiapili no kekahi pāhana a hanana o ka ‘Oihana Mahi ‘Ai, e ho‘ohui nō ‘oe me ka Ho‘olauka‘i Hihia Ho‘okae i ‘ōlelo ‘ia i luna a‘e nei.

No ke noi ‘ana i kōkua māhele a unuhi ‘ōlelo, a me nā lawelawe a kōkua keu o kēlā ‘ano kēia ‘ano no kēia RFP, e kelepona aku i ke ke‘ena o ka Luna Ho‘okele o ka HDOA ma (808)973 9473 a i ‘ole e leka uila aku iā janice.fujimoto@hawaii.gov. E ‘ae mai i wā e ho‘olako aku ai ka HDOA i ia mau lawelawe ‘ana.

Ti Departamento ti Agrikultura ti Hawai‘i ket saan a mangidumduma maibasar iti puli, kolor, seks, nasion a nagtaudan, edad, wenno disabilidad, wenno aniaman a dadduma a klase a protektado iti masakupan ti

maipakat a linteg ti pederal wenno estado, iti panangimaton kadagiti programa, wenno aktibidadna, ken, ti Departamento ti Agrikultura ket saan a mamutbuteng wenno bumales maibusor iti siasinoman nga indibidual wenno grupo gapu ta inusarda dagiti karbenganda a makipaset kadagiti tignay a maprotektaran, wenno sinumra ti aramid a maiparit, babaen ti 40 C.F.R. Paset 5 ken 7, wenno para iti panggep a panangsinga kadagita a karbengan.

Nu addaanka iti aniaman a saludsod maipapan iti daytoy nga abiso wenno aniaman a programa, pagalagadan, wenno wagas ti saan a panangidumduma ti Departamento, mabalinmo a kontaken ti:

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(808) 973-9560
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Nu patiem a naidumdumaka mainaig iti programa wenno aktibidad ti Departamento ti Agrikultura, mabalinmo a kontaken ti Tagakoordina iti Saan
a Panangidumduma a nadakamat iti ngato.

Tapno agkiddaw iti panagipatarus, interpretasion, modipikasion, akomodasion, wenno dadduma pay a pangtulong a tulong wenno serbisio para iti daytoy nga RFP, kontaken ti Opisina ti Mangidadaulo iti HDOA iti (808)973 9473 wenno ag-email iti janice.fujimoto@hawaii.gov. Maidawat a palubusam ti umdas a tiempo para iti HDOA tapno matun-oyna dagiti kiddaw nga akomodasion.

ພະແນກກະສິກຳຂອງລັດຮາວາຍບໍ່ເລືອກຈຳແນກບົນພື້ນຖານດ້ານເຊື້ອຊາດ, ສີຜິວ, ເພດ, ຊາດກຳເນີດ, ອາຍຸ ຫຼື ຄວາມພິການ ຫຼື ກຸ່ມຄົນອື່ນໆ ທີ່ຖືກປົກປ້ອງພາຍໃຕ້ກົດໝາຍລັດຖະບານ ຫຼື ລັດທີ່ກ່ຽວຂ້ອງ, ໃນການບໍລິຫານໂຄງການ ຫຼື ກິດຈະກຳຕ່າງໆ ແລະ, ພະແນກກະສິກຳບໍ່ໄດ້ຂົ່ມຂູ່ ຫຼື ຕອບໂຕ້ຕໍ່ບຸກຄົນ ຫຼື ກຸ່ມຄົນໃດໜຶ່ງ ເພາະວ່າພວກເຂົາໄດ້ໃຊ້ສິດທິຂອງເຂົາເຈົ້າໃນການມີສ່ວນຮ່ວມໃນການກະທຳທີ່ໄດ້ຮັບການຄຸ້ມຄອງ ຫຼື ຄັດຄ້ານການກະທຳທີ່ຖືກຫ້າມ, ໂດຍ 40 CFR ພາກ 5 ແລະ 7 ຫຼື ເພື່ອຈຸດປະສົງໃນການແຊກແຊງສິດທິດັ່ງກ່າວ.

ຖ້າຫາກທ່ານມີຄຳຖາມໃດໆກ່ຽວກັບແຈ້ງການສະບັບນີ້ ຫຼື ໂຄງການ, ນະໂຍບາຍ ຫຼື ຂັ້ນຕອນທີ່ບໍ່ມີການຈຳແນກຂອງພະແນກ, ທ່ານສາມາດຕິດຕໍ່ຫາ:

Hawai‘i Department of Agriculture
1428 S. King Street, Honolulu, HI 96814,
(808) 973-9560
hdoa.titlevi@hawaii.gov

ຖ້າທ່ານເຊື່ອວ່າທ່ານໄດ້ຖືກຈຳແນກກ່ຽວກັບໂຄງການ ຫຼື ກິດຈະກຳຂອງກະຊວງກະສິກຳ, ທ່ານສາມາດຕິດຕໍ່ຫາ ຜູ້ປະສານງານການບໍ່ຈຳແນກ ທີ່ລະບຸຢູ່ຂ້າງເທິງ.

ເພື່ອຂໍການແປ, ການຕີຄວາມ, ການດັດແປງ, ການ ອຳ ນວຍຄວາມສະດວກ ຫຼື ເຄື່ອງຊ່ວຍ ຫຼື ການຊ່ວຍເຫຼືອບໍລິການເສີມອື່ນໆ ສຳລັບ RFP ນີ້, ຕິດຕໍ່ຫ້ອງການ HDOA ຂອງປະທານ ທີ່ (808)973 9473 ຫຼື ສົ່ງອີເມວຫາ janice.fujimoto@hawaii.gov. ກະລຸນາອະນຸຍາດໃຫ້ມີເວລາພຽງພໍ ສຳລັບ HDOA ເພື່ອຕອບສະໜອງຄຳຮ້ອງຂໍທີ່ພັກ.

Hawai‘i農業部在其管理的計劃或活動中，不會基於種族、膚色、性別、國籍、年齡或殘障，或任何其他受適用聯邦或州法律保護的類別而进行歧視行
或任何其他受適用聯邦或州法律保護的類別而进行歧視行為，並且農業部不因任何個人或團體依據40 C.F.R.第5部**份和第7部份行使其權利進行受保護活動或反對禁止的行為，或以干擾其權利為目的而恐嚇或報復他們。**
如果**您對本通告或本部門的任何無歧視計劃、政策或程序有任何疑問，您可以聯絡**：

Hawai‘i Department of Agriculture
1428 S. King Street, Honolulu, HI 96814,
(808) 973-9560
hdoa.titlevi@hawaii.gov

如果**您認為您在參與農業部計劃或活動中受到歧視，請聯絡上述指明的無歧視協調員。**
如需與本RFP相關的翻譯、口譯、修改、住宿或其他輔助設施與服務，請致電(808) (808)973 9473 或發送電子郵件至 janice.fujimoto@hawaii.gov聯絡HDOA主席**辦公室。請允許**HDOA足夠的時間來滿足住宿要求。

Ang Kagawaran ng Agrikultura ng Hawai'i ay hindi nagtatangi batay sa lahi, kulay, kasarian, bansang pinagmulan, edad, o kapansanan, o anumang iba pang klase na protektado sa ilalim ng naaangkop na batas ng pederal o estado, sa pangangasiwa ng mga programa, o aktibidad nito, at, ang Kagawaran ng Agrikultura ay hindi nananakot o gumaganti laban sa sinumang indibidwal
o grupo dahil ginamit nila ang kanilang mga karapatan na lumahok sa mga pagkilos na protektado, o tutulan ang ipinagbabawal na pagkilos, ng 40 C.F.R. Bahagi 5 at 7, o para sa hangarin na makagambala sa naturang mga karapatan.

Kung mayroon kang anumang mga katanungan tungkol sa abisong ito o alinman sa mga programa, patakaran, o pamamaraan sa hindi pandidiskrimina ng Kagawaran, maaari kang makipag-ugnayan sa:

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1428 S. King Street, Honolulu, HI 96814,
(808) 973-9560
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Kung naniniwala kang nakaranas ka ng pandidiskrimina patungkol sa isang programa o aktibidad ng Kagawaran ng Agrikultura, maaari kang makipag-ugnayan sa Tagakoordina ng Hindi Pandidiskrimina na tinukoy sa itaas.

Upang humiling ng pagsasalin, interpretasyon, pagbabago, akomodasyon, o iba pang mga pantulong na tulong o serbisyo para sa RFP na ito, makipag-ugnayan sa Opisina ng Tagapangulo ng HDOA sa (808)973 9473 o mag-email sa janice.fujimoto@hawaii.gov. Mangyaring maglaan ng sapat na oras para matugunan ng HDOA ang mga kahilingan sa akomodasyon.

กรมวิชาการเกษตรแห่งฮาวายไม่เลือกปฏิบัติบนพื้นฐานของเชื้อชาติ สีผิว เพศ ชาติกำเนิด อายุ หรือความทุพพลภาพ หรือกลุ่มอื่นใดที่ได้รับการคุ้มครองภายใต้กฎหมายของรัฐบาลกลางหรือรัฐที่เกี่ยวข้อง ในการบริหารโครงการหรือกิจกรรมต่าง ๆ และกรมวิชาการเกษตรไม่ได้ข่มขู่หรือตอบโต้บุคคลหรือกลุ่มใด ๆ เนื่องจากได้ใช้สิทธิในการมีส่วนร่วมในการกระทำที่ได้รับการคุ้มครองหรือคัดค้านการกระทำที่ต้องห้ามโดย 40 C.F.R. ตอนที่ 5 และ 7, หรือเพื่อวัตถุประสงค์ในการแทรกแซงสิทธิดังกล่าว
หากคุณมีคำถามใดๆ เกี่ยวกับประกาศนี้หรือของโครงการการไม่เลือกปฏิบัติของกรม นโยบาย หรือขั้นตอนต่าง ๆ สามารถติดต่อได้ที่:

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หากเชื่อว่า คุณถูกเลือกปฏิบัติในส่วนที่เกี่ยวกับโครงการหรือกิจกรรมของกรมวิชาการเกษตร คุณอาจติดต่อผู้ประสานงานการไม่เลือกปฏิบัติที่ระบุไว้ข้างต้น
หากต้องการขอการแปล ล่ามภาษา การปรับเปลี่ยน ที่พัก หรือความช่วยเหลือหรือบริการสำหรับ RFP นี้ โปรดติดต่อสำนักงาน HDOA ของประธานที่ (808)973 9473 หรืออีเมล janice.fujimoto@hawaii.gov.
โปรดให้เวลาสำหรับ HDOA ในการดำเนินการตามคำขอที่พัก

INFORMATION AND INSTRUCTIONS TO BIDDERS

CONTENTS

INFORMATION AND INSTRUCTIONS TO BIDDERS

A. PROJECT LOCATION AND SCOPE OF WORK: The project location and scope of work shall be as generally described in the Notice to Bidders.

B. PROPOSALS**:** Bidders shall submit their bid, including the completed proposal form, bid bond, and any other documents required by the solicitation, as part of their bid through the State of Hawaii e-Procurement System (HIePRO). See Item D, PROPOSAL FORM.

C. GENERAL CONDITIONS: The Department of Land and Natural Resources Interim General Conditions dated October 1994, as amended, shall be made a part of these contract specifications and are referred to hereafter as the General Conditions.

D. PROPOSAL FORM: The Bidders shall fill out and upload the electronic copy of the proposal form to the HIePRO website when submitting the bid. Bid Proposals shall not be mailed, faxed or delivered to the State, unless requested to do so after the designated closing date. The successful Bidder shall fill out and print a hard copy of the proposal form, sign and submit the form with the contract award package.

E. OMISSIONS OR ERASURES: Any proposal which contains any omission or erasure or alteration not properly initialed, or conditional bid, or other irregularity may be rejected by the Department of Agriculture (Department).

F. NOTICE OF INTENT TO BID AND QUESTIONNAIRE:
A Notice of Intent to Bid is not required for this project. In compliance with HRS Section 103D-310, the lowest responsive and responsible bidder may be required to complete a questionnaire. When requested by the State, the completed questionnaire shall be submitted to the Chief Engineer for evaluation. Failure to furnish the requested information within the time allowed may be grounds for a determination of non-responsibility, in accordance with HRS Section 103D-310 and HAR Section 3-122-108.

G. BID SECURITY: A bid security will be furnished by each bidder as provided in sub-section 2.7 of the General Conditions. The successful bidder's bid security will be retained until Contract execution and furnished a performance and payment bond in an amount equal to one hundred percent (100%) of the total Contract price, including an amount estimated to be required for extra work, is furnished.

The Department reserves the right to hold the bid securities of the four lowest bidders until the successful bidder has entered into a contract and has furnished the required performance bond. All bid securities will be returned in accordance with sub-section 3.5 of the General Conditions.

Should the successful bidder fail to enter into a contract and furnish a satisfactory performance bond within the time stated in the proposal, the bid security shall be forfeited as required by law.

H. CONTRACTOR'S LICENSE REQUIRED: The Department will reject all bids received from contractors who have not been licensed by the State Contractors License Board in

accordance with Chapter 444, HRS; Title 16, Chapter 77, Hawaii Administrative Rules; and statutes amendatory thereto.

I. IRREGULAR BIDS: No irregular bids or propositions for doing the work will be considered by the Department.

J. WITHDRAWAL OF BIDS: No bidder may withdraw his bid between the time of the opening thereof and the award of contract.

K. SUCCESSFUL BIDDER TO FILE PERFORMANCE AND PAYMENT BONDS: The successful bidder will be required to file performance and payment bonds each; in the amount equal to the total contract price, including amounts estimated to be required for extra work, as provided in sub-section 3.6 of the General Conditions.

L. NUMBER OF EXECUTED ORIGINAL COUNTERPARTS OF CONTRACT DOCUMENTS: If requested by the Department, six copies of the Contract, performance and payment bonds shall be executed.

M. CHANGE ORDERS: No work of any kind in connection with the work covered by the plans and specifications shall be considered as change order work, or entitle the Contractor to extra compensation, except when the work has been ordered in writing by the Chief Engineer (Engineer) and in accordance with sub-section 4.2 of the General Conditions.

The Contractor shall clearly identify and inform the Engineer in writing of any deviations from the contract documents at the time of submission and shall obtain the Engineer's written approval to the specified deviation prior to proceeding with any work.

N. WAGES AND HOURS: In accordance with sub-sections 7.3 to 7.9 of the General Conditions relative to hours of labor, minimum wages and overtime pay, the current minimum wage rates promulgated by the Department of Labor and Industrial Relations (DLIR) shall be paid to the various classes of laborers and mechanics engaged in the performance of this contract on the job site. The minimum wages shall be increased during the performance of the contract in an amount equal to the increase in the prevailing wages for those kinds of work as periodically determined by the DLIR.

The Department will not recognize any claim for additional compensation because of the payment by the Contractor of any wage rate in excess of the said minimum wage rates. The possibility of wage increase is one of the elements to be considered by the Contractor in determining his bid, and will not, under any circumstances, be considered as the basis of a claim against the Department under this Contract.

No work shall be done on Saturdays, Sundays, legal State holidays, and/or in excess of eight (8) hours each day without the written consent of the Engineer. Should permission be granted to work at such times, the Contractor shall pay for all inspection administrative costs thereof. No work shall be done at night unless authorized by the Engineer.

O. PERMITS: The State will process permit applications whenever possible, and the Contractor shall procure the pre-processed permits and pay the required fees. If permit applications are not processed by the State, the Contractor shall process the permit applications, permits and

licenses, and pay all charges and fees. In all cases, the Contractor shall give all notices necessary and incident to the due and lawful prosecution of the work.

P. PROPERTY DAMAGE: It shall be the responsibility of the contractor to respect State property and to prevent damage to existing improvements. The Contractor will be responsible for damages resulting from construction operations. Immediately upon discovery, the Contractor shall repair such damage to the satisfaction of the Engineer.

All trees and shrubbery outside the excavation, embankment or construction limits shall be fully protected from injury.

Q. TIME: The time of completion is specified in the Proposal. It is the Department's intention to insist the Contractor diligently prosecute the work to completion within the specified time.

Prospective bidders are reminded that the State has the option to proceed with or abandon a project depending on whether the project can be completed for occupancy in the specified time.

It is the bidder's responsibility to check the availability of all materials before bidding. The bidder shall select sub-contractors and suppliers who can warrant availability and delivery of all specified or qualified materials to assure project completion within the specified time.

The successful bidder must assume all risks for completing the project by the specified date. There shall be no extension of time for any reason except for delays caused by acts of God, labor disputes involving unions, or actions of the State. If for any reason the project falls behind schedule, the Contractor shall at its own cost, take necessary remedial measures to get the project back on schedule, i.e., working overtime, air freighting all materials, etc. In addition, if the Contractor fails to fully complete the project by the completion date, Contractor will be required to make the facility usable at its own cost.

R. BIDDER'S RESPONSIBILITY TO PROVIDE PROPER SUPERINTENDENCE: The successful low bidder shall designate in writing to the Engineer the name of its authorized superintendent (Superintendent), who will be present at the job site whenever any work is in progress. The Superintendent shall be responsible for all work, receiving and implementing instructions from the Engineer in a timely manner. The cost for superintendence shall be considered incidental to the project.

If the Superintendent is not present at the site of work, the Engineer shall have the right to suspend the work as described under sub-section 5.5 c. and 7.20 - Suspension of Work of the General Conditions.

S. LIQUIDATED DAMAGES: Liquidated damages in the amount specified in the Proposal will be assessed for each and every calendar day from and after the expiration of the time period stated in the Contract for the completion of the project.

T. HIRING OF HAWAII RESIDENTS: The Contractor shall comply with Act 68, SLH 2010, in the performance and for the duration of this contract. The Contractor shall ensure that Hawaii residents compose not less than eighty percent of the workforce employed to perform the contract work on the project. The eighty percent requirement shall be determined by

dividing the total number of hours worked on the contract by Hawaii residents, by the total number of hours worked on the contract by all employees of the Contractor in the performance of the contract. The hours worked by any Subcontractor of the Contractor shall count towards the calculation for this section. The hours worked by employees with shortage trades, as determined by the Department of Labor and Industrial Relations (DLIR), shall not be included in the calculation for this section.

The requirements shall apply to any subcontract of $50,000 or more in connection with the Contractor, that is, such Subcontractors must also ensure that Hawaii residents compose not less than eighty percent of the Subcontractor's workforce used to perform the subcontract.

U. WATER AND ELECTRICITY: The Contractor shall make all necessary arrangements and pay all expenses for water and electricity used in the construction of this project.

V. PUBLIC CONVENIENCE AND SAFETY: The Contractor shall conduct construction operations with due regard to the convenience and safety of the public at all times. No materials or equipment shall be stored where it will interfere with the safe passage of public traffic. The Contractor shall provide, install, and maintain in satisfactory condition, all necessary signs, flares and other protective facilities and shall take all necessary precautions for the protection of the work and the convenience and safety of the public. The Engineer shall have the right to suspend the performance of the work in accordance with sub-section 7.20 - Suspension of Work of the General Conditions.

W. WORK TO BE DONE WITHOUT DIRECT PAYMENT: Whenever the contract that the Contractor is to perform work or furnish materials of any kind for which no price is fixed in the contract, it shall be understood that the Contractor shall perform such work or furnish said materials without extra charge or allowance or direct payment of any sort. The cost of performing such work or furnishing said material is to be included by the Contractor in a unit price for the appropriate item unless it is expressly specified that such work or material is to be paid for as extra work.

X. AS-BUILT DRAWINGS: As-built drawings, the intent of which is to record the actual in-place construction so that any future renovations or tie-ins can be anticipated accurately, shall be required. All authorizations given by the Engineer to deviate from the plans shall be drawn on the job site plans. All deviations from alignments, elevations and dimensions which are stipulated on the plans shall be recorded on the as-built drawings. Final as-built drawings shall be submitted to the Engineer for review and approval. After the Engineer approves the as-built drawings, the contractor shall submit an electronic copy in Adobe PDF format on CD ROM.

Y. ASBESTOS CONTAINING MATERIALS: The use of asbestos containing materials or equipment is prohibited. The Contractor shall insure that all materials and equipment incorporated in the project are asbestos-free.

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Z WORKER SAFETY: The Contractor shall provide, install and maintain in satisfactory condition all necessary protective facilities and shall take all necessary precautions for the protection and safety of its workers in accordance with the Occupational Safety and Health Standards for the State of Hawaii. The Engineer shall have the right to suspend the performance of the work in accordance with sub-section 7.20 - Suspension of Work of the

General Conditions.

AA. TOILET FACILITIES: All toilet facilities constructed at the project site shall be in accordance with the Public Health Regulations of the State Department of Health (DOH). All necessary precautions shall be observed at the project site. The use of sanitary facilities shall be strictly enforced and workers violating these provisions shall be promptly discharged.

BB. SIGNS: Whenever the project involves closing or obstructing any public thoroughfare, the Contractor shall provide traffic signs conforming to the applicable provisions of the current edition of the "Manual on Uniform Traffic Control Devices for Streets and Highways", published by the Federal Highway Administration as directed by the Engineer for the purpose of diverting or warning traffic prior to the construction area. All traffic signs shall bear proper wording stating thereon the necessary information as to diverting or warning traffic.

When indicated in the Proposal, the Contractor shall provide a project sign, size 4'-0" x 7'-0" to be placed as directed by the Engineer. The sign shall be constructed in accordance with Section 01581 - Project Sign of these specifications and approved by the Engineer. All wording, type and size of lettering and color selection shall be as specified in these specifications or as approved by the Engineer.

All signs shall be kept neat and clean, and properly erected at all times.

CC. FIELD OFFICE AREA FOR DEPARTMENT: When indicated in the Proposal, the Contractor shall provide a housed working area of at least 100 square feet adjacent to the Contractor's office for the Department's use. This area will be used by the Engineer to perform tests and to store equipment. As a minimum, the field office shall include the following: standard sized office desk and chair, lighting, ventilation, window-type air conditioning rated at 5,000 BTU, door and window with locking hardware, electrical outlets, and working communications facilities (a cellular telephone is acceptable). The Department will pay for all long distance toll charges made by the Engineer.

DD. QUANTITIES: All bids will be compared on the basis of quantities of work to be done as shown in the Proposal; the quantities shown in the Unit Price items are estimated, being given as a basis for comparison of bids. The Department reserves the right to increase or decrease the quantities given under the items or delete items entirely as may be required during the progress of the work.

EE. OTHER HEALTH MEASURES: Forms of work site exposure or conditions which may be detrimental to the health or welfare of workers or of the general public shall be eliminated or reduced to safe levels as required by the DOH codes, standards, and regulations. Suitable first aid kits and a person qualified to render first aid, as specified in the DOH regulations, shall be provided at all times when work is scheduled.

FF. HAWAII BUSINESS OR COMPLIANT NON-HAWAII BUSINESS REQUIREMENT: Bidders (Contractors) shall be incorporated or organized under the laws of the State or be registered to do business in the State as a separate branch or division that is capable of fully performing under the contract, as stipulated in §3-122-112 HAR.

GG. COMPLIANCE WITH §3-122-112 HAR:

As a condition for award of the contract and as proof of compliance with the requirements of 103D-310(c) HRS, the apparent low bidder shall furnish the required documents to the Department. If the valid required certificates are not submitted on a timely basis for award of a contract, a bidder otherwise responsive and responsible may not receive the award. Bidder is responsible to apply for and submit the following documents to the Department.

A. TAX CLEARANCE REQUIREMENTS (HRS Chapter 237): Bidder shall obtain a tax clearance certificate from the Hawaii State Department of Taxation (DOTAX) and the Internal Revenue Service (IRS). The certificate is valid for six months from the most recently approved stamp date on the certificate; the certificate must be valid on the date received by the Department.

B. Department of Labor (DLIR) "Certificate of Compliance". (HRS Chapter 383 - Unemployment Insurance, Chapter 386 - Workers' Compensation, Chapter 392 - Temporary Disability Insurance, and 393 – Prepaid Health Care): Bidder shall obtain a certificate of compliance from the Hawaii State Department of Labor and Industrial relations (DLIR). The certificate is valid for six months from the date of issue; certificates must be valid on the date received by the Department.

C. Department of Commerce and Consumer Affairs (DCCA), Business Registration Division (BREG) "Certificate of Good Standing". Bidder shall obtain a certificate of good standing issued by the Department of Commerce and Consumer Affairs (DCCA), Business Registration Division (BREG). The certificate of good standing is valid for six months from the date of issue; certificates must be valid on the date received by the Department.

Alternately, instead of separately applying for these certificates at the various state agencies, bidder may choose to use the Hawaii Compliance Express (HCE), which allows businesses to register online through a simple wizard interface at http://vendors.ehawaii.gov to acquire a "Certificate of Vendor Compliance" indicating the bidder's status is compliant with the requirements of §103D-310(c), HRS, and shall be accepted for contracting and final payment purposes. Bidders that elect to use the new HCE services will be required to pay an annual fee of $12.00 to the Hawaii Information Consortium, LLC (HIC). Bidders choosing not to participate in the HCE program will be required to provide the paper certificates as instructed in the previous paragraphs.

P R O P O S A L

FOR

DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESOURCE MANAGEMENT DIVISION
State of Hawaii

Job No. DOAH26B
Kamuela Vacuum Cooling Plant,
Demolition of Inactive Vacuum Cooling Warehouse
Lalamilo Ahupua'a, South Kohala, Hawai'i Island

_____, 2022

Chief Engineer
Agricultural Resource Management Division
Department of Agriculture
State of Hawaii
Honolulu, Hawaii

Dear Sir:

The undersigned, having carefully examined the local conditions and all available records and information covering conditions which may affect the cost of the work to be performed, and having carefully examined the Plans and Specifications, and other contract documents, hereby proposes to furnish and pay for all materials, tools, equipment, labor and other incidental work necessary to demolish an inactive vacuum cooling warehouse, handle/dispose of hazardous material, and related work as required or called for in this Proposal, all according to the true intent and meaning of the Notice to Bidders, Information and Instructions to Bidders, Proposal, Detailed Specifications, Interim General Conditions, Plans, and any and all addenda for:

Job No. DOAH26B
Kamuela Vacuum Cooling Plant,
Demolition of Inactive Vacuum Cooling Warehouse
Lalamilo Ahupua'a, South Kohala, Hawai'i Island

on file in the office of the Agricultural Resource Management Division for the TOTAL BASE BID (Items 1 to 7) of:

_____

_____Dollars ($_____)
and will fully complete all work under this contract within 180 consecutive calendar days from the date of written notice to proceed, including date of said order, said total sum being itemized on the following pages.

PROPOSAL
Kamuela Vacuum Cooling Plant,
Demolition of Inactive Vacuum Cooling Warehouse

BASE BID

Item No.	Estimated Quantity	Unit	Description	Unit Price	Total
1.		LS	Mobilization/Demobilization Not to exceed 10% of the total base bid price.	LS	$_____
2.		LS	Temporary Erosion Control (inclusive, but not limited to, NPDES permit requirements, roadway cleaning, and stabilized construction entrance)		$_____
3.		LS	Furnishing and paying for all labor, tools, equipment, and materials necessary for demolition, removal and disposal, not covered by Items 4 – 7 below, in accordance with the project plans and specifications, in place complete	LS	$_____
4.		LS	Furnishing and paying for all labor, tools, equipment, and materials necessary for removal and disposal of asbestos-containing materials, inclusive of required submittals, decontamination enclosure systems, in accordance with the project plans and specifications, in place complete	LS	$_____
5.		LS	Furnishing and paying for all labor, tools, and materials necessary for surface preparation and removal of lead-containing and lead-based paints, inclusive of TCLP testing of debris, in accordance with project plans and specifications, in place complete	LS	$_____
6.		LS	Furnishing and paying for all labor, tools, equipment, and materials necessary for handling, storage, transport and disposal of lead-containing and lead-based paint waste determined as hazardous	LS	$_____

			waste by TCLP testing to an approved EPA hazardous waste disposal site, in accordance with project plans and specifications, in place complete		
7.		LS	Furnishing and paying for all labor, tools, and materials necessary for surface preparation, removal, and disposal of mercury-containing fluorescent light tubes and light switches, in accordance with project plans and specifications, in place complete	LS	$_____
			Total – BASE BID (Items 1-7)		$_____

ADDITIVE ALTERNATE 1 – ACTIVE WAREHOUSE

Item No.	Estimated Quantity	Unit	Description	Unit Price	Total
8.	40	SF	Furnishing and paying for all labor, tools, and materials necessary patch and repair existing holes, cracks, penetrations, and gaps in metal siding.	$_____	$_____
9.		LS	Furnishing and paying for all labor, tools, and materials necessary to paint the entire building exterior wall surfaces including but not limited to siding, framing, trims, flashing, doors, bollards, and louvers.		$_____
10.		LS	Furnishing and paying for all labor, tools, and materials necessary for complete exterior surface preparation and removal of lead-containing and lead-based paints, in accordance with project plans and specifications		$_____
11.		LS	Furnishing and paying for all sampling, shipping, and laboratory analytical fees for TCLP testing of debris generated from exterior paint removal, in accordance with		$_____

			project plans and specifications		
12.		LS	Furnishing and paying for all labor, tools, equipment, and materials necessary for handling, storage, transport and disposal of exterior lead-containing and lead-based paint waste determined as hazardous waste by TCLP testing to an approved EPA hazardous waste disposal site, in accordance with project plans and specifications		$_____
			Total – ADDITIVE ALTERNATE 1 (Items 8-12)		$_____

RECAPITULATION

Total Base Bid (Items 1 to 7) $_____

Additive Alternate No. 1 (Items 8 to 12) $_____

TOTAL SUM BID (Items 1 to 12) $_____

RECYCLED PRODUCTS PREFERENCE

This project allows a 10% price preference for recycled products in accordance with HRS 103D-1005. Please indicate your recycled or non-recycled product by indicating its cost FOB jobsite unloaded in the schedule below, including applicable General Excise & Use Taxes.

DESCRIPTION	RECYCLED PRODUCT COST	NONRECYCLED PRODUCT COST
_____	$_____	$_____
_____	$_____	$_____
_____	$_____	$_____
_____	$_____	$_____

The bidder requesting a recycled product preference shall also complete and submit the form "CERTIFICATION OF RECYCLED CONTENT" as shown in the Interim General Conditions and provide all supporting information with this proposal. Additional information may be requested to qualify a product.

The following definitions are applicable to the CERTIFICATION OF RECYCLED CONTENT form:

"Post-consumer recovered material" means any product used by a consumer, including a business that purchases the material, that has served its intended end use, and that has been separated or diverted from the solid waste stream for the purpose of use, reuse, or recycling.

"Product" includes materials, manufactures, supplies, merchandise, goods, wares, and foodstuffs.

"Recovered material" means waste material and by-products that have been separated, diverted, or removed from the solid waste stream after a manufacturing process for the purpose of use, reuse, or recycling. Recovered material does not include those materials and by-products that are generated and normally reused on-site or within original manufacturing processes (such as mill broke, in the case of paper products).

"Recycled content" means the percentage of a product composed of recovered material, or post-consumer recovered material, or both.

"Recycled product" means a product containing recovered material, or post-consumer recovered material, or both.

The bidder agrees that preference for recycled products shall be taken into consideration to determine the low bidder in accordance with said Section and the rules promulgated, however, the award of contract will be in the amount of the bid offered exclusive any preference.

APPRENTICESHIP AGREEMENT PREFERENCE

1. If applicable to this project, any bidder seeking the preference must be a party to an apprenticeship agreement registered with the State Department of Labor and Industrial Relations (DLIR) at the time the bid is submitted for each apprenticeable trade the bidder will employ to construct the project. "Employ" means the employment of a person in an employer-employee relationship.

    a. The apprenticeship agreement shall be registered with the DLIR and confirm to the requirements of Hawaii Revised Statutes Chapter 372.
    b. Subcontractors do not have to be a party to an apprenticeship agreement for the bidder to obtain preference.
    c. The bidder is not required to have apprentices in its employ at the time the bid is submitted to qualify for the preference.

2. A bidder seeking the preference must state the apprenticeable trade the bidder will employ for each trade to be employed to perform the work by submitting a completed signed original Certification Form 1 verifying participation in an apprenticeship program registered with DLIR. "Apprenticeable trade" shall have the same meaning as "apprenticeable occupation" pursuant to Hawaii Administrative Rules (HAR) § 12-30-5.

    a. The Certification Form 1 shall be authorized by an apprenticeship sponsor listed on the DLIR list of registered apprenticeship programs. "Sponsor" means an operator of an apprenticeship program and in whose name the program is approved and registered with DLIR pursuance to HAR § 12-30-1.
    b. The authorization shall be an original signature by an authorized official of the apprenticeship sponsor.
    c. The completed signed original Certification Form 1 for each trade must be submitted with the bid. Previous certifications shall not apply.
    d. When filling out the Certification Form 1, the name of Apprenticeable Trade and Apprenticeship Sponsor must be the same as recorded in the List of Construction Trades in Registered Apprenticeship Programs that is posted on the DLIR website. "Registered apprenticeship program" means a construction trade program approved by DLIR pursuant to HAR § 12-301 and § 12-30-4.
    e. The Certification Form 1 and the List of Construction Trades in Registered Apprenticeship Programs is available on the DLIR website at: http://hawaii.gov/labor/wdd.

3. Upon receiving the Certification Form 1, the Procurement Officer will verify that the apprenticeship program is on the List of Construction Trades in Registered Apprenticeship Programs and that the form is signed by an authorized official of the Apprenticeship Program Sponsor. If the programs and signature are not confirmed by the DLIR, the bidder will not qualify for the preference.

4. If the bidder is certified to participate in an apprenticeship program for each trade which will be employed by the bidder for the project, a preference will be applied to decrease the bidder's bid amount by five percent (5%) for evaluation purposes.

5. Should the bidder qualify for other preferences, all applicable preference shall be applied to the bid price.

CONTRIBUTIONS BY STATE AND COUNTY CONTRACTORS PROHIBITED

Contractors are hereby notified of the applicability of Section 11-355, HRS, which states that campaign contributions are prohibited from specified State of county government contractors during the term of the contract if the contractors are paid with funds appropriated by a legislative body.

CONDITION OF AWARD

It is understood that the award of the contract will be made on the basis of the lowest responsible Total Base Bid (Items 1 to 7) selected by the Department of Agriculture.

It is understood and agreed that the Department of Agriculture reserves the right to reject any and/or all bids and waive any defects when, in the Board's opinion, such rejection or waiver will be for the best interest of the State of Hawaii.

In the event all bids exceed available funds certified by the appropriate fiscal officer, the head of the purchasing agency responsible for the procurement in question is authorized in situations where time or economic considerations preclude resolicitation of work of a reduced scope to negotiate an adjustment of the bid price, including changes in the bid requirements, with the low responsible and responsive bidder, in order to bring the bid within the amount of available funds. It is understood and agreed upon that the head of the purchasing agency may delete a portion or all of any item(s) in the proposal at the stated unit or lump sum price as necessary to stay within the available funding. The bidder is responsible to make an earnest effort to represent the actual cost of each item, including all materials, labor, equipment, overhead and profit in their bid proposal to preclude claims of anticipated profit or loss of profit because of an unbalanced bid proposal.

It is also understood that if a mutually agreeable cost for the reduced scope of work necessitated by a lack of available funds cannot be agreed upon between the bidder and the head of the purchasing agency within 14 calendar days after the bid opening, then the bid may be rejected in the best interest of the purchasing agency, and the head of the purchasing agency may negotiate in progressive order (lowest to highest) with the next lowest responsible and responsive bidder.

It is also understood and agreed that the award of the contract shall be conditioned upon funds being made available for this project and further upon the right of the Department of Agriculture to hold all bids received for a period of sixty (60) days from the date of the opening thereof, unless otherwise required by law, during which time no bid may be withdrawn.

It is also understood that Notice to Proceed may be delayed up to one (1) year after the bid opening date, and that no additional compensation will be provided for any claim for escalation or delay for issuance of Notice to Proceed on or before that date.

It is also understood and agreed that the quantities given herewith are approximate only and are subject to increase or decrease, and that the undersigned will perform all quantities of work as either increased or decreased, in accordance with the provisions of the Contract Specifications.

It is also understood and agreed that the estimated quantities shown for the items for which a UNIT PRICE is asked in this Proposal are only for the purpose of comparing on a uniform basis, bids offered for the work under this contract, and the undersigned agrees that he is satisfied with and will at no time, dispute said estimated quantities as a means of claims for anticipated profit or loss of profit, because of a difference between the quantities of the various classes of work done or the

materials and equipment installed, and the said estimated quantities. On UNIT PRICE bids, payment will be made only for the actual number of units incorporated into the finished project at the contract UNIT PRICE.

After the proposals are opened and read, the figures will be extended and/or totaled in accordance with the bid prices of the acceptable proposals and the totals will be compared. In the comparison of bids, words written in the proposal shall govern over figures and unit prices will govern over totals. Until the award of the contract, however, the right will be reserved to reject any and all proposals and to waive any defects or technicalities as may be deemed best for the interest of the State.

It is also understood and agreed that liquidated damages in the amount of FIVE HUNDRED AND NO/100 ($500.00) for each and every calendar day in excess thereof prior to completion of the contract shall be withheld from payments due to the Contractor.

It is also understood and agreed that if this bid is accepted, the successful bidder must enter into and execute a contract with the Department of Agriculture and furnish a Performance and Payment Bond, as required by law. These bonds shall conform to provisions of Section 103D-324 and 325, Hawaii Revised Statutes and any law applicable hereto.

It is also understood and agreed that the successful bidder will provide all necessary labor, materials, tools, equipment, and other incidentals necessary to do all the work and furnish all the materials specified in the contract in the manner and time herein prescribed, and according to the requirements of the Engineer as therein set forth.

It is understood that by submitting this proposal, the undersigned is declaring that his firm has not been assisted or represented on this matter by an individual who has, in a State capacity, been involved in the subject matter of this contract in the past two years.

It is understood that by submitting this proposal in accordance with HAR 3-122-192, the undersigned is declaring that the price submitted is independently arrived without collusion.

It is also understood that by submitting this proposal, a Certification for Safety and Health Programs for bids in excess of $100,000 (in accordance with HRS 396-18), the undersigned certifies that his organization will have a written safety and health plan for this project that will be available and implemented by the Notice to Proceed date of this project. Details of the requirements of this plan may be obtained from the Department of Labor and Industrial Relations, Occupational, Safety and Health Division (HIOSH).

It is further understood and agreed that the successful bidder shall comply with paragraph 3.1.a "SUBCONTRACTING" of the General Provisions which requires that the contractor shall perform with his own organization and with the assistance of workmen under his immediate superintendence, work of a value not less than twenty percent (20%) of the value of all work embraced in the Contract, except that certain contract items of work, if specifically referred to in the special provisions, will be exempted from said twenty percent requirement.

Compliance with §103-310 HRS. As a condition of award all bidders shall comply with all laws governing entities doing business in the State, including Chapter 237 HRS (general excise tax); Chapter 383 HRS (employment security – unemployment insurance); Chapter 386 HRS (workers compensation); Chapter 392 HRS (temporary disability insurance); and Chapter 393 HRS (pre-paid health care), and shall produce all documents to the State (DLNR, Engineering Division) required to demonstrate compliance with these subsections. Any bidder making a false affirmation or

certification under this subsection shall be suspended and may be debarred from further offerings or awards pursuant to §103D-702 HRS.

RECEIPT OF ADDENDA

The bidder also acknowledges receipt of any and all addenda issued by the Agricultural Resource Management Division, by recording the date of receipt of the respective addenda in the space provided below:

Addendum	Date Received	Addendum	Date Received
No. 1	_____	No. 5	_____
No. 2	_____	No. 6	_____
No. 3	_____	No. 7	_____
No. 4	_____	No. 8	_____

It is understood that failure to receive any such addendum shall not relieve the Contractor from any obligation under this Proposal as submitted.

It is also understood and agreed that if this Proposal is accepted and the undersigned should fail or neglect to contract as aforesaid, the State may determine that the bidder has abandoned the Contract, and thereupon, forfeiture of the security accompanying his proposal shall operate and the same shall become the property of the State.

JOINT CONTRACTORS OR SUBCONTRACTORS TO BE ENGAGED ON THIS PROJECT

The Bidder agrees that the following is a complete listing of all joint contractors or subcontractors covered under Chapter 444, Hawaii Revised Statutes (HRS), who will be engaged by the Bidder on this project to perform the required work indicated pursuant to Section 103D-302, HRS. It is the sole responsibility of the contractor to review the requirements of this Project and determine the appropriate licenses that are required to complete the Project. The Bidder certifies that the completed listing of joint contractors or subcontractors fulfills the requirements for the project and the Bidder, together with the listed subcontractors or joint contractors have all the specialty contractor's licenses to complete the work, except as provided for in HRS §103D-302(b). Failure of the Bidder to comply with this requirement may be just cause for rejection of the bid.

"A" General Engineering Contractors and "B" General Building Contractors are reminded that due to the Hawaii Supreme Court's January 28, 2002 decision in Okada Trucking Co., Ltd. v. Board of Water Supply, et al., 97 Haw. 450 (2002), they are prohibited from undertaking any work, solely or as part of a larger project, which would require the general contractor to act as a specialty contractor in any area in which the general contractor has no license. Although the "A" and "B" contractor may still bid on and act as the "prime" contractor on an "A" or "B" project (See, *HRS §*444-7 *for the definitions of an "A" and "B" project*.), respectively, the "A" and "B" contractor may only perform work in the areas in which they have the appropriate contractor's license (*An "A" or "B" contractor obtains "C" specialty contractor's licenses either on its own, or automatically under HAR § 16-77-32*). The remaining work must be performed by appropriately licensed entities.

General Engineering "A" Contractors automatically have these "C" specialty contractor's licenses: C-3, C-9, C-10, C-17, C-24, C-31a, C-32, C-35, C-37a, C-37b, C-38, C-43, C-49, C-56, C-57a, C-57b and C-61.

General Building "B" Contractors automatically have these "C" specialty contractor's licenses: C-5, C-6, C-10, C-12, C-24, C-25, C-31a, C-32a, C-42a and C-42b.

In completing the Joint Contractors or Subcontractors List, describe the specialty contractor's nature and scope of work to be performed for this project and provide the complete firm name of the joint

contractor or subcontractor in the respective columns. If the Bidder is a general contractor providing the work of a required specialty contractor, whose license is not automatically held pursuant to HAR 16-77-32, fill in the Bidder's (general contractor's) name and nature and scope of work to be performed on this project.

List only one joint contractor or subcontractor per required specialty contractor's classification, unless within the same specialty, the work of each joint contractor or subcontractor can be described so that there is no overlap in work descriptions.

If a contractor's license is required by law for the performance of the work which is called for in this bid, the bidder and all subcontractors must have the required license before the submission of the bidder's proposal in the case of a non-federal aid project, and for federal-aid projects, the bidder must have the required license prior to the award of the project and all subcontractors prior to the start of the subcontracted work.

COMPLETE FIRM NAME OF JOINT CONTRACTOR OR SUBCONTRACTOR	NATURE AND SCOPE OF WORK TO BE PERFORMED

Enclosed herewith is a:

1.	Surety Bond (*1)	)	
2.	Legal Tender (*2)	)	
3.	Cashier's Check (*3)	)	
4.	Certificate of Deposit (*3)	)	in the
5.	Certified Check (*3)	)	amount
6.	Official Check (*3)	)	of
7.	Share Certificate (*3)	)	
8.	Teller's Check (*3)	)	
9.	Treasurer's Check (*3)	)	

(Cross Out Those Not Applicable)

_____

_____Dollars ($_____)

as required by law.

Respectfully submitted,

_____
Name of Company, Joint Venture
or Partnership

_____
Contractor's License No.

By _____
Signature (*4)

Title _____
Print Name _____
Date _____
Address _____
_____
Telephone No. _____

E-Mail Address _____

NOTES:

1. Surety bond underwritten by a company licensed to issue bonds in this State;

2. Legal tender; or

3. A certificate of deposit; share certificate; or cashier's, treasurer's, teller's, or official check drawn by, or a certified check accepted by, and payable on demand to the State by a bank, a savings institution, or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration.

   A. These instruments may be utilized only to a maximum of $100,000.

   B. If the required security or bond amount totals over $100,000, more than one instrument not exceeding $100,000 each and issued by different financial institutions shall be accepted.

4. Please attach to this page evidence of the authority of this officer to submit bids on behalf of the Company and also the names and residence addresses of all officers of the Company.

5. Fill in all blank spaces with information asked for or bid may be invalidated. PROPOSAL MUST BE INTACT, MISSING PAGES MAY INVALIDATE YOUR BID.

End of Proposal

SPECIAL PROVISIONS

Amend INTERIM GENERAL CONDITIONS, dated October 1994, as follows:

Section 2 – Proposal Requirements and Conditions

1. **AMEND** Section 2.1 Qualification of Bidder with the following:

Written Notice of Intent to Bid or Offer: A written Notice of Intent to Bid is not required for the Solicitation.

Standard Qualification Questionnaire: Bidders may be required to complete a standard qualifications questionnaire. When requested, the information shall be furnished within two working days or longer at the discretion of the Engineer. Failure to furnish the requested information within the time allowed may be grounds for a determination of non-responsibility, in accordance with HRS Section 103D-310 and HAR Section 3-122-108.

Hawaii Business or Compliant Non-Hawaii Business Requirement: Bidders shall be incorporated or organized under the laws of the State or be registered to do business in the State as a separate branch or division that is capable of fully performing under the contract, as stipulated in §3-122-112 HAR. A certified letter is not required prior to bid opening.

Compliance with §3-122-112 HAR: As a condition for award of the contract and as proof of compliance with the requirements of 103D-310(c) HRS, the apparent low bidder shall furnish the required documents to the Department. If the valid required certificates are not submitted on a timely basis for award of a contract, a bidder otherwise responsive and responsible may not receive the award. Bidder is responsible to apply for and submit the following documents to the Department.

A. Tax Clearance (HRS Chapter 237): Bidder shall obtain a tax clearance certificate from the Hawaii State Department of Taxation (DOTAX) and the Internal Revenue Service (IRS). The certificate is valid for six months from the most recently approved stamp date on the certificate; the certificate must be valid on the date received by the Department.

B. Department of Labor (DLIR) "Certificate of Compliance". (HRS Chapter 383 - Unemployment Insurance, Chapter 386 - Workers' Compensation, Chapter 392 - Temporary Disability Insurance, and 393 – Prepaid Health Care): Bidder shall obtain a certificate of compliance from the Hawaii State Department of Labor and Industrial relations (DLIR). The certificate is valid for six months from the date of issue; certificates must be valid on the date received by the Department.

C. Department of Commerce and Consumer Affairs (DCCA), Business Registration Division (BREG) "Certificate of Good Standing". Bidder shall obtain a certificate of good standing issued by the Department of Commerce and Consumer Affairs (DCCA), Business Registration Division (BREG). The certificate of good standing is valid for six months from the date of issue; certificates must be valid on the date received by the Department.

Hawaii Compliance Express. Alternately, instead of separately applying for these certificates at the various state agencies, bidder may choose to use the Hawaii Compliance Express (HCE), which allows businesses to register online through a simple wizard interface at http://vendors.ehawaii.gov to acquire a "Certificate of Vendor compliance" indicating that bidder's status is compliant with requirements of §103D-310(c), HRS, shall be accepted for contracting and final payment purposes.
Bidders that elect to use the new HCE services will be required to pay an annual fee of $15.00 to the Hawaii Information Consortium, LLC (HIC). Bidders choosing not to participate in the HCE program will be

required to provide the paper certificates as instructed in the previous paragraphs.

2. **ADD** Section 2.4a, Pre-Bid Conferences

Required Pre-bid Conferences: For construction and design-build projects with an estimated value of $500,000 or more and solicited under the competitive sealed bid method (103D-302 HRS); and for construction and design-build projects with an estimated value of $100,000 or more and solicited under the competitive sealed proposal method (103D-303 HRS); a pre-bid conference is required.

Other Pre-Bid Conferences: The Department may require a pre-bid conference for construction or design-build projects that are below the dollar threshold listed in above or when projects have special or unusual requirements.

Other Conditions: The Department may require the prospective Bidders to make a physical inspection of the project site and make attendance at the pre-bid conference a condition for submitting an offer.

Nothing stated at the pre-bid conference shall change the solicitation unless a change is made by written addendum.

3. **DELETE** Section 2.5, Addenda and Interpretations, in its entirety and replace with the following:

"Discrepancies, omissions, or doubts as to the meaning of drawings and specifications should be communicated using the question and answer section on the HIePRO solicitation for interpretation and must be received in the time frame set in the HIePRO solicitation. Any interpretation, if made and any supplemental instructions will be in the form of written addenda to the plans and specifications and made available prior to the offer due date. It shall be the prospective bidder's sole responsibility to verify and obtain any said addenda. Failure of any bidder to receive any such addendum or interpretation shall not relieve such bidder from any obligation under his bid as submitted. All addenda so issued shall become part of the contract documents."

Section 3 – Award and Execution of Contract

1. **AMEND** Section 3.3, Award of Contract, by deleting "sixty (60)" and replacing with "ninety (90)" in the first paragraph.

2. **AMEND** Section 3.3, Award of Contract, by adding the following after the first paragraph:

"If the contract is not awarded within the ninety (90) days, the Department may request the successful Bidder to extend the time for the acceptance of its bid. The Bidder may reject such a request without penalty; and in such case, the Department may at its sole discretion make a similar offer to the next lowest responsive and responsible bidder and so on until a bid is duly accepted or until the Department elects to stop making such requests."

3. **AMEND** Section 3.9, Notice to Proceed, by deleting "180 days" and replacing with "one (1) year" in the last paragraph.

4. **ADD** Section 3.10, Protests:

"**3.10 PROTESTS**—Pursuant to Section 103D-701, Hawaii Revised Statutes, an actual or prospective offeror who is aggrieved in connection with the solicitation or award may submit a protest. Any protest shall be submitting in writing to the Chairperson, Department of Land and Natural Resources, 1151

Punchbowl Street, Honolulu, Hawaii 96813, or designee as specified in the solicitation.

A protest shall be submitted in writing within five (5) working days after the aggrieved person knows or should have known the facts giving rise thereto; provided that a protest based upon the content of the solicitation shall be submitted in writing prior to the date set for receipt of offers. Further provided that a protest of an award or proposed award shall be submitted within five (5) working days after the posting of the award of the contract.

Section 5 – Control of Work

AMEND Section 5.8 Value Engineering Incentive by deleting "$100,000" and replacing with "$250,000" in the first paragraph.

Section 6 – Substitution of Materials and Equipment

ADD the following to Section 6.3 Sub-paragraph b:

4. If the substitution meets all the requirements of the specifications and plans.

Section 7 – Prosecution and Progress

1. **DELETE** Section 7.2d in its entirety and replace with the following:

"d. Insurance Requirements

1. Obligation of Contractor

The Contractor shall not commence any work until it obtains, at its own expense, all required insurance. Such insurance must have the approval of the Department as to limit, form and amount and must be maintained with a company authorized by law to issue such insurance in the State of Hawaii.

All insurance described herein will be maintained by the Contractor for the full period of the contract and in no event will be terminated or otherwise allowed to lapse prior to written certification of final acceptance of the work by the Department.

Certificate(s) of Insurance acceptable to the Department shall be filed with the Engineer prior to commencement of the work. These certificates shall contain a provision that coverages afforded under the policies will not be canceled or changed until at least thirty days written notice has been given to the Engineer by registered mail. The insurance policies shall name the State of Hawaii, its officers and employees as an additional insured and such coverage shall be noted on the Certificate. Should any policy be canceled before final acceptance of the work by the Department, and the Contractor fails to immediately procure replacement insurance as specified, the Department, in addition to all other remedies it may have for such breach, reserves the right to procure such insurance and deduct the cost thereof from any money due to the Contractor.

Nothing contained in these insurance requirements is to be construed as limiting the extent of Contractor's responsibility for payment of damages resulting from its operations under this contract, including the Contractor's obligation to pay liquidated damages, nor shall it affect the Contractor's separate and independent duty to defend, indemnify and hold the Department

harmless pursuant to other provisions of this contract. In no instance will the Department's exercise of an option to occupy and use completed portions of the work relieve the Contractor of its obligation to maintain the required insurance until the date of final acceptance of the work.

All insurance described herein shall cover the insured for all work to be performed under the contract, all work performed incidental thereto or directly or indirectly connected therewith, including traffic detour work or other work performed outside the work area, and all change order work.

The Contractor shall, from time to time, furnish the Engineer, when requested, satisfactory proof of coverage of each type of insurance required or a copy of the actual policies covering the work. Failure to comply with the Engineer's request may result in suspension of the work, and shall be sufficient grounds to withhold future payments due the Contractor and to terminate the contract for Contractor's default.

2. Types of Insurance

The Contractor shall purchase and maintain insurance described below which shall provide coverage against claims arising out of the Contractor's operations under the contract, whether such operations be by the Contractor itself or by the subcontractor or by anyone directly or indirectly employed by any of them or by anyone for whose acts any of them may be liable.

(a) Worker's Compensation. The Contractor and all subcontractors shall obtain full worker's compensation insurance coverage for all persons whom they employ or may employ in carrying out the work under this contact. This insurance shall be in strict conformity with the requirements of the most current and applicable State of Hawaii Worker's Compensation Insurance laws in effect on the date of the execution of this contract and as modified during the duration of the contract.

(b) Commercial General Liability Insurance and Automobile Insurance. Contractor's commercial general liability insurance and automobile liability insurance shall both be obtained in a combined, single limit of not less than $1,000,000 per occurrence that shall include coverage for bodily injury, sickness, disease or death of any person, arising directly or indirectly out of, or in connection with, the performance of work under this contract.

The Contractor's property damage liability insurance shall provide for a single combined limit of not less than $1,000,000 for all damages arising out of injury to or destruction of property of others including the Department's, arising directly or indirectly out of or in connection with the performance of the work under this contract including explosion or collapse.

The Contractor shall either:

i. Require each of its subcontractors to procure and to maintain during the life of its subcontract, subcontractors' comprehensive general liability, automobile liability and property damage liability insurance of the type and in the same amounts specified herein; or

ii. Insure the activities of its subcontractors in its own policy.

The Contractor will be permitted, in cooperation with insurers, to maintain a self insured

retention for up to 25% of the per occurrence combined single limits of the commercial general liability and the automobile liability policies. The existence of the self insured retention must be noted on the certificate of insurance coverage submitted to the Department or else it will be understood that the insurer is providing first dollar coverage for all claims. For all claims within the self-insured retention amount, the rights, duties and obligations between the Contractor and the Department shall be identical to that between a liability insurer and the Department, as an additional insured, as if there was no self-insured retention.

(c) Builder's Risk Insurance. Unless included in the Specifications of this project, the Contractor shall not be required to provide builder's risk insurance. If required as noted in the Specifications, builder's risk insurance shall be provided during the progress of work and until final acceptance by the Department upon completion of the contract. It shall be "All Risk" (including but not limited to earthquake, windstorm and flood damage) completed value insurance coverage on all completed work and work in progress to the full replacement value thereof. Such insurance shall include the Department as additional name insured. The Contractor shall submit to the Engineer for its approval all items deemed to be uninsurable. The policy may provide for a deductible in an amount of up to 25% of the amount insured by the policy. With respect to all losses up to any deductible amount, the relationship between the Contractor and the Department shall be that of insurer and additional insured as if no deductible existed".

2. **DELETE** Section 7.16 in its entirety and replace with the following:

"RESPONSIBILITY FOR DAMAGE CLAIMS; INDEMNITY – The Contractor shall indemnify the State and the Department against all loss of or damage to the State's or the Department's existing property and facilities arising out of any act or omission committed in the performance of the work by the Contractor, any subcontractor or their employees and agents. Contractor shall defend, hold harmless and indemnify the Department and the State, their employees, officers and agents against all losses, claims, suits, liability and expense, including but not limited to attorneys' fees, arising out of injury to or death of persons (including employees of the State and the Department, the Contractor or any subcontractor) or damage to property resulting from or in connection with performance of the work and not caused solely by the negligence of the State or the Department, their agents, officers and employees. The State or the Department may participate in the defense of any claim or suit without relieving the Contractor of any obligation hereunder. The purchase of liability insurance shall not relieve the Contractor of the obligations described herein.

The Contractor agrees that it will not attempt to hold the State and its Departments and Agencies and their officers, representatives, employees or agents, liable or responsible for any losses or damages to third parties from the action of the elements, the nature of the work to be done under these specifications or from any unforeseen obstructions, acts of God, vandalism, fires or encumbrances which may be encountered in the prosecution of the work.

The Contractor shall pay all just claims for materials, supplies, tools, labor and other just claims against the Contractor or any subcontractor in connection with this contract and the surety bond will not be released by final acceptance and payment by the Department unless all such claims are paid or released. The Department may, but is not obligated to, withhold or retain as much of the monies due or to become due the Contractor under this contract considered necessary by the Engineer to cover such just claims until satisfactory proof of payment or the establishment of a payment plan is presented.

The Contractor shall defend, indemnify and hold harmless the State and its Departments and Agencies and

their officers, representatives, employees or agents from all suits, actions or claims of any character brought on account of any claims or amounts arising or recovered under the Worker's Compensation Laws or any other law, by-law, ordinance, order or decree.

Section 8 – Measurement and Payment

1. **DELETE** Section 8.7a in its entirety and replace with the following:

a. Tax Clearances from the State of Hawaii Department of Taxation and Internal Revenue Service, subject to section 103D-328, HRS, current within two months of issuance date indicating that all delinquent taxes levied or accrued under State Statutes against the contractor have been paid.

2. **ADD** Section 8.7d, Certificate of Compliance:

d. A Certification from the Contractor affirming that the Contractor has, as applicable, remained in compliance with all laws as required by Section 103D-310, HRS, and Section 3-122-112, HAR. A contractor making a false affirmation shall be suspended and may be debarred pursuant to section 103D-702, HRS.

1. Certification of Compliance for Final Payment, State Procurement Office Form-22. Must be Signed Original.

3. **ADD** Section 8.7e, Hawaii Compliance Express:

e. In lieu of submitting the tax clearances from Taxation and IRS, and SPO Form -22, the Contractor may choose to use the Hawaii Compliance Express as described on page SP-1 of this Special Provisions.

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TABLE CONTENTS (cont.)

SECTION 01019

GENERAL SPECIFICATIONS

PART 1 -– GENERAL

1.1 GENERAL REQUIREMENTS

Work shall consist of furnishing all labor, tools, materials and equipment necessary and required to construct in place complete all work as indicated on the drawings and as specified herein.

1.2 GENERAL

A. Examination of Premises: The Contractor shall contact the Engineer and obtain permission before visiting the site.

B. All lines and grades shall be established by a licensed surveyor, or licensed Civil Engineer, registered in the State of Hawaii. The Contractor shall submit evidence of current and valid registration.

C. Notices: The Contractor shall notify the Engineer and give at least three (3) working days notice before starting any work.

D. Disruption of Utility Services: All work related to the temporary disconnection of electrical or water (potable or non-potable) system shall be pre-arranged with the Engineer so that any disruption of such services will be kept to a minimum. In the event temporary power or water hook-up is required, the Contractor shall provide the necessary services.

E. Contractor's Operations

1. The Contractor must employ, insofar as possible, such methods and means of carrying out the work so as not to cause any interruption or interference to the facility's operations. Where the Contractor's operations would result in interruptions which would hamper the operations of the facilities, the Contractor shall rearrange the schedule of work accordingly.

2. The Contractor shall maintain safe passageway to and from the facility for the user agency personnel and the public at all times.

3. The Contractor shall be aware of the existing aviation easement and shall carefully read and strictly comply with the requirements of the Hawaii Administrative Rules, Title 19, Chapter 12, Section 7, as amended, is applicable and made a part of the Contract.

F. Lead Paint

1. When the project includes paint to be disturbed that was applied prior to 1980, it shall be assumed to contain lead. The Contractor shall inform its employees, subcontractors, and all other persons engaged in the project that lead containing paints are present in the existing buildings at the job site and to follow the requirements of the Department of Labor and Industrial Relations, Division of Occupational Safety and Health, Title 12, Subtitle 8,Chapter 148, Lead Exposure in Construction, Hawaii Administrative Rules (Chapter 12-148, HAR).

G. Parking Policy for Contractor

1. The Contractor and its employees will not be allowed to park in zones assigned to facility personnel.

2. Areas to be used by the Contractor shall be as designated by the Engineer. Any lawn damaged by the Contractor shall be restored as instructed by the Engineer at no cost to the State.

H. Toilet Accommodations: The Contractor shall provide their own toilet facilities.

I. Protection of Property: The Contractor shall continually maintain adequate protection of all its work from damage and shall protect all property, including but not limited to buildings, equipment, furniture, grounds, vegetation, material, utility systems located at and adjoining the job site. The Contractor shall repair, replace or pay the expense of repair of damages resulting from its operations.

J. Use of Power Driven Equipment: The Contractor is cautioned to take all necessary safety precautions to protect the facility personnel, and the public whenever power driven equipment is used.

K. Safety: The Contractor shall carefully read and strictly comply with the requirements of the Hawaii Occupational Safety and Health Law, Chapter 396, Hawaii Revised Statutes, as amended, is applicable and made a part of the Contract.

L. Clean Up Premises: The Contractor shall clean up and remove from premises all debris accumulated from operations as necessary or as directed. See also Section 7.25 of the General Conditions.

M. Responsibility

1. The State will hold the Contractor liable for all the acts of Subcontractors and shall deal only with the prime Contractor in matters pertaining to other trades employed on the job. The Contractor shall be responsible for coordinating the work of all trades on the job.

2. Should the Contractor discover any discrepancy in the plans or specifications, the

Contractor shall immediately notify the Engineer before proceeding any further with the work, otherwise, the Contractor will be held responsible for any cost involved in correction of work placed due to such discrepancy.

N. Cooperation With Other Contractors: The State reserves the right at any time to contract for or otherwise perform other or additional work within the contract zone limits of this Contract. The Contractor of this project shall, to the extent ordered by the State, conduct its work so as not to interfere with or hinder the progress or completion of the work performed by other contractors.

O. Division of the Work: The Divisions and Sections into which these Specifications are divided shall not be considered an accurate or complete segregation of work by trades. This also applies to all work specified within each Section.

P. Drawings and Specifications

1. The Contractor shall not make alterations in the drawings and specifications. In the event the contractor discovers any errors or discrepancies, the Contractor shall immediately notify the Engineer in accordance with the General Conditions.

2. Where devices, or items, or parts thereof are referred to in the singular, it is intended that such reference shall apply to as many such devices, items or parts as are required to properly complete the work.

3. Specifications and drawings are prepared in abbreviated form and include incomplete sentences. Omission of words or phrases such as "the Contractor shall", "as shown on the drawings", "a", "an", and "the" are intentional. Omitted words and phrases shall be provided by inference to form complete sentences.

Q. Approvals

1. Contractor shall obtain Department of Land and Natural Resources, State Historic Preservation Division (SHPD) approval prior to the start of construction at no cost to the State.

R. Required Submittals

1. Required submittals as specified in the Technical Sections of these specifications include one or more of the following: Shop drawings; color samples; material samples; technical data; schedules of materials; schedules of operations; guarantees; operating and maintenance manuals; and as-built drawings.

2. The Contractor shall submit a project schedule within 15 days after notice to proceed, that the Contractor will follow. A three week look ahead schedule shall be provided every week to the Engineer. The Contractor must notify the Engineer, of any potential delays in the schedule, and provide corrective action to stay on

schedule, accepted by the Engineer.

3. The Contractor shall make a comprehensive list of the required submittals, by Specification Section, and submit this list to the Engineer within 15 days after notice to proceed.

4. As-Built Drawings: When as-built drawings are required for submittal, the following shall apply:

   a. As-built drawings, the intent of which is to record the actual in-place construction so that any future renovations or tie-ins can be anticipated accurately, shall be required.

   b. All deviations from alignments, elevations and dimensions which are stipulated on the plans shall be recorded in red on the as-built drawings.

   c. The following procedure shall be followed:

      1) Immediately after these changes are constructed in place, the Contractor shall record them on the field office plans.

      2) Within two weeks after final inspection of the project, the Contractor shall transfer the changes marked on the field office plans onto a clean copy of plans using a red pencil. Any deletions shall be so noted and redrawn as necessary. The Contractor shall stamp or mark the tracings "AS-BUILT", and also sign and date each drawing so marked.

      3) The Contractor shall submit the as-built drawings to the Engineer for review and approval. After the Engineer approves the as-built drawings, the Contractor shall submit an electronic copy in Adobe PDF format on CD ROM.

      4) Any as-built drawing which the Engineer determines does not accurately record the deviation shall be corrected by the State, and the Contractor shall be charged for the services.

1.3 REFERENCE CONSTRUCTION STANDARDS

The reference construction standards shall supplement the requirements of these specifications. Where there is a conflict between the reference standards and the project specifications, the project specification shall govern. The following reference construction standards, including addendums and revisions, are hereby incorporated into and made a part of these specifications and shall be applicable to all work performed by the Contractor:

A. “Hawaii Standard Specifications for Road and Bridge Construction” dated 2005, including all special provisions, State of Hawaii, Department of Transportation, Highways Division.

1. Paragraphs relating to Measurement and Payment in the Sections are not applicable to this project.

B. "Water System Standards" dated 2002, of the Board of Water Supply and Department of Water Supply, for the counties of Kauai, Maui, Hawaii and Honolulu.

1. Paragraphs relating to Measurement and Payment in the Sections are not applicable to this project.

2. Where an installation detail is not indicated on the drawings, the standard detail in the “Standard Details for Water System Construction, Vol. 2” including all revisions and addendums shall be followed.

END OF SECTION

SECTION 01090

STANDARD REFERENCES

PART 1 -– GENERAL

Wherever used in the project, the following abbreviations will have the meanings listed:

Abbreviation	Company
AA	Aluminum Association Incorporated 818 Connecticut Avenue, N.W. Washington, D.C. 20006
AASHTO	American Association of State Highway and Transportation Officials 444 North Capitol Street, N.W., Suite 225 Washington, D.C. 20001
ACI	American Concrete Institute P.O. Box 19150 Detroit, MI
AEIC	Association of Edison Illuminating Companies 51 East 42nd Street New York, NY 10017
AFBMA	Anti-Friction Bearing Manufacturer's Association 60 East 42nd Street New York, NY 10017
AGA	American Gas Association 8501 East Pleasant Valley Road Cleveland, OH 44131
AGMA	American Gear Manufacturer's Association 1330 Massachusetts Avenue, N.W. Washington, D.C.
AISC	American Institute of Steel Construction 101 Park Avenue New York, NY 10017
AISI	American Iron and Steel Institute 1000 16th Street, N.W. Washington, D.C. 20036
AITC	American Institute of Timber Construction

Abbreviation	Company
	333 West Hampden Avenue Englewood, CO 80110
AMCA	Air Moving and Conditioning Association, Inc. 30 West University Drive Arlington Heights, IL 60004
ANSI	American National Standards Institute, Inc. 1430 Broadway New York, NY 10018
APA	American Plywood Association 1119 A Street Tacoma, WA 98401
API	American Petroleum Institute 1801 K Street N.W. Washington, DC 20006
ARI	Air-Conditioning and Refrigeration Institute 1814 North Fort Myer Drive Arlington, VA 22209
ASCE	American Society of Civil Engineers 345 East 47th Street New York, NY 10017
ASCII	American Standard Code for Information Interchange United States of America Standards Institute 1430 Broadway New York, NY 10018
ASE Code	American Standard Safety Code for Elevators, Dumbwaiter and Escalators American National Standards Institute 1430 Broadway New York, NY 10018
ASHRAE	American Society of Heating, Refrigeration and Air Conditioning Engineers United Engineering Center 345 East 47th Street New York, NY 10017
ASME	American Society of Mechanical Engineers 345 East 47th Street

Abbreviation	Company
	New York, NY 10017
ASTM	American Society for Testing and Materials 1916 Race Street Philadelphia, PA 19103
AWPA	American Wood Preservers Association 1625 Eye Street Washington, DC 20006
AWS	American Welding Society 2501 N.W. 7th Street Miami, FL 33125
AWWA	American Water Works Association 6666 West Quincy Avenue Denver, CO 80235
CBM	Certified Ballast Manufacturers 2120 Keith Building Cleveland, OH 44115
CMAA	Crane Manufacturers Association of America, Inc. (Formerly called: Overhead Electrical Crane Institute - OECI) 1326 Freeport Road Pittsburgh, PA 15238
CRSI	Concrete Reinforcing Steel Institute 180 North La Salle Street Chicago, IL 60601
CSA	Canadian Standards Association 178 Rexdale Boulevard Rexdale, Ontario, M9W IR3, Canada
DEMA	Diesel Engine Manufacturer's Association 122 East 42nd Street New York, NY 10017

Abbreviation	Company
DIS	Division of Industrial Safety California Department of Industrial Relations 2422 Arden Way Sacramento, CA 95825
EEI	Edison Electric Institute 90 Park Avenue New York, NY 10016
EIA	Electronic Industries Association 2001 Eye Street N.W. Washington, DC 20006
EJMA	Expansion Joint Manufacturer's Association 331 Madison Avenue New York, NY 10017
ESO	Electrical Safety Orders, California Administrative Code, Title 8, Chap. 4, Subarticle 5 Office of Procurement, Publications Section P.O. Box 20191 8141 Elder Creek Road Sacramento, CA 95820
FEDSPEC	Federal Specifications General Services Administration Specification and Consumer Information Distribution Branch Washington Navy Yard, Bldg. 197 Washington, DC 20407
FEDSTDS	Federal Standards (see FEDSPECS)
FM	Factory Mutual Research 1151 Boston-Providence Turnpike Norwood, MA 02062
HEI	Heat Exchange Institute 122 East 42nd Street New York, NY 10017
HI	Hydraulic Institute

Abbreviation	Company
	1230 Keith Building Cleveland, OH 44115
IAPMO	International Association of Plumbing and Mechanical Officials 5032 Alhambra Avenue Los Angeles, CA 90032
ICBO	International Conference of Building Officials 5360 South Workman Mill Road Whittier, CA 90601
ICEA	Insulated Cable Engineers Association P.O. Box P South Yarmouth, MA 02664
IEEE	Institute of Electrical and Electronics Engineers, Inc. 345 East 47th Street New York, NY 10017
IES	Illuminating Engineering Society C/O United Engineering Center 345 East 47th Street New York, NY 10017
ISA	Instrument Society of America 400 Stanwix Street Pittsburgh, PA 15222
JIC	Joint Industrial Council 7901 Westpark Drive McLean, VA 22101
MILSPEC	Military Specifications Naval Publications and Forms Center 5801 Tabor Avenue Philadelphia, PA 19120
MSS	Manufacturers Standardization Society of the Valve and Fittings Industry, Inc. 127 Park Street, N.E. Vienna, VA 22180

Abbreviation	Company
NAAMM	National Association of Architectural Metal Manufacturers 100 South Marion Street Oak Park, IL 60302
NACE	National Association of Corrosion Engineers P.O. Box 986 Katy, TX 77450
NEC	National Electric Code National Fire Protection Association 470 Atlantic Avenue Boston, MA 02210
NEMA	National Electrical Manufacturer's Association 155 East 44th Street New York, NY 10017
NESC	National Electric Safety Code American National Standards Institute 1430 Broadway New York, NY 10018
NFPA	National Forest Products Association (Formerly called: National Lumber Manufacturer's Association) 1619 Massachusetts Avenue, N.W. Washington, DC 20036
OSHA	Occupational Safety and Health Act U.S. Department of Labor San Francisco Regional Office 450 Golden Gate Avenue, Box 36017 San Francisco, CA 94102
PPIC	The Plumbing & Piping Industry Council, Inc. Suite 402 510 Shatto Place Los Angeles, CA 90020
SAE	Society of Automotive Engineers 2 Pennsylvania Street New York, NY 10001

Abbreviation	Company
SAMA	Scientific Apparatus Makers Association One Thomas Circle Washington, DC 20005
SBCC	Southern Building Code Congress 1116 Brown-Marx Building Birmingham, AL 35203
SMACNA	Sheet Metal and Air Conditioning Contractors National Association, Inc. 8224 Old Courthouse Road Tysons Corner Vienna, VA 22180
SSPWC	Standard Specifications for Public Works Construction Building News, Inc. 3055 Overland Avenue Los Angeles, CA 90034
TEMA	Tubular Exchanger Manufacturer's Association 331 Madison Avenue New York, NY 10017
UBC	Uniform Building Code Published by ICBO
UL	Underwriters Laboratories Inc. 207 East Ohio Street Chicago, IL 60611
UMC	Uniform Mechanical Code Published by ICBO
UPC	Uniform Plumbing Code Published by IAPMO
USBR	Bureau of Reclamation U.S. Department of Interior Engineering and Research Center Denver Federal Center, Building 67 Denver, CO 80225
WWPA	Western Wood Products Association (Formerly called: West Coast Lumberman's Association - WCLA) Yeon Building Portland, CA 97204

PART 2 -– PRODUCTS (NOT USED)

PART 3 -– EXECUTION (NOT USED)

- END OF SECTION -

SECTION 01300

SUBMITTALS

PART 1 -– GENERAL

1.1 SUBMITTALS

A. Shop drawings shall be required for as called for in the plans, specifications or by the Engineer.

B. Other required submittals shall include:

1. Piping Layout.

2. Manufacturer's Data.

3. Certificates of Warranty.

4. Any others as called for in the plans, specifications, or by the Engineer.

1.2 BIDDER'S SPECIAL RESPONSIBILITY FOR COORDINATING CONTRACTUAL WORK AND SUBMITTALS:

A. The Contractor is responsible for the coordination of all contractual work and submittals.

B. The Contractor shall have a rubber stamp made up in the following format:

CONTRACTOR NAME

PROJECT: _____

_____

JOB NO: _____

THIS SUBMITTAL HAS BEEN CHECKED BY THIS GENERAL CONTRACTOR. IT IS CERTIFIED CORRECT, COMPLETE, AND IN COMPLIANCE WITH CONTRACT DRAWINGS AND SPECIFICATIONS. ALL AFFECTED CONTRACTORS AND SUPPLIERS ARE AWARE OF, AND WILL INTEGRATE THIS SUBMITTAL INTO THEIR OWN WORK.

DATE RECEIVED _____
SPECIFICATION SECTION _____
SPECIFICATION PARAGRAPH _____
DRAWING NUMBER_____
SUBCONTRACTOR NAME _____

SUPPLIER NAME _____

MANUFACTURER NAME _____

CERTIFIED BY: _____

C. This stamp, "filled in", should appear on the title sheet of each shop drawing, on a cover sheet of submittals in an 8-1/2" x 11" format, or on one face of a cardstock tag (min. 3" x 6") tied to each sample. The tag on the samples should state what the sample is so that, if the tag is accidentally separated from the sample, it can be matched up again. The back of this tag will be used by the Engineer for his receipt, review, and log stamp and for any comments that relate to the sample.

D. All submittals for material, equipment, and shop drawings listed in the contract documents, including dimensioned plumbing shop drawings, shall be required and shall be reviewed by the Engineer, prior to any ordering of materials and equipment.

E. Unless otherwise noted, the Contractor shall submit to the Engineer for his review eight copies of all shop drawings, piping layout, and/or catalog cuts for fabricated items and manufactured items (including mechanical and electrical equipment) required for the construction. Drawings shall be submitted in sufficient time to allow the Engineer not less than twenty regular working days for examining the drawings.

F. The drawing shall be accurate, distinct, and complete and shall contain all required information, including satisfactory identification of items, units and assemblies in relation to the contract drawings and specifications.

G. Unless otherwise approved by the Engineer, shop drawings shall be submitted only by the Contractor, who shall indicate by a signed stamp on the drawings or other approved means that the Contractor has checked the shop drawings and that the work or equipment shown is in accordance with contract requirements and has been checked for dimensions and relationship with work of all other trades involved. All deviations from the plans and specifications shall be listed. The practice of submitting incomplete or unchecked shop drawings for the Engineer to correct or finish will not be acceptable, and shop drawings which, in the opinion of the Engineer, clearly indicate that they have not been checked by the Contractor will be considered as not complying with the intent of the contract documents and will be returned to the Contractor for resubmission in the proper form.

H. When the shop drawings have been reviewed by the Engineer, two sets of submittals will be returned to the Contractor appropriately stamped. If major changes or corrections are necessary, the drawing may be rejected and one set will be returned to the Contractor with such changes or corrections indicated, and the Contractor shall correct and resubmit eight copies of the drawings, unless otherwise directed by the Engineer. No changes shall be made by the Contractor to the resubmitted shop drawings other than those changes indicated by the Engineer. The resubmittal shall be so indicated on the shop drawing.

I. The review of such drawings and catalog cuts by the Engineer shall not relieve the Contractor from responsibility for correctness of the dimensions, fabrication details, and space requirements or for deviations from the contract drawings and specifications, unless the Contractor has called attention to such deviations, in writing, by a letter accompanying the drawings and the Engineer approved the change or deviations, in writing, at the time of submission; nor shall review by the Engineer relieve the Contractor from the responsibility for errors in the shop drawings. When the Contractor does call such deviations to the attention of the Engineer, he shall state in his letter whether or not such deviations involve any deduction or extra cost adjustment.

J. The approval of the above drawings, lists, prints, specifications, or other data shall in no way release the Contractor from his responsibility for the proper fulfillment of the requirements of this contract nor for fulfilling the purpose of the installation nor from his liability to replace the same should it prove defective or fail to meet the specified requirements.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01505

MOBILIZATION AND DEMOBILIZATION

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

A. Description: This section covers the requirements for mobilization and demobilization.

1.2 MOBILIZATION: Mobilization shall consist of the transporting, assembling, constructing, installing, and making ready for use at the job site, all the equipment, machinery, structures, utilities, materials, labor, and incidentals necessary to do the work covered by this contract.

1.3 DEMOBILIZATION: Demobilization shall consist of the dismantling and removal of the above-mentioned equipment, machinery, structures, utilities, materials, and incidentals, and the cleaning up of the site.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 GUIDELINES: If the Contractor utilizes private lands other than the sites provided by the Department for mobilization purposes, the provisions of this section shall apply, and the mobilization and demobilization work on said private lands shall be in accordance with the agreement between the Contractor and the land owner.

Any and all additional mobilization or demobilization costs in excess of the maximum amounts specified in the Proposal shall be included in the appropriate unit prices bid in the Proposal. The Contractor shall not receive any compensation for mobilization and demobilization in addition to those specified in the Proposal.

All equipment, machinery, buildings, utilities and incidentals mobilized and demobilized under this section shall remain the property of the Contractor.

END OF SECTION

SECTION 01567

POLLUTION CONTROL

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

A. Rubbish Disposal

1. No burning of debris and/or waste materials shall be permitted on the project site.

2. No burying of debris and/or waste material except for materials which are specifically indicated elsewhere in these specifications as suitable for backfill shall be permitted on the project site.

3. All debris and waste material shall be hauled away to a permitted solid waste management facility allowed and willing to accept such waste or out of state disposal facility. During loading operations, debris and waste materials shall be watered down to allay dust.

4. No dry sweeping shall be permitted in cleaning rubbish and fines which can become airborne from floors or other paved areas. Vacuuming, wet mopping or wet or damp sweeping is permissible.

5. Clean-up shall include the collection of all waste paper and wrapping materials, cans, bottles, construction waste materials and other objectionable materials, and removal as required. Frequency of clean-up shall coincide with rubbish producing events.

B. Dust

1. The Contractor shall prevent dust from becoming airborne at all times including non-working hours, weekends and holidays in conformance with the State Department of Health, Administrative Rules, Title 11, Chapter 60.1 - Air Pollution Control.

2. The method of dust control and costs shall be the responsibility of the Contractor. Methods of dust control shall include the use of water, chemicals or asphalt over surfaces which may create airborne dust.

3. The Contractor shall be responsible for all damage claims in accordance with Section 7.16 - "Responsibility for Damage Claims" of the GENERAL CONDITIONS.

C. Noise

1. Noise shall be kept within acceptable levels at all times in conformance with the State Department of Health, Administrative Rules, Title 11, Chapter 46 - Community Noise Control. The Contractor shall obtain and pay for the Community Noise Permit from the State Department of Health when the construction equipment or other devices emit noise at levels exceeding the allowable limits.

2. All internal combustion engine-powered equipment shall have mufflers to minimize noise and shall be properly maintained to reduce noise to acceptable levels.

3. Starting-up of construction equipment meeting allowable noise limits shall not be done prior to 6:45 a.m. without prior approval of the Engineer. Equipment exceeding allowable noise levels shall not be started-up prior to 7:00 a.m.

D. Others

1. Wherever trucks and/or vehicles leave the site and enter surrounding paved streets, the Contractor shall prevent any material from being carried onto the pavement. Waste water shall not be discharged into existing streams, waterways, or drainage systems such as gutters and catch basins unless treated to comply with the State Department of Health water pollution regulations.

2. Trucks hauling debris shall be covered as required by PUC Regulation. Trucks hauling fine materials shall be covered.

3. No dumping of waste concrete will be permitted at the job-site.

4. Except in an emergency, such as a mechanical breakdown, all vehicle fueling and maintenance shall be done in a designated area. A temporary berm shall be constructed around the area when runoff can cause a problem.

E. Suspension of Work

1. Violations of any of the above requirements or any other pollution control requirements which may be specified in the Technical Specifications herein shall be cause for suspension of the work creating such violation. No additional compensation shall be due the Contractor for remedial measures to correct the offense. Also, no extension of time will be granted for delays caused by such suspensions.

2. If no corrective action is taken by the Contractor within 72 hours after a suspension is ordered by the Engineer, the State reserves the right to take whatever action is necessary to correct the situation and to deduct all costs incurred by the State in taking such action from monies due the Contractor.

3. The Engineer may also suspend any operations which he feels are creating pollution

problems although they may not be in violation of the above-mentioned requirements. In this instance, the work shall be done by force account as described in Subsection 4.2b -"Additional Work" of the GENERAL CONDITIONS and paid for in accordance with Subsection 8.4b - "Force - Account Work" therein. The count of elapsed working days to be charged against the contract in this situation shall be computed in accordance with Subsection 7.18 - "Contract Time" of the GENERAL CONDITIONS.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01581

PROJECT SIGN

1.0 PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

Furnish all labor, materials and equipment necessary to construct and install all project sign as specified hereinafter.

1.2 SUBMITTAL

The contractor shall provide the Engineer with six (6) shop drawings of the project sign for review and approval by the Engineer prior to ordering the sign.

1.3 LETTER STYLE

Copy is centered and set in Adobe Type Futura Heavy. If this specific type is not available, Futura Demi Bold may be substituted. Copy should be set and spaced by a professional typesetter and enlarged photographically for photo stencil screen process.

1.4 ARTWORK

Constant elements of the sign layout - frame, outline, stripe, and official state information - may be duplicated following drawing measurements, or be reproduced and enlarged photographically using a layout template if provided. The "STATE OF HAWAII" masthead should be reproduced and enlarged as specified, using the artwork provided.

1.5 TITLES

The specific major work of the project under construction is emphasized by using 3-3/4" type, all capitals. Secondary information such as location or buildings uses 2-1/4" type, all capitals. Other related information of lesser importance uses letter heights as indicated on 01581-3, upper / lower case letters.

2.0 PART 2 - PRODUCTS

2.1 MATERIALS

A. LUMBER

1. Panel is 3/4" exterior grade high density overlaid plywood, with resin-bonded surfaces on both sides.

2. 4"x4" sign posts shall be Douglas Fir No. 1 or better.

B. PAINTS & INKS

Screen print inks are matte finish. Paints are satin finish, exterior grade. References to Ameritone Color Key Paint are for color match only.

COLOR:	1.	1BL10A	Bohemian Blue
	2.	2H16P	Softly (White)
	3.	2VR2A	Hot Tango (Red)
	4.	1M52E	Tokay (Gray)

C. CONCRETE

Concrete shall be class B with a 2,500 psi 28-day compressive strength.

3.0 PART 3 - EXECUTION

3.1 GENERAL

A. The Project Sign shall be constructed with new materials as specified above.

B. The Project sign shall be installed at the location indicated on the drawings or as designated by the Engineer. The project sign shall be erected upon commencement of work.

3.2 MEASUREMENTS AND PAYMENT

The construction of the project sign, including all equipment, labor and material necessary to furnish and install the project sign will be paid for under the "Project Sign" proposal item.

END OF SECTION

SECTION 01715

EXISTING CONDITIONS - ASBESTOS / LEAD / HAZARDOUS MATERIAL SURVEY

PART 1 – GENERAL

1.1 SUMMARY

A. This Section includes hazardous material survey for asbestos and lead-containing materials, PCB/mercury electrical components, and estimated impacted soil, for the Kamuela Vacuum Cooling Plant, Demolition of Inactive Vacuum Cooling Warehouse, Lalamilo Ahupua´a, South Kohala, Island of Hawaii, (DOAH26B), and is provided for the Contractor's information.

B. Related Sections include the following:

1. SECTION 13281 - REMOVAL AND DISPOSAL OF ASBESTOS-CONTAINING MATERIALS for requirements of work which disturbs asbestos containing materials (ACM).

2. SECTION 13282 - LEAD PAINT CONTROL for requirements of work which disturbs lead-containing paints which, for the purpose of this Section, is defined as paint with any measurable levels of lead.

3. SECTION 13286 - LIGHT BALLASTS AND LAMPS CONTAINING PCBs AND MERCURY for requirements of work which disturbs lamps and/or light ballasts.

4. SECTION 13288 – ASBESTOS TESTING AND MONITORING for requirements for asbestos monitoring and clearance for compliance.

5. SECTION 13289 – LEAD TESTING AND MONITORING for requirements for lead monitoring and clearance for compliance.

1.2 ASBESTOS

A. The structure or structures to be renovated or modified under this contract were surveyed for the presence of ACM. A copy of the survey report is included in this Section.

1. Review the attached report for the location and volume of ACM. Contractor may conduct further surveys at his/her own expense if previously unforeseen ACM is suspected in the project areas. If additional ACM is found, notify the engineer or Officer in Charge immediately for potential equitable adjustment.

2. ACM outside of the project area shall not be disturbed in any way.

B. As 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 requirements of Chapter 110, Article 12-110-2 (f) (1) (B) of the Occupational Safety and Health Standards, State of Hawaii.

C. In the event that work is required in any buildings other than the one(s) designated within this project scope, request a copy of the asbestos survey report(s) from the Engineer or Officer in Charge. Based on the information contained in the survey(s), notify affected personnel per item entitled "ASBESTOS" herein above.

D. Contractor shall follow applicable Federal, State, and local rules and regulations pertaining to the handling, removal, and disposal of asbestos-containing materials.

1.3 LEAD CONTAINING PAINT

A. Inform employees, subcontractors, and other persons engaged in the project that lead-containing paints (LCP) and lead-based paints (LBP) are present in the project site. Follow the requirements of Federal, State, and local regulations.

B. For the purpose of this Section, LCP is defined as paints containing any detectable amount of lead. LBP is defined as paints with lead concentrations exceeding 5,000 milligrams per kilogram (mg/kg).

C. Review the attached lead testing data which identify locations where LCP was found. Lead testing was for design purposes only, and the results do not satisfy any of the requirements for worker exposure assessment.

D. Contractor may conduct additional lead testing of existing painted surface at his/her own expense.

E. Contractor shall follow applicable rules and regulations pertaining to the handling, removal, and disposal of lead paint.

1.4 ARSENIC

Arsenic-containing materials were not confirmed in the project areas, during the survey. In an event arsenic-containing or arsenic-treated material is discovered, proper handling and disposal shall be conducted in a manner protective of the site workers, the staff, the public, and the environment from arsenic hazard. Arsenic is a known carcinogen.

1.5 POLYCHLORINATED BIPHENYLS (PCBs), MERCURY, TERMITICIDES, CHLORDANE, DIELDRIN

Inform employees, subcontractors, and other persons engaged in the project that PCBs, mercury, chlordane, and dieldrin may be present in the existing building(s) and at the job site.

PART 2 – PRODUCTS

Not applicable.

PART 3 – EXECUTION

3.1 SURVEY

A. *Hazardous Materials Survey and Soil Screening Final Report for Kamuela Vacuum Cooling Units Active/Inactive Warehouses and Site Office Building, State of Hawaii Department of Agriculture, 66-1370 Mamalahoa Highway, Waimea, Hawaii,* 94 pages, dated May 26, 2020, prepared by Myounghee Noh & Associates, L.L.C.

B. Contractor shall review existing survey report(s) and shall verify and understand the locations and volumes of hazardous materials.

END OF SECTION

Hazardous Material Survey and Soil Screening
Final Report for
Kamuela Vacuum Cooling Units
ACTIVE/INACTIVE Warehouses and Site Office Building
State of Hawaii Department of Agriculture
66-1370 Mamalahoa Highway
Waimea, Island of Hawaii 96743

MNA Project 2686_2

May 26, 2020

Myounghee Noh & Associates

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This report is prepared for:

SSFM International, Inc.
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Honolulu, Hawaii 96817

HAZARDOUS MATERIAL SURVEY AND SOIL SCREENING FINAL REPORT FOR KAMUELA VACUUM COOLING UNITS ACTIVE / INACTIVE WAREHOUSES AND SITE OFFICE BUILDING STATE OF HAWAII DEPARTMENT OF AGRICULTURE 66-1370 MAMALAHOA HIGHWAY WAIMEA, ISLAND OF HAWAII 96743

MNA Project 2686_2

May 26, 2020

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APPENDICES

CONTRIBUTORS

Project Manager/Data QC	Phillip Cabanila
Certified Inspectors	Phillip Cabanila, Adam Custer
Report Writer/Drafter	Kristin Cabanila
Technical Editor/QC	Phillip Cabanila

EXECUTIVE SUMMARY

In November 2019, Myounghee Noh & Associates, L.L.C. (MNA), was retained by SSFM International, Inc., to conduct a hazardous material survey and soil screening at the State of Hawaii Department of Agriculture Kamuela Vacuum Cooling Facility Active and Inactive Warehouses and Site Office at 66-1370 Mamalahoa Highway, Waimea, Island of Hawaii. Targeted were those areas anticipated to be disturbed or demolished during the planned renovation/demolition work.

The objective of the survey was to identify the presence, extent, and conditions of hazardous materials in and on the buildings, and the presence of heavy metals- and pesticides-contaminated soil in the areas anticipated to be disturbed, so that the information can be incorporated in the design.

Hazardous Building Material Survey

On 26 November 2019, MNA conducted this hazardous material survey and identified 43 suspect building materials. Based on the analysis of 27 asbestos/bulk samples, 66 lead/paint chip, two arsenic/bulk samples, and a visual inspection of light ballasts, fluorescent light tubes, and light switches, MNA provides the following summary:

Summary of Hazardous Material Findings

	ACM	LCP	LBP	Arsenic	PCB	Mercury
Active Warehouse						
Chilled Rooms 1 and 2		◙			◙*	◙
Main Room		◙	◙			◙
Exterior and Roof		◙	◙			
Inactive Warehouse						
Office		◙	◙			◙
Exterior and Roof	◙	◙	◙			
Cooling Containers 1 and 2						
Site Office						
Main Room	◙					◙
Restroom						◙
Exterior and Roof		◙				

◙ indicates presence of hazardous material
*All ballasts were inaccessible at the Active Warehouse and are suspected to contain oil with PCB.
ACM – Asbestos-Containing Material LCP – Lead-Containing Paint, <5,000 mg/kg
LBP – Lead-Based Paint, ≥5,000 mg/kg PCB – Polychlorinated Biphenyls

Soil Screening

The purpose of the soil screening was to evaluate the presence and levels of heavy metals and organochlorine pesticides that may pose potential risks to construction workers and occupants during the building repairs, and to determine appropriate soil management and disposal practices.

On 01 May 2020, MNA collected six multi-incremental samples including one duplicate sample and one triplicate sample from 0 to 0.5 foot (ft) and 0.5 to 1.5 ft beneath the existing asphaltic

concrete pavement where a leach field and associated piping are proposed to be installed, west of the Inactive Warehouse (Appendix C). The Chemicals of Potential Concern (COPCs) for the sampling were Resource Conservation and Recovery Act 8 metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver) and organochlorine pesticides. The analytical results were compared to the Hawaii Department of Health (HDOH) Tier 1 Environmental Action Levels (EALs) for unrestricted (residential) and restricted (commercial/industrial) land use.

Analytical results indicated that none of the COPCs were present in concentrations approaching the HDOH EALs for unrestricted land use. Measurable levels of arsenic, barium, chromium, and lead were reported in some of the results, but below their EALs for unrestricted land use.

Hazard Controls Required

Based on the visual survey and sampling and analysis of suspect bulk materials and paints, special hazard control measures are warranted for work involving asbestos, lead paint, polychlorinated biphenyls, and mercury. These control measures are briefly described in Section 11 Recommendations for Renovation and Construction Work. General dust and runoff controls are also warranted.

Contractors must verify, prior to bidding, the location and volumes of potentially hazardous materials and determine the appropriate dust and hazard control measures based on the area and material to be disturbed. Quantities of materials provided in this report are based on visual approximations only during the survey and should not be used for bidding purposes.

Analytical results provided in this report do not meet the requirements for waste characterizations. Contractor must coordinate with permitted landfill for required waste characterizations.

Any asbestos-containing material (ACM) disturbance exceeding 3 square feet or 3 linear feet of friable ACM or generating 0.5 cubic foot of ACM debris is considered a regulated activity. Contractors are required to comply with 29 CFR 1926.1101(k)(3)(i) to identify the presence, location, and quantity of ACM before any work is begun.

Based on the results of the soil screening, MNA recommends the following:

- While the levels of heavy metals were below the EALs, earthwork may cause a potential exposure to students/staff/faculty, the site workers, and the public via fugitive dust. The routes of exposure to fugitive dust are by inhalation, ingestion, and dermal contact. The Contractor must use engineering controls such as water misting and wind barriers to control fugitive dust.
- Use of best management practices (BMP), such as dust control and erosion control, must be implemented to prevent surface runoff and migration of contaminants.

1.0 INTRODUCTION

Myounghee Noh & Associates, L.L.C. (MNA), under an agreement with SSFM International, Inc., conducted a hazardous material survey and soil screening for the State of Hawaii Department of Agriculture Kamuela Vacuum Cooling Facility Active and Inactive Warehouses and Site Office located at 66-1370 Mamalahoa Highway, Waimea, Island of Hawaii.

MNA's survey was conducted in support of the planned renovation of Inactive Warehouse and demolition of Active Warehouse. Targeted were those areas anticipated to be disturbed by the renovation/demolition and construction work, as follows (Table 1):

- Hazardous building materials due to the suspected presence of asbestos, lead, or arsenic.
- Polychlorinated biphenyls (PCB)-containing light ballasts.
- Mercury-containing electrical equipment, such as fluorescent light tubes, high-intensity discharge light bulbs, and light switches.
- Soil suspected of containing elevated levels of organochlorine pesticides and heavy metals.

Inactive Warehouse
November 2019

Active Warehouse
November 2019

Site Office Building
November 2019

Inactive Warehouse
Ala Ohia Road
Mamalahoa Highway
Active Warehouse
Site Office
Map Area
Scale (ft.)
0 80 160 240
Myounghee Noh & Associates, L.L.C.
Figure 1. Vicinity Map
State of Hawaii Department of Agriculture
Kamuela Vacuum Cooling Units, Island of Hawaii

Table 1. Anticipated Design Scope of Work

Work Anticipated
Inactive Warehouse
• Demolish building and foundation
Active Warehouse
• Install hand washing station • Install water fountain • General improvements and renovations
Site Office
• No Work Anticipated

2.0 SAMPLING AND SURVEY METHODS

On 26 November 2019, State of Hawaii-certified building inspectors, Phillip Cabanila and Adam Custer, conducted the building material survey. The inspectors performed a visual assessment of the project site, identified materials suspected of containing asbestos, lead, or arsenic, and collected samples of these materials. Multi-incremental (MI) soil samples were collected from two decision units (DU) at 0-0.5 and 0.5-1.5 feet (ft) beneath the existing asphaltic concrete, on 02 May 2020 for the soil screening purpose. Inspector certifications are presented in Appendix A.

2.1 Identifying Homogeneous Materials

The inspectors identified building materials with the same appearance, color, and substrate as homogeneous materials. Interior homogeneous materials are considered unique per building and building floor, while exterior building materials are considered unique per area/structure. Building materials with the same characteristics (appearance, color, and substrate), as an identified homogeneous material, should be considered to possess the same hazard characteristics, unless specifically identified as otherwise in the report. As an example, if beige paint on metal pipe is found to be lead-based paint (LBP), then all identical beige paint on metal pipe should be treated as LBP. Table 2 provides an overview of sampling and a summary of hazardous materials identified.

Table 2. Summary of Sampling and Results

Materials Sampled	Samples Submitted/ Inspected	Suspect Material Locations	Identified Hazardous Materials
Site Office			
Asbestos in bulk material or paint	15	Ceilings, floor, sink, walls, window frames	1 ACM (5% Chrysotile)
Lead in paint	10	Cove base, door frames, eaves, fascia, roofing system, walls, window frames	2 LCP (40 mg/kg – 340 mg/kg)
Arsenic in bulk	0	---	None
PCB light ballasts	2	Fluorescent light fixtures (4 fixtures, containing a total of 4 ballasts inventoried)	None
Mercury light tubes	8	Fluorescent light tubes (8 tubes inventoried)	8 Low mercury vapor light tubes

Materials Sampled	Samples Submitted/ Inspected	Suspect Material Locations	Identified Hazardous Materials
Mercury light switches	3	Wall switches (3 switches inventoried)	3 Suspect mercury-containing light switches
HID bulbs	0	---	None
Active Warehouse			
Asbestos in bulk material or paint	6	Bollard footing, footing	None
Lead in paint	14	Beams, bollards, bollard bases, ceilings, columns, column bases, doors, door frames, footing, flashing, panel, roofing system, tank base, walls	9 LCP (40 mg/kg – 39,000 mg/kg) including 2 LBP (5,700 mg/kg – 39,000 mg/kg)
Arsenic in bulk	0	---	None
PCB light ballasts	0	Fluorescent light fixtures (16 fixtures, containing a total of 16 ballasts inventoried)	16 Suspect PCB-containing light ballasts*
Mercury light tubes	32	Fluorescent light tubes (32 tubes inventoried)	32 Conventional mercury-containing light tubes
Mercury light switches	4	Wall switches (4 switches inventoried)	4 Suspect mercury-containing light switches
HID bulbs	24	24 HID fixtures inventoried	24 HID bulbs
Inactive Warehouse			
Asbestos in bulk material or paint	6	Ceilings, roofing system, walls	1 ACM (20% Chrysotile)
Lead in paint	28	Beams, bollards, cabinets, ceilings, columns, conduit, door frames, electrical box, frame, pipes, roofing system, trusses, Vacuum Tanks 1 and 2, walls, window frame	13 LCP (660 mg/kg – 100,000 mg/kg) including 5 LBP (9,500 mg/kg – 100,000 mg/kg)
Arsenic in bulk	2	Ceiling	None
PCB light ballasts	1	Fluorescent light fixtures (1 fixture, containing 1 ballast inventoried)	None
Mercury light tubes	2	Fluorescent light tubes (2 tubes inventoried)	2 Conventional mercury-containing light tubes
Mercury light switches	1	Wall switches (1 switch inventoried)	1 Suspect mercury-containing light switch
HID bulbs	0	---	None

*All ballasts were inaccessible in Active Warehouse and are suspected to contain oil with PCB.
ACM – Asbestos-Containing Material
HID – High-Intensity Discharge
LBP – Lead-Based Paint, ≥5,000 mg/kg
LCP – Lead-Containing Paint, <5,000 mg/kg
mg/kg – milligrams per kilogram (equivalent to parts per million)
PCB – Polychlorinated biphenyls

2.2 Building Material Sampling

Bulk and paint samples were collected using a decontaminated chisel, razor, or hammer in a manner that minimized airborne dust. The inspectors collected triplicate samples for asbestos and duplicate samples for lead and arsenic. Samples were placed in sealable plastic bags, labeled with a unique identification number, and recorded on a chain-of-custody. For each sample, the date, sample appearance, analyte, and sample location were recorded on a field data form. Asbestos samples were transported under chain-of-custody to LA Testing in South Pasadena, California. Lead and arsenic samples were delivered under chain-of-custody to Hawaii Analytical Laboratory in Honolulu, Hawaii.

2.3 PCB-Containing Ballast Inspection

Fluorescent light ballasts in each building were inventoried and inspected for the presence of PCB-containing dielectric fluid. MNA recorded the number of fluorescent light fixtures and selected accessible fixtures to be inspected. Three of five accessible light fixtures were inspected. MNA confirmed that the light switch was off, opened the light fixture, removed the ballast cover plate, and inspected the ballast for a "No PCBs" label and/or the manufactured date. The location of inspected fixtures was recorded, and the light fixtures were reassembled following inspections.

Ballast manufactured between July 1, 1978, and July 1, 1998, that does not contain PCBs must be labeled "No PCBs." Ballast manufactured after 1998 are not required to be labeled. Ballasts without the "No PCBs" label or that are manufactured prior to 1979 are considered suspect PCB-containing in accordance with EPA guidance for PCB. Inaccessible ballasts are assumed to be PCB-containing.

2.4 Mercury-Containing Light Tube and Switch Inspection

MNA visually inspected fluorescent light tubes in each building to identify if they were conventional mercury-containing tubes. According to the EPA guidelines, lamps with green end caps are identified as low-mercury light tubes which may contain 3.5 - 4 milligrams (mg) of mercury, compared to a conventional fluorescent light tube with 8 - 14 mg of mercury (http://www.epa.gov/osw/hazard/wastetypes/universal/lamps/faqs.htm). If a green band is not observed at the end cap, it is considered a conventional mercury-containing tube.

MNA also turned on and off all accessible light switches throughout each building. If a switch did not make a clicking sound when turned on and off, it was considered to be suspect mercury-containing. The locations of inspected light tubes and switches were recorded.

2.5 Soil Screening

Based on the proximity to existing buildings and their foundations, the COPCs were heavy metals and chlorinated pesticides. On 01 May 2020, MNA collected six multi-incremental samples including one duplicate sample and one triplicate sample from 0 to 0.5 ft and 0.5 to 1.5 ft beneath the existing asphaltic concrete pavement where a leach field and associated piping are proposed to be installed, west of the Inactive Warehouse (Appendix C). Each DU was separated into 30 grids, of which one 50-gram subsample was collected from each grid portion, for a total of approximately 1,500 grams per sample. The DU locations are described as follows:

- DU 1 – North and east of the Active Warehouse where piping associated with the planned leach field will be constructed. This DU was approximately 650 square feet of area.
- DU 2 – On the east side of the Active Warehouse where the planned leach field will be constructed. This DU was approximately 900 square feet of area.

MI samples were collected using a one-inch diameter stainless steel T-handled sampler after a hole was bored through the existing AC pavement. The T-handled sampler was advanced into the soil

until the the pavement surface met a pre-marked 6-inch depth indicator on the sampler, generating approximately 50-gram of soil for each increment. Thirty increment locations were selected using a grid pattern across the DU for representative sampling. Between each DU, the sampling tools were decontaminated by cleaning with Liquinox® solution, and rinsing with tap water and deionized water.

Each increment was placed directly into a sealable plastic bag, from the T-handled sampler. Upon completion of collecting samples, the sample bag was placed into a second sealable plastic bag, labeled with a unique identification number, and recorded on a chain-of-custody form. Samples were placed in a cooler and chilled to below 4ºC with frozen gel ice for transport to the analytical laboratory. The date, sample appearance, analyte, and sample location were recorded on a field data form. The samples were transported under chain-of-custody protocols to Advanced Analytical, Honolulu, for analysis of organochlorine pesticides and heavy metals.

Investigation derived waste (IDW) was minimized through the selection of sampling technique. IDW included disposable personal protective equipment (PPE) and decontamination waste, including paper towels, and decontamination wastewater. One trash bag of PPE was generated and disposed of in a municipal waste dumpster. IDW water was dispersed back onto their respective DU upon completion of sampling and decontamination.

3.0 LABORATORY INFORMATION

LA Testing analyzed the asbestos samples by polarized light microscopy using the Environmental Protection Agency (EPA) Method 600/R-93/116. LA Testing, South Pasadena, is certified by:

- National Voluntary Laboratory Accreditation Program (NVLAP), certification 200232-0
- State of Hawaii Department of Health (HDOH), certification L-01-034
- American Industrial Hygienist Association (AIHA) Environmental Lead Laboratory Accreditation Program (ELLAP), certification 102814

Hawaii Analytical Laboratory analyzed the lead paint samples by flame atomic absorption spectroscopy using the NIOSH Method 7082m and the arsenic samples by EPA Method 3050B/6010B. Hawaii Analytical Laboratory, Honolulu, is certified by:

- NVLAP, certification 200655-0
- HDOH, certification L-14-002
- AIHA ELLAP, certification 101812

Advanced Analytical retained Accu Laboratory in Kirkland, Washington, for the analysis of pesticides by EPA Method 8081A and Resource Conservation and Recovery Act (RCRA) heavy metals by EPA Method 6010B. Accu Laboratory is certified by:

- The State of Washington Department of Ecology, certification C991-19

4.0 ASBESTOS RESULTS

Materials determined to contain greater than, or equal to, 1% asbestos are considered regulated asbestos-containing material (ACM) under the National Emission Standards for Hazardous Air Pollutants (NESHAP) as specified in 40 Code of Federal Regulations (CFR) Part 61 Subpart M. The U.S. Occupational Safety and Health Administration (OSHA) Asbestos General Industry and Construction Standards also define ACM as 1% asbestos or more by volume under 29 CFR 1910.1001 and 29 CFR 1926.1101, respectively. However, any measurable levels of asbestos fibers are considered to be a health concern, in an uncontrolled work environment.

Site Office: Five homogeneous materials suspected of containing asbestos were identified and sampled, generating 15 samples for analysis. One ACM, light gray undercoating on metal sink, was confirmed in the Main Room, with a result of 5% chrysotile asbestos.

Inactive Warehouse: Two homogeneous materials suspected of containing asbestos were identified and sampled, generating six samples for analysis. One ACM, beige cement panels on exterior roofing system and walls, was confirmed, with 20% chrysotile asbestos.

Active Warehouse: Two homogeneous materials suspected of containing asbestos were identified and sampled, generating six samples for analysis. Neither sample contained measureable levels of asbestos. Therefore, it is concluded that no ACM is present in the area anticipated to be disturbed (Table 3).

Table 3. Asbestos-Containing Material Determination

Areas	Locations	HM ID	Material Color	Material	Substrate	Result	Condition	Estimated Quantity
Site Office								
Main Room	Floor	38	Beige with streaks	12" x 12" Vinyl tile Mastic	Concrete	ND	Fair	450 sq. ft.
Main Room	**Sink**	**39**	**Lt. gray**	**Undercoating**	**Metal**	**5% Chrysotile**	**Good**	**5 sq. ft.**
Main Room	Window frames	43	Gray	Caulking	Metal	ND	Good	60 ln. ft.
Main Room, Restroom	Ceilings, walls	40	Lt. gray	Painted drywall Joint compound	None	ND	Good	1,500 sq. ft.
Restroom	Sink	41	Lt. gray	Caulking	Porcelain	ND	Fair	5 ln. ft.
Active Warehouse								
Exterior	Footing	37	Lt. brown	Skim coat Stucco	Concrete	ND	Poor	250 sq. ft.
Exterior	Bollard footing	42	Gray	Paint/skim coat	Concrete	ND	Poor	10 sq. ft.
Inactive Warehouse								
Cooling Containers 1 and 2	Ceilings, walls	36	Tan	Insulation	Metal	ND	Poor	4,000 sq. ft.
Exterior	**Roofing system, walls**	**35**	**Beige**	**Cement panels**	**None**	**20% Chrysotile**	**Poor**	**6,600 sq. ft.**

Bold values indicate results above the laboratory reporting limit.
Good – Material is in an "as installed" condition. It is usable as is and may show cosmetic wear and tear or fading.

Fair – Material is functional for its installed purpose but shows initial signs of deterioration beyond the cosmetic.
Poor – Material shows significant deterioration and may not be functional for its installed purpose. The binding of the material has decreased integrity as indicated by peeling, cracking, or crumbling of the material.

Abbreviations and Acronyms
HM ID – Homogeneous Material Identifier
ln. ft. – Linear Feet
ND – Not Detected
sq. ft. – Square Feet

The suspected ACM descriptions and identifiers are provided in Appendix B. Sample and hazardous material location drawings are provided in Appendix C. Photographs of suspected materials are presented in Appendix D. Laboratory analytical reports, chain-of-custody, and field data forms are provided in Appendix E.

5.0 LEAD RESULTS

The U.S. Department of Housing and Urban Development (HUD) and the EPA define paint containing 5,000 milligrams per kilogram (mg/kg), or 0.5% by weight, or more of lead to be LBP. Paint containing any measurable concentration of lead is considered to be lead-containing paint (LCP) and a health concern. When lead is detected in a multi-layer sample, it is assumed that all layers represented by the sample contain lead at the same concentration.

Site Office: Five suspected lead paints were identified and sampled, generating 10 paint chip samples. Two LCP were identified in the survey area, with results ranging from 40 mg/kg to 340 mg/kg. None of the lead paints were identified as LBP, exceeding 5,000 mg/kg, the threshold for LBP.

Inactive Warehouse: Fourteen suspected lead paints were identified and sampled, generating 28 paint chip samples. Thirteen LCP were identified in the survey area, with results ranging from 660 mg/kg to 100,000 mg/kg. Five of those paints were identified as LBP.

Active Warehouse: Fourteen suspected lead paints were identified and sampled, generating 28 paint chip samples. Nine LCP were identified in the survey area, with results ranging from 40 mg/kg to 39,000 mg/kg. Five of those paints were identified as LBP (Table 4).

Suspected LCP descriptions and identifiers are provided in Appendix B. Sample and hazardous material location drawings are in Appendix C. Photographs of suspected LCP are presented in Appendix D. Laboratory analytical reports, chain-of-custody, and field data forms are provided in Appendix E.

Table 4. Lead-Containing Paint Determination

Areas	Locations	HM ID	Material Color	Substrate	Result (mg/kg)	Condition	Estimated Quantity
Site Office							
Main Room	Walls	27	Lt. gray	Drywall	<40	Good	250 sq. ft.
Main Room, Restroom	Door frames, window frames	28	Lt. gray	Wood	<40	Fair	150 ln. ft.
Main Room, Restroom	Cove base	29	Lt. brown	Wood	<40	Fair	200 ln. ft.
Exterior	Door frames, eaves, fascia, window frames	30	Peach	Wood	**LCP 40 - 46**	Poor	350 ln. ft.
Exterior	Roofing system, walls	31	Green	Metal	**LCP 270 - 340**	Poor	600 sq. ft.
Inactive Warehouse							
Office	Walls	6	White	Wood	**LCP 660 - 790**	Poor	300 sq. ft.
Office	Door frame, window frame	10	Brown	Wood	**LCP 1,000 - 1,100**	Fair	50 ln. ft.
Office	Column	11	Lt. brown	Metal	**LCP 3,100 - 3,700**	Fair	10 ln. ft.
Office	Door	12	Lt. brown	Wood	**LCP 1,300 - 1,500**	Fair	30 sq. ft.
Office	Ceiling	13	White	Canec	<40	Fair	100 sq. ft.
Office	Cabinets, walls	14	Lt. green	Wood	**LBP 9,500 - 11,000**	Fair	100 sq. ft.
Exterior	Beams, columns, conduit, pipes, trusses	1	Silver	Metal	**LBP 19,000 - 51,000**	Poor	5,000 ln. ft.
Exterior	Beams, bollards, columns, trusses	2	Off-white	Metal	**LCP 1,400 - 1,600**	Poor	2,000 ln. ft.
Exterior	Vacuum Tank 1	3	Beige	Metal	**LBP 78,000 - 100,000**	Poor	300 sq. ft.
Exterior	Vacuum Tank 2	4	Aqua with brown under layer	Metal	**LBP 19,000 - 22,000**	Poor	300 sq. ft.
Exterior	Door frame, walls, window frame	5	Off-white	Wood	**LCP 1,200**	Poor	500 sq. ft.
Exterior	Roofing system, walls	7	Beige	Transite	**LBP 47,000 - 52,000**	Poor	6,600 sq. ft.
Exterior	Conduit, electrical box	8	Gray	Metal	**LCP 3,500 - 3,600**	Poor	60 sq. ft.
Exterior	Frame, wall	9	Gray	Wood	**LCP 1,100 - 1,300**	Poor	100 sq. ft.
Active Warehouse							
Main Room	Beams, ceiling	18	Lt. green	Metal	**LCP 76 - 80**	Fair	1,800 sq. ft.
Main Room	Beams, columns	19	Lt. brown	Metal	**LBP 4,800 - 5,700**	Fair	900 ln. ft.
Main Room	Column base, footing	20	Lt. brown	Concrete	<40	Poor	1,000 sq. ft.
Main Room	Walls	21	Beige	Metal	**LCP 40**	Fair	4,500 sq. ft.
Main Room	Walls	22	Lt. gray	Wood	<40	Fair	250 sq. ft.

Areas	Locations	HM ID	Material Color	Substrate	Result (mg/kg)	Condition	Estimated Quantity
Main Room	Doors, door frames	23	Tan	Metal	**LCP 220**	Poor	80 sq. ft.
Main Room	Bollards, column base, tank base	24	Yellow	Concrete	<40	Fair	120 sq. ft.
Chilled Rooms 1 and 2	Beams, ceilings, columns, walls	25	White	Metal	**LCP 40 - 46**	Poor	6,500 sq. ft.
Exterior	Roofing system, walls	15	Beige	Metal	**LCP 130 - 150**	Poor	10,000 sq. ft.
Exterior	Beams, flashing, walls	16	Green	Metal	<40	Poor	1,500 sq. ft.
Exterior	Footing	17	Lt. brown	Concrete	<40	Poor	50 sq. ft.
Exterior	Bollards, bollard base	26	Lt. gray	Concrete	**LCP** <40 - **89**	Poor	20 sq. ft.
Exterior	Panel	32	Yellow	Wood	**LCP 49 - 52**	Poor	20 sq. ft.
Exterior	Bollards	33	Gray	Metal	**LBP 33,000 - 39,000**	Poor	20 sq. ft.

Bold values indicate results above the reporting limit.
Good – Material is in an "as installed" condition. It is usable as is and may show cosmetic wear and tear or fading.
Fair – Material is functional for its installed purpose but shows initial signs of deterioration beyond the cosmetic.
Poor – Material shows significant deterioration and may not be functional for its installed purpose. Paint is bubbling or peeling over 20% or more of surface area and no longer protects the substrate.

Abbreviations and Acronyms
HM ID – Hazardous Material Identifier
LCP – Lead-Containing Paint, <5,000 mg/kg
mg/kg– milligrams per kilogram or parts per million
LBP – Lead-Based Paint, ≥5,000 mg/kg
ln. ft. – Linear Feet
sq. ft. – Square Feet

6.0 ARSENIC RESULTS

The disturbance of arsenic-containing materials is regulated by the OSHA Inorganic Arsenic General Industry Standard under 29 CFR 1910.1018.

Site Office and Active Warehouse: No suspected arsenic-containing materials were observed; therefore, no samples were collected during this survey.

Inactive Warehouse: One building material suspected of containing arsenic, white canec ceiling in Office, was identified and sampled, generating two samples for analysis. Neither sample contained a measurable level of arsenic. Therefore, no arsenic-containing materials were identified in the building.

Suspected arsenic-containing material descriptions and identifiers are provided in Appendix B. Sample location drawings are provided in Appendix C. Photographs of suspected arsenic-containing material are presented in Appendix D. Laboratory analytical reports, chain-of-custody, and field data forms are provided in Appendix E.

7.0 SUSPECT PCB-CONTAINING BALLAST RESULTS

Site Office: MNA inventoried four fluorescent light fixtures, containing a total of four ballasts throughout the building. All fixtures were accessible. Two light ballasts were inspected, and each was identified as non-PCB ballast because the "No PCBs" label was observed. The ballasts were located in the Main Room.

Active Warehouse: MNA inventoried 16 fluorescent light fixtures, containing a total of 16 ballasts throughout the building. None of the fixtures were accessible by inspectors; therefore, the 16 ballasts were assumed to contain PCB. Contractor must be required to inspect each ballast before removal and replacement prior to demolition.

Inactive Warehouse: MNA inventoried one fluorescent light fixture, containing one ballast, in the Office. The light ballast was inspected and identified as a non-PCB ballast because the "No PCBs" label was observed.

8.0 MERCURY RESULTS

Site Office: MNA inventoried and visually inspected eight fluorescent light tubes in the building. None of the fluorescent light tubes had a green band, indicating conventional mercury-containing tubes. No high-intensity discharge light bulbs were observed in the building. Three light switches were also inspected, and all of them were suspected to contain mercury.

Active Warehouse: MNA inventoried and visually inspected 32 fluorescent light tubes in the project area. None of the fluorescent light tubes had a green band, indicating conventional mercury-containing tubes. Twenty-four high-intensity discharge light bulbs were observed in the Main Room. Four light switches inspected were suspected to contain mercury.

Inactive Warehouse: MNA inventoried and visually inspected two fluorescent light tubes in the building. None of the fluorescent light tubes had a green band, indicating conventional mercury-containing tubes. No high-intensity discharge light bulbs were observed in the project areas. One light switch was also inspected, and it was suspected to contain mercury.

9.0 SOIL SCREENING RESULTS

The analytical results for contaminants were compared to the State of Hawaii Department of Health (HDOH) Tier 1 Environmental Action Levels (EAL) for both unrestricted (residential) and restricted (commercial/industrial) land uses, above a non-drinking water resource and located greater than 150 meters from surface water features (State of Hawaii Department of Health, rev. Fall 2017).

Six Multi-increment (MI) soil samples, including one duplicate and one triplicate from two Decision Units (DU), were collected from 0-0.5 ft bgs and 0.5-1.5 ft bgs, and were analyzed for organochlorine pesticides and heavy metals. The MI sampling method combined 30 soil increments for each sample.

Measurable levels of arsenic, barium, chromium, and lead were reported in some of the results, but below their respective EALs for unrestricted and restricted land uses (Table 5).

Table 5. Soil Analytical Results

Decision Unit (DU) / Sample ID (2686-) / Depth / Analytes	Analytical Results (mg/kg)						Tier 1 Environmental Action Level (mg/kg)	
	DU-01 (with triplicate set)				DU-02			
	DU-01-A-1 0-0.5 ft bgs (Primary)	DU-01-A-1 0-0.5 ft bgs (Duplicate)	DU-01-A-1 0-0.5 ft bgs (Triplicate)	DU-01-B 0.5-1.5 ft bgs	DU-02-A 0-0.5 ft bgs	DU-01-B 0.5-1.5 ft bgs	Unrestricted	Restricted
Resource Conservation and Recovery Act 8 Metals (6020B/7471A)								
Arsenic	2.3	2.3	2.0	2.0	2.8	2.1	24	95
Barium	14	15	15	20	7.0	15	1,000	2,500
Cadmium	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	14	72
Chromium	9.5	10.4	10.2	11	6.4	7.2	1,100	1,100
Lead	6.1	5.2	7.6	3.7	2.2	ND (1.0)	200	800
Mercury	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	4.7	61
Selenium	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	78	1,000
Silver	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	78	1,000
Pesticides (8081B)								
alpha-BHC	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	0.075[1]	0.075[1]
beta-BHC	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)		
gamma-BHC	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)		
delta-BHC	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)		
Heptachlor	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	1.3	5.6
Aldrin	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	3.9	8.4
Heptachlor epoxide	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	0.2	2.7
Endosulfan I	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	13[2]	13[2]
Endosulfan II	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)		
Endosulfan sulfate	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)		
Dieldrin	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	2.5	24
4,4'-DDD	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	2.2	8.4
4,4'-DDE	ND (0.0020)	ND (0.0020)	ND (0.0020)	ND (0.0020)	ND (0.0020)	ND (0.0020)	1.9	8.2
4,4'-DDT	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	1.8	5.6
Endrin	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)	3.8[3]	30[3]
Endrin aldehyde	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)		
Chlordane (technical)	ND (0.10)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	ND (0.00010)	17	23
Methoxychlor	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	ND (0.0050)	16	16
Toxaphene	ND (0.20)	ND (0.00020)	ND (0.00020)	ND (0.00020)	ND (0.00020)	ND (0.00020)	0.48	1.8

10.0 SUMMARY OF SURVEY RESULTS

Hazardous Building Material Survey

MNA conducted a hazardous material survey at the State of Hawaii Department of Agriculture Kamuela Vacuum Cooling Facility Active and Inactive Warehouses and the Site Office, at 16-1370 Mamalahoa Highway, Waimea, Island of Hawaii. MNA's survey was conducted in support of the renovation and demolition project (design scope in Table 1).

Based on the analysis of 27 asbestos-suspected building material samples, 66 lead-suspected paint chip samples, two arsenic-suspected canec samples, and a visual inspection of light ballasts, fluorescent light tubes, and light switches, MNA provides the following summary:

Summary of Hazardous Material Findings

	ACM	LCP	LBP	Arsenic	PCB	Mercury
Active Warehouse						
Chilled Rooms 1 and 2		◙			◙*	◙
Main Room		◙	◙			◙
Exterior and Roof		◙	◙			
Inactive Warehouse						
Office		◙	◙			◙
Exterior and Roof	◙	◙	◙			
Cooling Containers 1 and 2						
Site Office						
Main Room	◙				◙	◙
Restroom						
Exterior and Roof		◙				

◙ indicates presence of hazardous material
*None of the ballasts were accessible in the Active Warehouse therefore suspected to contain oil with PCB.
ACM – Asbestos-Containing Material LCP – Lead-Containing Paint, <5,000 mg/kg
LBP – Lead-Based Paint, ≥5,000 mg/kg PCB – Polychlorinated Biphenyls

Soil Screening

The analytical results were compared to the HDOH Tier 1 EALs for unrestricted (residential) and restricted (commercial/industrial) land use above a drinking water resource and located more than 150 meters form surface water.

MNA collected six MI samples from two DUs, including one duplicate and one triplicate samples, from 0 to 0.5 ft and 0.5 to 1.5 ft beneath the existing pavement in the area where the planned leach field and associated piping will be installed (Appendix C). COPCs were organochlorine pesticides and RCRA 8 metals.

Measurable levels of arsenic, barium, chromium, and lead were reported in some of the results, but below their respective EALs for unrestricted and restricted and uses.

11.0 RECOMMENDATIONS FOR RENOVATION AND CONSTRUCTION WORK

It is required that properly trained employees perform construction work and renovation that disturbs hazardous materials, in a manner protective of the site workers, the public, facility users, and the environment. The following recommendations address OSHA and other applicable federal requirements. These recommendations provide guidance for the management of hazardous building materials and control of occupational and environmental hazards associated with operations, maintenance, renovation, and demolition. These recommendations are based on information gathered during the hazardous materials survey. These recommendations are not intended to constitute a formal work plan but are intended to provide a starting point for the development of a work plan or procedure.

11.1 Asbestos-Containing Materials

Employees involved in renovation or demolition activities that disturb asbestos must conduct work in accordance with 29 CFR 1926.1101, the OSHA Asbestos Construction Standard. Work practices that would trigger these requirements include, but are not limited to, repair, maintenance, or renovation of structures containing asbestos, as well as removal or encapsulation of materials containing asbestos. For each project, the contractor must determine the appropriate safety measures based on the area to be disturbed, the type, volume, and condition of asbestos materials. Applicable work practice guidelines involving the disturbance of asbestos materials are summarized, but are not limited to:

- Employees must anticipate hazards, implement appropriate engineering controls, and utilize personal protective equipment (PPE).
- Employers must provide and require the use of appropriate PPE for any employee exposed to airborne concentrations of asbestos that exceed OSHA regulatory limits, or for which a required negative exposure assessment is not produced (29 CFR 1926.1101[i][1]).
- Employees must utilize respiratory protection until the initial exposure monitoring assessment documents safe working levels of airborne asbestos (29 CFR 1926.1101[f] and [h]). Additional periodic exposure monitoring may be required.
- An initial exposure monitoring assessment should be carried out when workers are disturbing asbestos to ensure that they are not exposed to airborne asbestos concentrations greater than the Permissible Exposure Limit (PEL) of 0.1 fibers per cubic centimeter (f/cc) of air as an 8-hour time-weighted average (TWA), and the Excursion Limit of 1.0 f/cc over a 30-minute sampling period.
- The work site must be maintained as a controlled regulated area and supervised by a competent person at all times.
- Employees must implement stringent dust control procedures to prevent asbestos in any airborne or settled dust.
- Employees must clean the work area thoroughly using wet methods and a high-efficiency particulate air (HEPA) vacuum. Dry sweeping or air blowing of asbestos-containing debris and dust must be avoided.

- Waste and dust containing asbestos must be collected separately from other construction debris. Workers must conduct prompt and controlled clean up and disposal of asbestos wastes and debris in leak-tight containers.
- Asbestos-containing waste must be wet, packaged, labeled, stored, and disposed of in accordance with applicable regulations.
- Visually inspect the work area to ensure that all asbestos-containing debris and dust has been properly removed.
- Conduct clearance in accordance with contract specifications.

11.2 Lead-Containing Paints

Employees involved in renovation or demolition activities that disturb lead paints must conduct work in general accordance with 29 CFR 1926.62 OSHA Lead Construction Standard. Work practices that would trigger these requirements include, but are not limited to, sanding, blasting, welding, cutting, or scraping. For each project, the contractor must determine the appropriate safety measures based on the area to be disturbed, the lead concentration, and the paint condition. Applicable work practice guidelines involving the disturbance of lead paints are summarized, but are not limited to:

- Employees must anticipate lead hazards and implement appropriate engineering controls and PPE.
- Employees must utilize respiratory protection until the initial air monitoring assessment documents safe working levels of airborne lead (29 CFR 1926.62[d][1] and [2][i][A]).
- An exposure assessment should be carried out when employees are disturbing LCP or LBP to ensure that they are not exposed to airborne lead concentrations greater than the PEL of 50 micrograms per cubic meter ($\mu g/m^3$) averaged over an 8-hour period. Additional periodic exposure monitoring may be required if the Action Level, 30 $\mu g/m^3$, averaged over an 8-hour period is exceeded.
- Employees must implement stringent dust control procedures to prevent airborne lead dust.
- Employees must clean the work area thoroughly using wet methods and a HEPA vacuum. Dry sweeping or air blowing of lead debris and dust must be avoided.
- Lead-containing debris must be segregated from other wastes, collected, and containerized. Wastes must be characterized per State of Hawaii requirements, including a determination of the waste as hazardous or non-hazardous. Lead-containing waste must be handled and disposed of in accordance with applicable requirements.
- Visually inspect and verify the work area to ensure all lead-containing debris and dust has been properly removed and the project site is free of lead hazard.
- Conduct clearance in accordance with contract specifications.

11.3 Arsenic-Containing Materials

Based on the sampling and analysis of one suspected arsenic-containing material in Inactive Warehouse, no materials containing arsenic were identified in the project areas during this survey. Therefore, no special arsenic control measures are provided.

11.4 PCB-Containing Ballasts

When the label on ballasts are missing, illegible, or does not state "No PCBs," workers must handle and dispose of these ballasts as PCB-containing ballasts. Trained workers are required to remove suspect PCB-containing light ballasts or cleaning up PCB spills, and the work must be performed in accordance with OSHA and EPA requirements. The handling, storage, transportation, and disposal of suspect PCB-containing waste are regulated by the Toxic Substance Control Act (TSCA; 40 CFR Part 761). Safeguards, precautions, and protective measures must be designed and implemented to prevent PCB release or exposure. For each project, the contractor should determine the appropriate safety measures based on the number and condition of suspect PCB-containing ballasts. Applicable work practice guidelines involving PCB-containing ballasts and/or PCB-contaminated materials are summarized, but are not limited to:

- Employees must anticipate hazards and utilize appropriate engineering controls and PPE.
- All work involving PCB should be performed by properly trained and equipped personnel.
- A written spill plan may aid in spill response.
- Maintain a PCB spill response kit on site that contains at a minimum the following items: disposable nitrile or nitrile rubber gloves, disposable coveralls, chemical safety goggles, disposable foot covers, PCB warning signs for controlled areas, caution tape, oil absorbent pads, sealable waste containers to prevent exposure to vapors, tape, rags, paper and writing equipment, and labels for waste containers and secondary containment for vessels.
- Clean up leaks and spills and handle disposal operations in compliance with regulatory requirements and project specifications.
- Trained employees should clean up PCB spills using the spill response kit and appropriate equipment.
- Establish PCB controlled areas for removal or spill cleanup to prevent unauthorized entry of personnel. Maintain an access log of employees working in PCB controlled areas.
- All PCB waste must be stored and disposed of in compliance with TSCA regulations, and all records involving PCB must be properly maintained.
- Inspect PCB waste containers for seal tightness in a timely manner.

11.5 Mercury-Containing Light Tubes, Switches, and HID Bulbs

Trained employees are required to perform disturbance, removal, or spill cleanup of mercury-containing light tubes or suspect mercury-containing light switches, and the work must be performed in accordance with EPA and OSHA regulations. Safeguards, precautions, and protective measures must be implemented to prevent mercury exposure. Applicable work practice guidelines involving mercury-containing items and/or mercury-contaminated materials are summarized, but are not limited to:

- Employees must anticipate hazards, implement appropriate engineering controls and PPE, and ventilate the affected area if light tubes or bulbs are broken.
- All work involving mercury-containing items must be conducted by properly trained and equipped personnel.

- A written mercury spill response plan may aid in spill response should a mercury release occur.
- Maintain a mercury spill kit on site.
- Clean up leaks and spills and handle disposal operations in compliance with regulatory requirements and spill kit Safety Data Sheet (SDS).
- Trained employees must ventilate the area and clean up mercury spills using the response kit and appropriate equipment and PPE.
- Establish mercury-controlled areas for removal or spill cleanup to prevent unauthorized entry of personnel. Maintain an access log of employees working in mercury-controlled areas.
- All mercury waste must be stored and disposed of in compliance with EPA regulations, and all records involving mercury must be properly maintained.
- Inspect mercury waste containers for leaks in a timely manner.

11.6 Soil Disturbance

While the levels of heavy metals were below the HDOH EALs, the earthwork may cause a potential exposure to students/staff/faculty, the site workers, and the public via fugitive dust. The routes of exposure to fugitive dust are by inhalation, ingestion, and dermal contact. The Contractor must use engineering controls such as water misting and wind barriers to control fugitive dust. Use of best management practices (BMP), such as dust control and erosion control, must be implemented to prevent surface runoff and migration of dust and soil.

12.0 LIMITATIONS

Industry standard effort was made to identify suspected hazardous building materials during the survey at the project area. However, this does not imply a guarantee that all suspected building materials and hazardous materials were identified by this assessment because certain building materials and/or surfaces may be hidden by walls, flooring, partitions, other building components, or existing equipment or furniture. If any previously unforeseen suspected materials become known, additional assessment may be required prior to the planned renovation and demolition project.

Material quantities provided in this report are based on visual approximations taken at the time of the survey only and should not be used for bidding purpose. It is the Contractor's responsibility to verify the material quantities and volume of waste prior to bidding.

Analytical results provided in this report do not meet the requirements for waste characterizations. Contractor must coordinate with permitted landfills for required waste characterizations.

Any ACM disturbance exceeding 3 square feet or 3 linear feet of friable ACM or generating 0.5 cubic ft of ACM debris is considered a regulated activity. Contractors are required to comply with 29 CFR 1926.1101(k)(3)(i) to identify the presence, location, and quantity of ACM before any work is begun.

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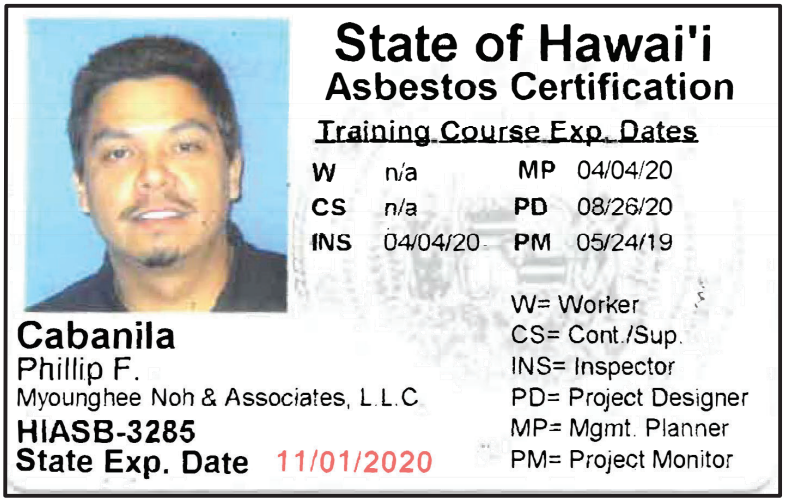
APPENDIX A: INSPECTOR CERTIFICATIONS

Phillip Cabanila

Adam Custer



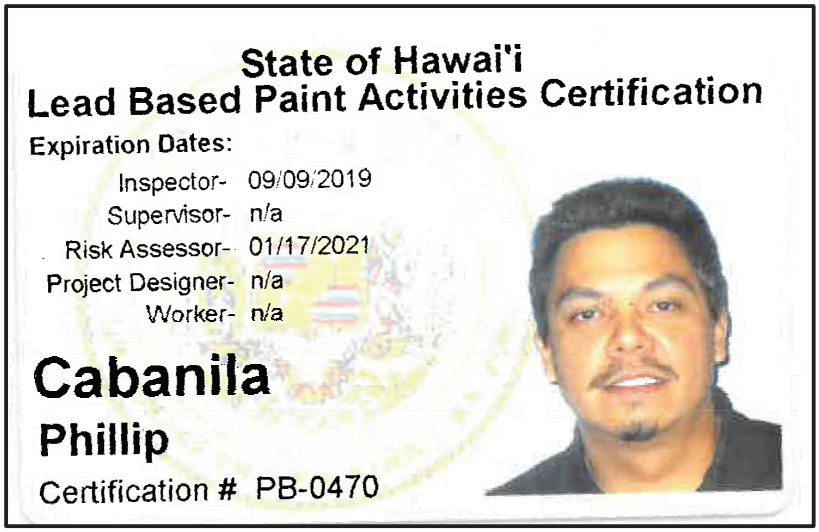
State of Hawai'i
Asbestos Certification

Training Course Exp. Dates

W	n/a	MP	04/04/20
CS	n/a	PD	08/26/20
INS	04/04/20	PM	05/24/19

W= Worker
CS= Cont./Sup.
INS= Inspector
PD= Project Designer
MP= Mgmt. Planner
PM= Project Monitor

Cabanila
Phillip F.
Myounghee Noh & Associates, L.L.C
HIASB-3285
State Exp. Date 11/01/2020

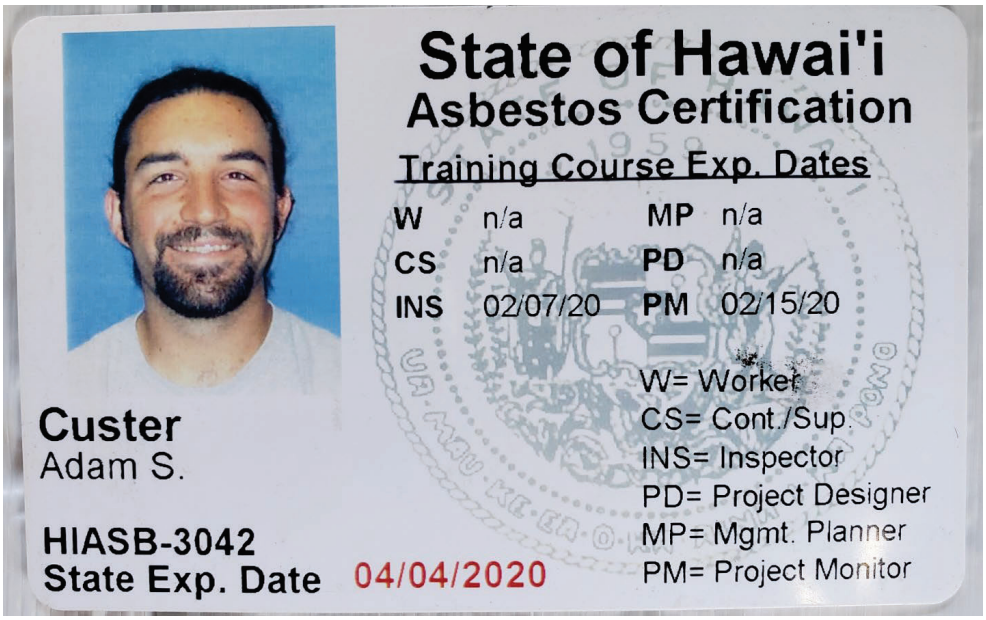


State of Hawai'i
Lead Based Paint Activities Certification

Expiration Dates:

Inspector-	09/09/2019
Supervisor-	n/a
Risk Assessor-	01/17/2021
Project Designer-	n/a
Worker-	n/a

Cabanila
Phillip
Certification # PB-0470



State of Hawai'i
Asbestos Certification

Training Course Exp. Dates

W	n/a	MP	n/a
CS	n/a	PD	n/a
INS	02/07/20	PM	02/15/20

W= Worker
CS= Cont./Sup.
INS= Inspector
PD= Project Designer
MP= Mgmt. Planner
PM= Project Monitor

Custer
Adam S.

HIASB-3042
State Exp. Date 04/04/2020

APPENDIX B: HOMOGENEOUS MATERIALS IDENTIFIED AND SAMPLE TYPES COLLECTED

Homogeneous Materials Identified and Sample Types Collected

HM ID	Building	Areas	Locations	Material Color	Material	Substrate	Asb	Pb	Ars	Result
1	Active Warehouse	Exterior	Beams, columns, conduit, pipes, trusses	Silver	Paint	Metal		X		LBP 19,000 - 51,000 mg/kg
2	Active Warehouse	Exterior	Beams, bollards, columns, trusses	Off-white	Paint	Metal		X		LCP 1,400 - 1,600 mg/kg
3	Active Warehouse	Exterior	Vacuum Tank 1	Beige	Paint	Metal		X		LBP 78,000 - 100,000 mg/kg
4	Active Warehouse	Exterior	Vacuum Tank 2	Aqua with brown underlayer	Paint	Metal		X		LBP 19,000 - 22,000 mg/kg
5	Active Warehouse	Exterior	Door frame, walls, window frame	Off-white	Paint	Wood		X		LCP 1,200 mg/kg
6	Active Warehouse	Office	Walls	White	Paint	Wood		X		LCP 660 - 790 mg/kg
7	Active Warehouse	Exterior	Roofing system, walls	Lt. green	Paint	Transite		X		LBP 47,000 - 52,000 mg/kg
8	Active Warehouse	Exterior	Conduit, electrical box	Gray	Paint	Metal		X		LCP 3,500 - 3,600 mg/kg
9	Active Warehouse	Exterior	Frame, wall	Gray	Paint	Wood		X		LCP 1,100 - 1,300 mg/kg
10	Active Warehouse	Office	Door frame, window frame	Brown	Paint	Wood		X		LCP 1,000 - 1,100 mg/kg

Homogeneous Materials Identified and Sample Types Collected

HM ID	Building	Areas	Locations	Material Color	Material	Substrate	Asb	Pb	Ars	Result
11	**Active Warehouse**	**Office**	**Column**	**Lt. brown**	**Paint**	**Metal**		**X**		**LCP 3,100 - 3,700 mg/kg**
12	**Active Warehouse**	**Office**	**Door**	**Lt. brown**	**Paint**	**Wood**		**X**		**LCP 1,300 - 1,500 mg/kg**
13	Active Warehouse	Office	Ceiling	White	Paint	Canec		X		<40 mg/kg
14	**Active Warehouse**	**Office**	**Cabinets, walls**	**Lt. green**	**Paint**	**Wood**		**X**		**LBP 9,500 - 11,000 mg/kg**
15	**Inactive Warehouse**	**Exterior**	**Roofing system, walls**	**Beige**	**Paint**	**Metal**		**X**		**LCP 130 - 150 mg/kg**
16	Inactive Warehouse	Exterior	Beams, flashing, walls	Green	Paint	Metal		X		<40 mg/kg
17	Inactive Warehouse	Exterior	Footing	Lt. brown	Paint	Concrete		X		<40 mg/kg
18	**Inactive Warehouse**	**Main Room**	**Beams, ceiling**	**Lt. green**	**Paint**	**Metal**		**X**		**LCP 76 - 80 mg/kg**
19	**Inactive Warehouse**	**Main Room**	**Beams, columns**	**Lt. brown**	**Paint**	**Metal**		**X**		**LBP 4,800 - 5,700 mg/kg**
20	Inactive Warehouse	Main Room	Column base, footing	Lt. brown	Paint	Concrete		X		<40 mg/kg
21	**Inactive Warehouse**	**Main Room**	**Walls**	**Beige**	**Paint**	**Metal**		**X**		**LCP 40 mg/kg**
22	Inactive Warehouse	Main Room	Walls	Lt. gray	Paint	Wood		X		<40 mg/kg
23	**Inactive Warehouse**	**Main Room**	**Doors, door frames**	**Tan**	**Paint**	**Metal**		**X**		**LCP 220 mg/kg**
24	Inactive Warehouse	Main Room	Bollards, column base, tank base	Yellow	Paint	Concrete		X		<40 mg/kg

Homogeneous Materials Identified and Sample Types Collected

HM ID	Building	Areas	Locations	Material Color	Material	Substrate	Asb	Pb	Ars	Result
25	**Inactive Warehouse**	**Chilled Rooms 1 and 2**	**Beams, ceilings, columns, walls**	**White**	**Paint**	**Metal**		**X**		**LCP 40 - 46 mg/kg**
26	**Inactive Warehouse**	**Exterior**	**Bollards, bollard base**	**Lt. gray**	**Paint**	**Concrete**		**X**		**LCP <40 - 89**
27	Site Office	Main Room	Walls	Lt. gray	Paint	Drywall		X		<40 mg/kg
28	Site Office	Main Room, Restroom	Door frames, window frames	Lt. gray	Paint	Wood		X		<40 mg/kg
29	Site Office	Main Room, Restroom	Cove base	Lt. brown	Paint	Wood		X		<40 mg/kg
30	**Site Office**	**Exterior**	**Door frames, eaves, fascia, window frames**	**Peach**	**Paint**	**Wood**		**X**		**LCP 40 - 46 mg/kg**
31	**Site Office**	**Exterior**	**Roofing system, walls**	**Green**	**Paint**	**Metal**		**X**		**LCP 270 - 340 mg/kg**
32	**Inactive Warehouse**	**Exterior**	**Panel**	**Yellow**	**Paint**	**Wood**		**X**		**LCP 49 - 52 mg/kg**
33	**Inactive Warehouse**	**Exterior**	**Bollards**	**Gray**	**Paint**	**Metal**		**X**		**LBP 33,000 - 39,000 mg/kg**
34	Active Warehouse	Office	Ceiling	White	Canec	None			X	<38 - <41 mg/kg
35	**Active Warehouse**	**Exterior**	**Roofing system, walls**	**Beige**	**Transite panels**	**None**	**X**			**ACM 20%**

Homogeneous Materials Identified and Sample Types Collected

HM ID	Building	Areas	Locations	Material Color	Material	Substrate	Asb	Pb	Ars	Result
36	Active Warehouse	Cooling Containers 1 and 2	Ceilings, walls	Tan	Insulation	Metal	X			ND
37	Inactive Warehouse	Exterior	Footing	Lt. brown	Skim coat Stucco	Concrete	X			ND
38	Site Office	Main Room	Floor	Beige with streaks	12" x 12" Vinyl tile Mastic	Concrete	X			ND
39	**Site Office**	**Main Room**	**Sink**	**Lt. gray**	**Undercoating**	**Metal**	**X**			**ACM 5%**
40	Site Office	Main Room, Restroom	Ceilings, walls	Lt. gray	Painted drywall Joint compound	None	X			ND
41	Site Office	Restroom	Sink	Lt. gray	Caulking	Porcelain	X			ND
42	Inactive Warehouse	Exterior	Bollard footing	Gray	Paint/skim coat	Concrete	X			ND
43	Site Office	Main Room	Window frames	Gray	Caulking	Metal	X			ND

Bold values indicate results above the reporting limit.

All asbestos found to be chrysotile.

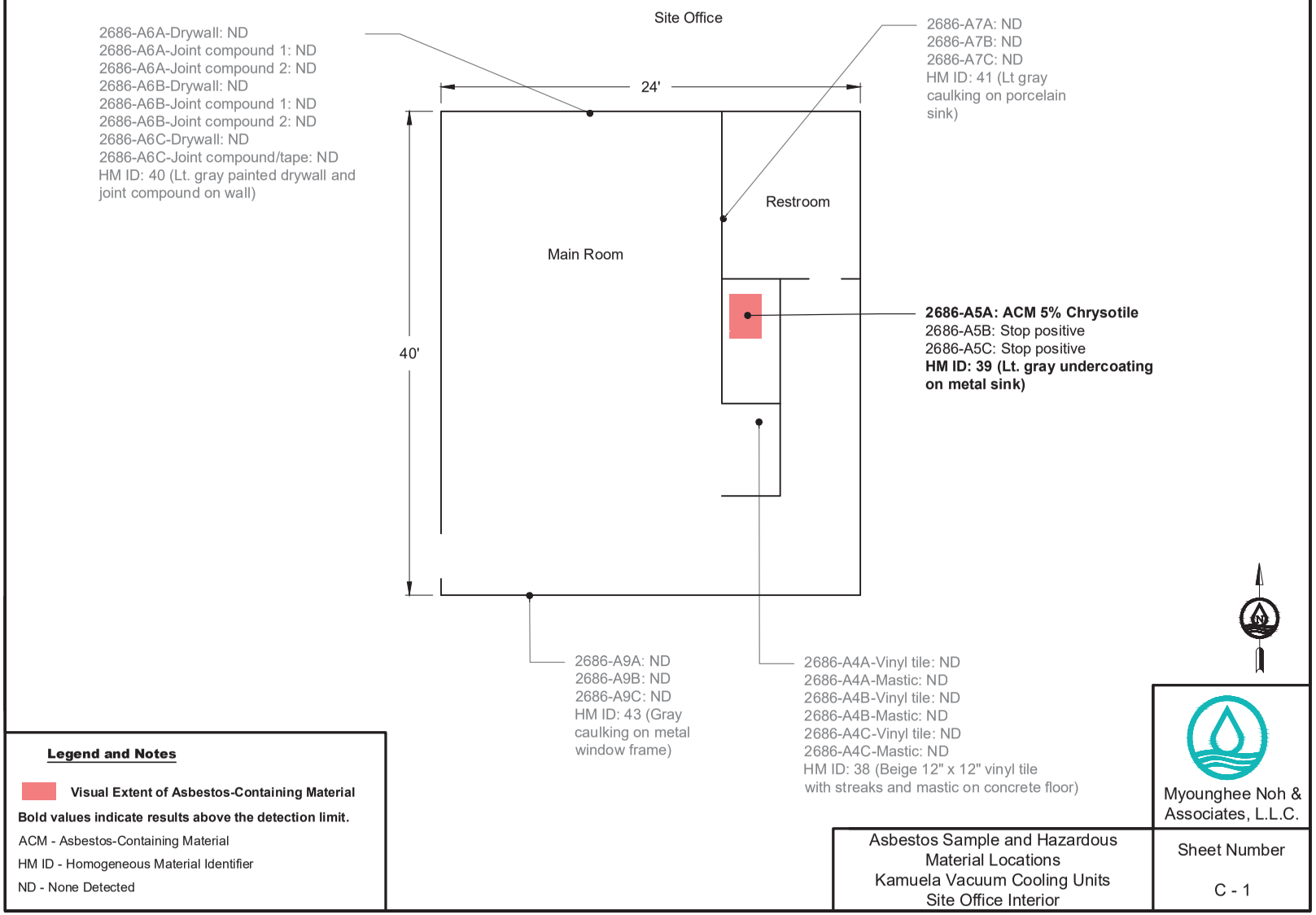
Abbreviations and Acronyms

Asb - Asbestos
ACM - Asbestos-Containing Material
Ars - Arsenic
HM ID - Homogeneous Material Identifier
LBP - Lead-Based Paint ≥5,000 mg/kg
LCP - Lead-Containing Paint <5,000 mg/kg
mg/kg - milligrams per kilogram, equivalent to parts per million
ND - Not Detected
Pb - Lead
Active - Warehouse A
Inactive - Warehouse B

APPENDIX C: SAMPLE AND HAZARDOUS MATERIAL LOCATION DRAWINGS

List of Drawings	
Asbestos and Lead Sample and Hazardous Material Locations – Site Office	C-1 and C-2
Asbestos and Lead Sample and Hazardous Material Locations – Inactive Warehouse	C-3 - C-5
Asbestos and Lead Sample and Hazardous Material Locations – Active Warehouse	C-6 - C-8
Soil Sampling Locations	C-9

HM ID	Locations	Color	Material	Substrate	Results
39	Sink	Lt. gray	Undercoating	Metal	**ACM 5%**



Legend and Notes

Visual Extent of Asbestos-Containing Material

Bold values indicate results above the detection limit.

ACM - Asbestos-Containing Material

HM ID - Homogeneous Material Identifier

ND - None Detected

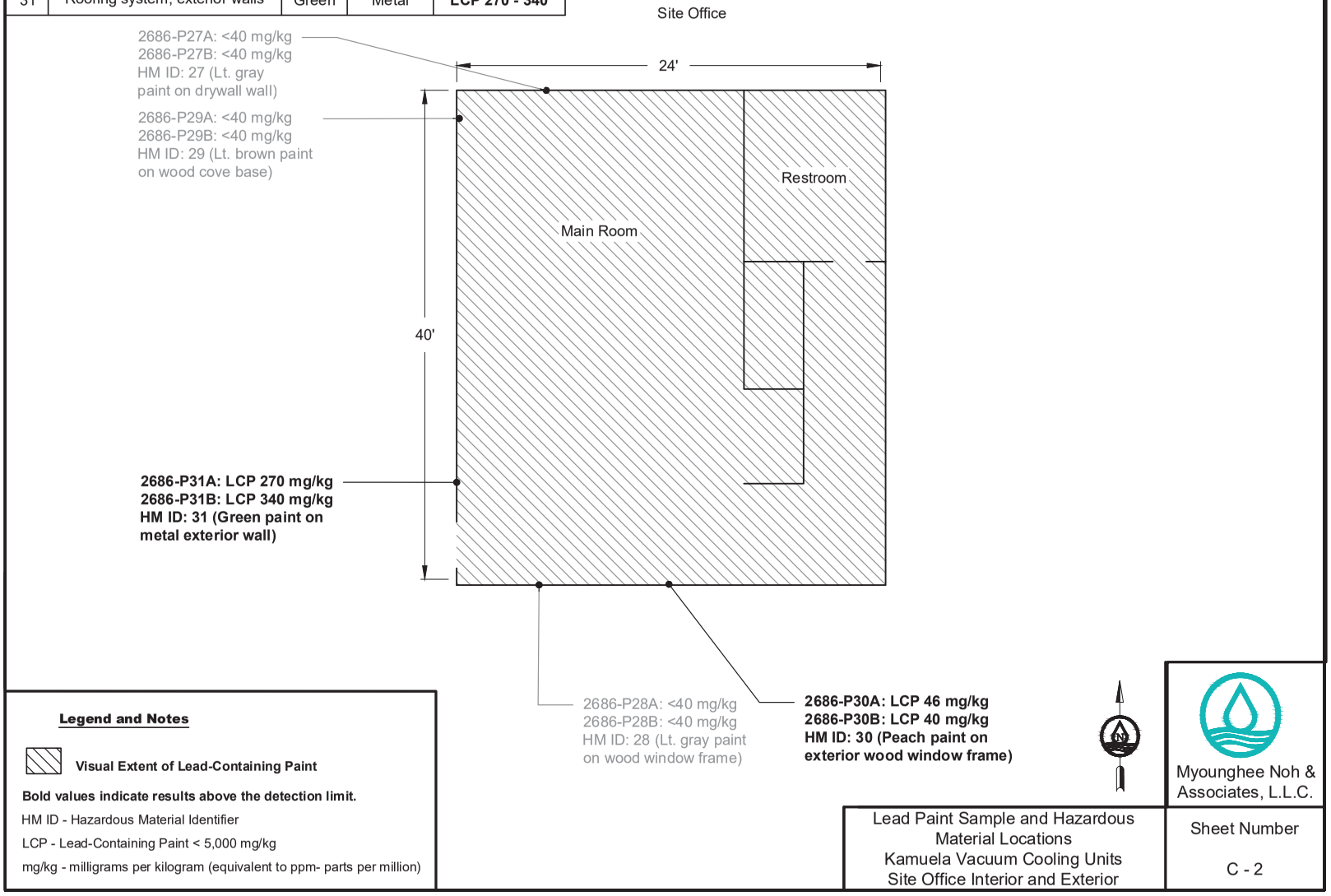
Myounghee Noh & Associates, L.L.C.

Asbestos Sample and Hazardous Material Locations
Kamuela Vacuum Cooling Units
Site Office Interior

Sheet Number

C - 1

HM ID	Locations	Color	Substrate	Results (mg/kg)
30	Exterior door frames, eaves, fascia, window frames	Peach	Wood	**LCP 40 - 46**
31	Roofing system, exterior walls	Green	Metal	**LCP 270 - 340**



Legend and Notes

Visual Extent of Lead-Containing Paint

Bold values indicate results above the detection limit.

HM ID - Hazardous Material Identifier

LCP - Lead-Containing Paint < 5,000 mg/kg

mg/kg - milligrams per kilogram (equivalent to ppm- parts per million)

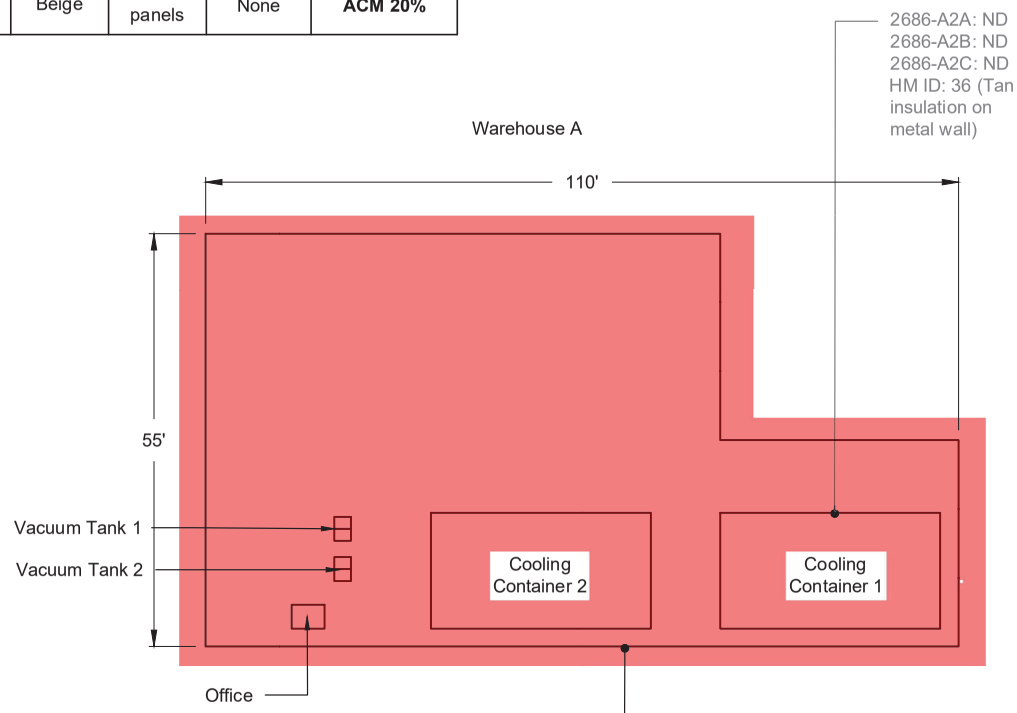
Myounghee Noh & Associates, L.L.C.

Lead Paint Sample and Hazardous Material Locations
Kamuela Vacuum Cooling Units
Site Office Interior and Exterior

Sheet Number

C - 2

HM ID	Locations	Color	Material	Substrate	Results
35	Roofing system, exterior walls	Beige	Cement panels	None	**ACM 20%**



Legend and Notes

Visual Extent of Asbestos-Containing Material

Bold values indicate results above the detection limit.

ACM - Asbestos-Containing Material

HM ID - Homogeneous Material Identifier

ND - None Detected

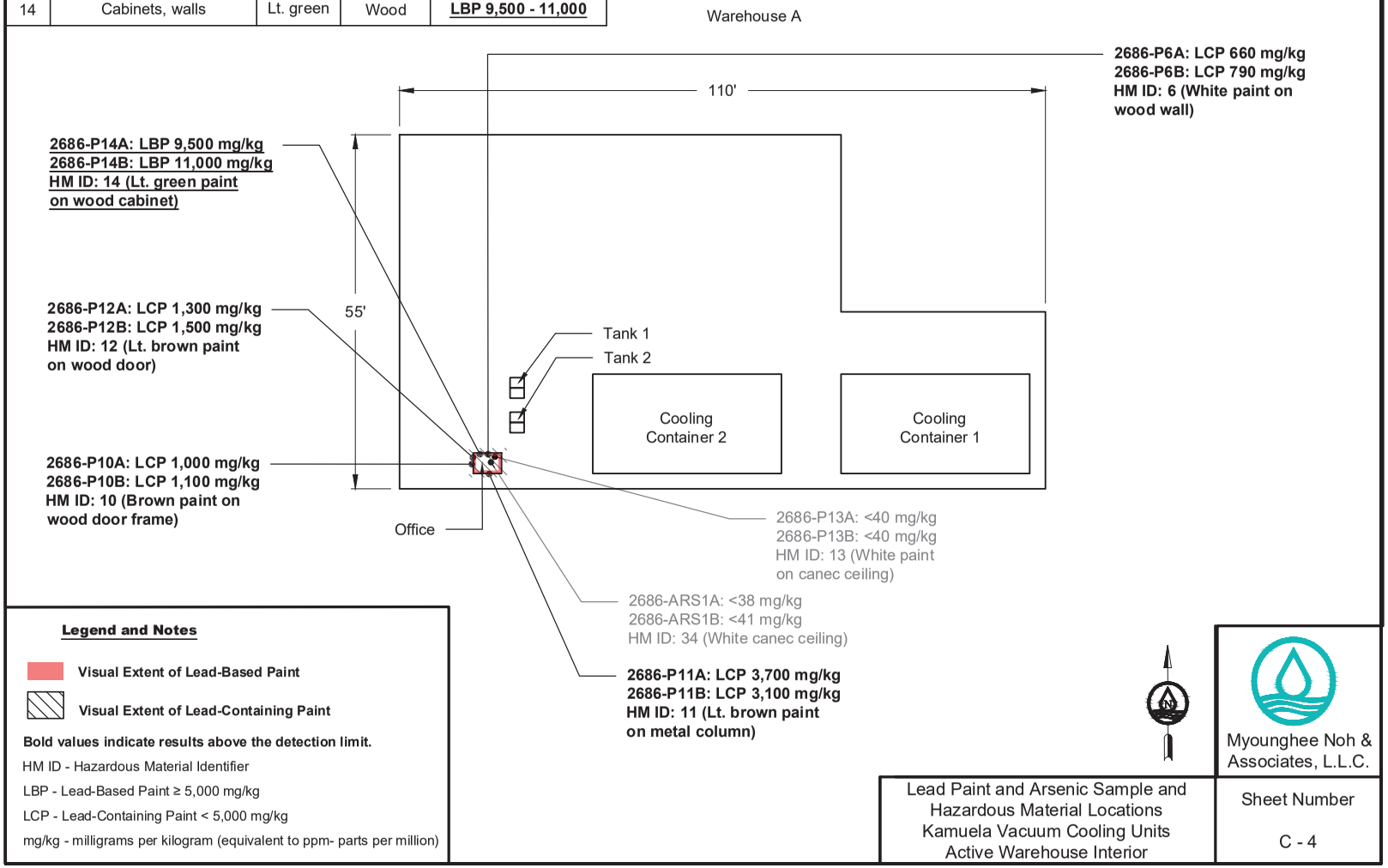
Myounghee Noh & Associates, L.L.C.

Asbestos Sample and Hazardous Material Locations
Kamuela Vacuum Cooling Units
Active Warehouse Interior and Exterior

Sheet Number

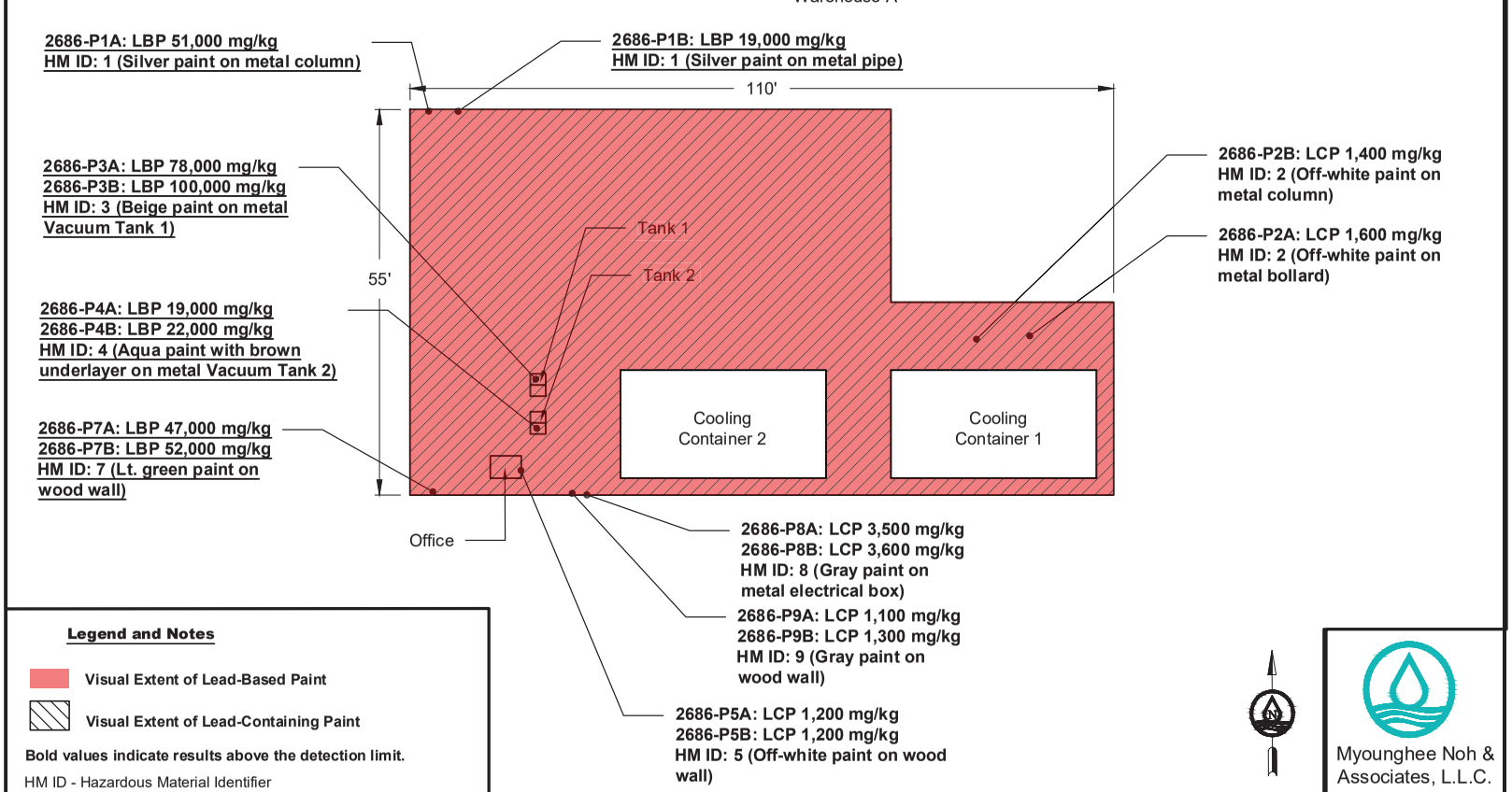
C - 3

HM ID	Locations	Color	Substrate	Results (mg/kg)
6	Walls	White	Wood	**LCP 660 - 790**
10	Door frame, window frame	Brown	Wood	**LCP 1,000 - 1,100**
11	Column	Lt. brown	Metal	**LCP 3,100 - 3,700**
12	Door	Lt. brown	Wood	**LCP 1,300 - 1,500**
14	Cabinets, walls	Lt. green	Wood	**LBP 9,500 - 11,000**



HM ID	Locations	Color	Substrate	Results (mg/kg)
1	Beams, columns, conduit, pipes, trusses	Silver	Metal	**LBP 19,000 - 51,000**
2	Beams, bollards, columns, trusses	Off-white		**LCP 1,400 - 1,600**
3	Vacuum Tank 1	Beige		**LBP 78,000 - 100,000**
4	Vacuum Tank 2	Aqua with brown underlayer		**LBP 19,000 - 22,000**

HM ID	Locations	Color	Substrate	Results (mg/kg)
5	Door frame, walls, window frame	Off-white	Wood	**LCP 1,200**
7	Wall	Lt. green	Wood	**LBP 47,000 - 52,000**
8	Conduit, electrical box	Gray	Metal	**LCP 3,500 - 3,600**
9	Frame, wall	Gray	Wood	**LCP 1,100 - 1,300**



Legend and Notes

Visual Extent of Lead-Based Paint

Visual Extent of Lead-Containing Paint

Bold values indicate results above the detection limit.

HM ID - Hazardous Material Identifier

LBP - Lead-Based Paint ≥ 5,000 mg/kg

LCP - Lead-Containing Paint < 5,000 mg/kg

mg/kg - milligrams per kilogram (equivalent to ppm- parts per million)

Myounghee Noh & Associates, L.L.C.

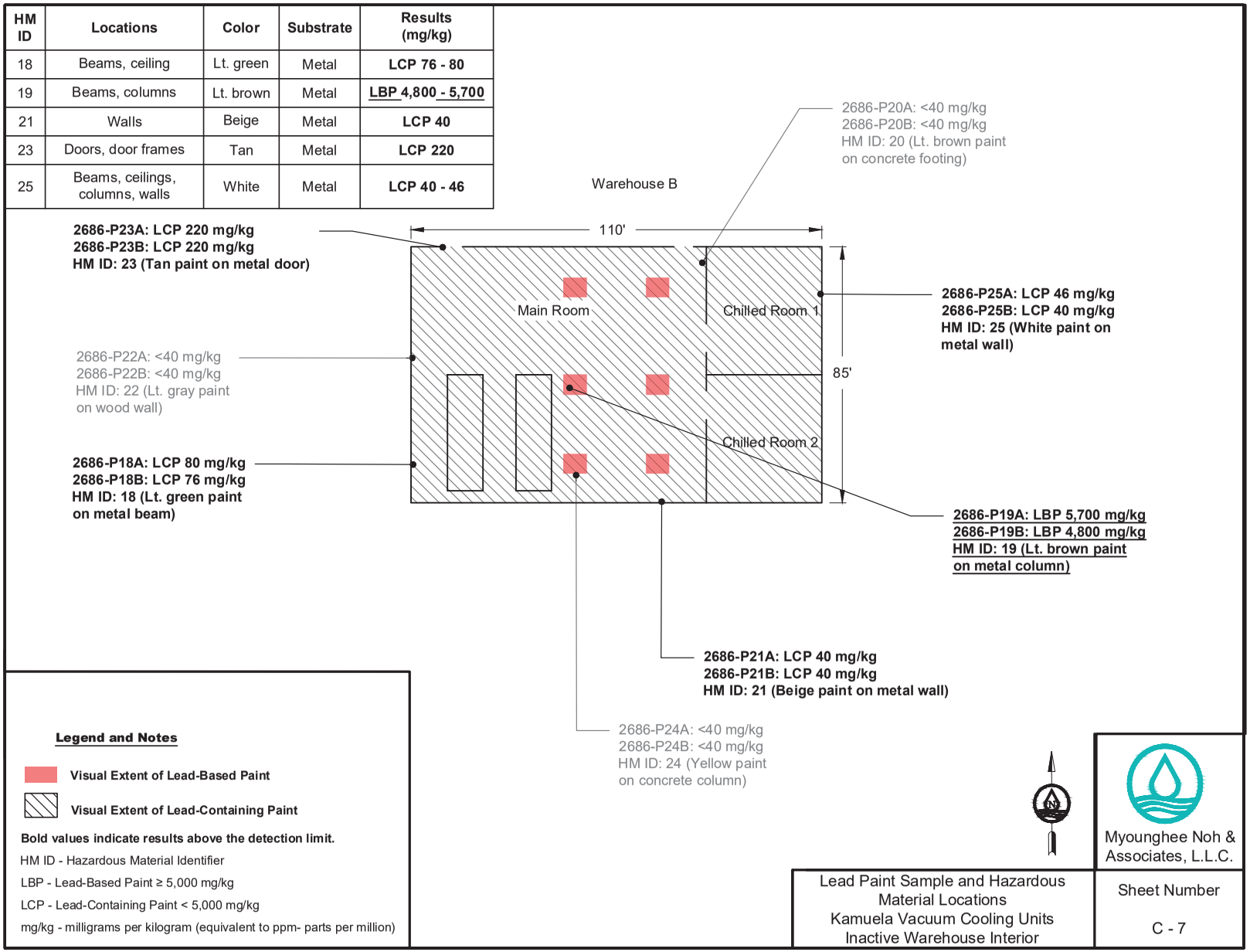
Lead Paint Sample and Hazardous Material Locations
Kamuela Vacuum Cooling Units
Active Warehouse Exterior

Sheet Number

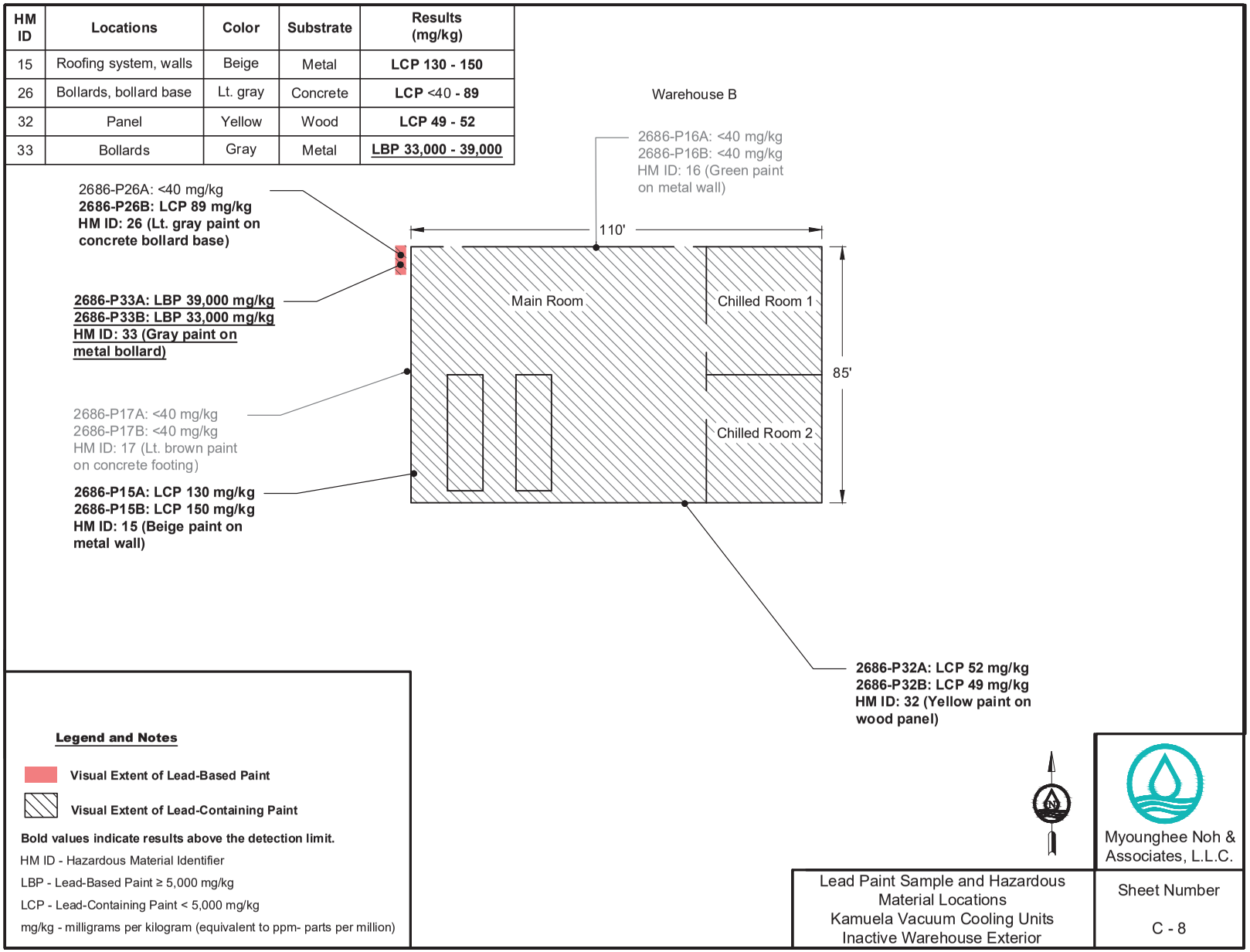
C - 5

Warehouse B
110'
85'
Main Room
Chilled Room 1
Chilled Room 2
2686-A8A-Texture/skim coat: ND
2686-A8B-Texture/skim coat: ND
2686-A8B-Stucco: ND
2686-A8C-Texture/skim coat: ND
2686-A8C-Stucco: ND
HM ID: 42 (Gray paint, skim coat, and stucco on exterior bollard footing)
2686-A3A-Texture paint/skim coat: ND
2686-A3A-Stucco: ND
2686-A3B-Texture paint/skim coat: ND
2686-A3B-Stucco: ND
2686-A3C-Texture paint/skim coat: ND
2686-A3C-Stucco: ND
HM ID: 37 (Lt. brown paint, skim coat, and stucco on exterior footing)
Legend and Notes
HM ID - Homogeneous Material Identifier
ND - None Detected
Asbestos Sample Locations
Kamuela Vacuum Cooling Units
Inactive Warehouse Interior and Exterior
Myounghee Noh & Associates, L.L.C.
Sheet Number
C - 6

HM ID	Locations	Color	Substrate	Results (mg/kg)
18	Beams, ceiling	Lt. green	Metal	**LCP 76 - 80**
19	Beams, columns	Lt. brown	Metal	**LBP 4,800 - 5,700**
21	Walls	Beige	Metal	**LCP 40**
23	Doors, door frames	Tan	Metal	**LCP 220**
25	Beams, ceilings, columns, walls	White	Metal	**LCP 40 - 46**



HM ID	Locations	Color	Substrate	Results (mg/kg)
15	Roofing system, walls	Beige	Metal	**LCP 130 - 150**
26	Bollards, bollard base	Lt. gray	Concrete	**LCP <40 - 89**
32	Panel	Yellow	Wood	**LCP 49 - 52**
33	Bollards	Gray	Metal	**LBP 33,000 - 39,000**



Legend and Notes

Visual Extent of Lead-Based Paint

Visual Extent of Lead-Containing Paint

Bold values indicate results above the detection limit.

HM ID - Hazardous Material Identifier

LBP - Lead-Based Paint ≥ 5,000 mg/kg

LCP - Lead-Containing Paint < 5,000 mg/kg

mg/kg - milligrams per kilogram (equivalent to ppm- parts per million)

Myounghee Noh & Associates, L.L.C.

Lead Paint Sample and Hazardous Material Locations
Kamuela Vacuum Cooling Units
Inactive Warehouse Exterior

Sheet Number

C - 8

Inactive Warehouse
DU-02-A (0-0.5 ft beneath the pavement)
DU-02-B (0.5-1.5 ft beneath the pavement)
DU-01-A1, A2, A3 (0-0.5 ft beneath the pavement)
DU-01-B (0.5-1.5 ft beneath the pavement)
Active Warehouse
Notes
DU - Decision Unit
Each sample combined 30 increments.
Scale (ft.)
0 10 20 30
Soil Sampling Locations
Kamuela Vacuum Cooling Units
Active Warehouse
Myounghee Noh & Associates, L.L.C.
Sheet Number
C - 9

APPENDIX D: PHOTOGRAPHS

HM ID: 1
Active Warehouse

Exterior
Silver paint on metal column.

LBP
2686-P1A: 51,000 mg/kg
2686-P1B: 19,000 mg/kg

HM ID: 2
Active Warehouse

Exterior
Off-white paint on metal bollard.

LCP
2686-P2A: 1,600 mg/kg
2686-P2B: 1,400 mg/kg

HM ID: 3
Active Warehouse

Exterior
Beige paint on metal vacuum tank #1.

LBP
2686-P3A: 78,000 mg/kg
2686-P3B: 100,000 mg/kg

HM ID: 4
Active Warehouse

Exterior
Aqua paint with brown underlayer on metal vacuum tank #2.

LBP
2686-P4A: 19,000 mg/kg
2686-P4B: 22,000 mg/kg

HM ID: 5
Active Warehouse

Office
Off-white paint on wood wall.

LCP
2686-P5A: 1,200 mg/kg
2686-P5B: 1,200 mg/kg

HM ID: 6
Active Warehouse

Office
White paint on wood wall.

LCP
2686-P6A: 660 mg/kg
2686-P6B: 790 mg/kg

HM ID: 7
Active Warehouse

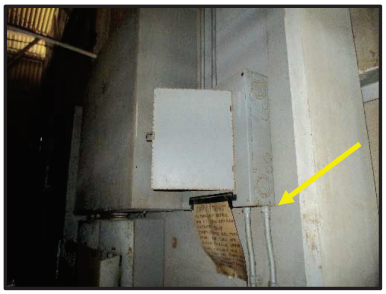
Exterior
Light green paint on wood wall.

LBP
2686-P7A: 47,000 mg/kg
2686-P7B: 52,000 mg/kg

HM ID: 8
Active Warehouse

Exterior
Gray paint on metal electrical box.

LCP
2686-P8A: 3,500 mg/kg
2686-P8B: 3,600 mg/kg



HM ID: 9
Active Warehouse

Exterior
Gray paint on wood wall.

LCP
2686-P9A: 1,100 mg/kg
2686-P9B: 1,300 mg/kg

HM ID: 10
Active Warehouse

Office
Brown paint on wood door frame.

LCP
2686-P10A: 1,000 mg/kg
2686-P10B: 1,100 mg/kg

HM ID: 11
Active Warehouse

Office
Light brown paint on metal column.

LCP
2686-P11A: 3,700 mg/kg
2686-P11B: 3,100 mg/kg

HM ID: 12
Active Warehouse

Office
Light brown paint on wood door.

LCP
2686-P12A: 1,300 mg/kg
2686-P12B: 1,500 mg/kg

HM ID: 13
Active Warehouse

Office
White paint on canec ceiling.

Non-LCP
2686-P13A: <40 mg/kg
2686-P13B: <40 mg/kg

HM ID: 14
Active Warehouse

Office
Light green paint on wood cabinet.

LBP
2686-P14A: 9,500 mg/kg
2686-P14B: 11,000 mg/kg

HM ID: 15
Inactive Warehouse

Exterior
Beige paint on metal wall.

LCP
2686-P15A: 130 mg/kg
2686-P15B: 150 mg/kg

HM ID: 16
Inactive Warehouse

Exterior
Green paint on metal wall.

Non-LCP
2686-P16A: <40 mg/kg
2686-P16B: <40 mg/kg

HM ID: 17
Inactive Warehouse

Exterior
Light brown paint on concrete footing.

Non-LCP
2686-P17A: <40 mg/kg
2686-P17B: <40 mg/kg

HM ID: 18
Inactive Warehouse

Main Room
Light green paint on metal beams.

LCP
2686-P18A: 80 mg/kg
2686-P18B: 76 mg/kg

HM ID: 19
Inactive Warehouse

Main Room
Light brown paint on metal column.

LBP
2686-P19A: 5,700 mg/kg
2686-P19B: 4,800 mg/kg

HM ID: 20
Inactive Warehouse

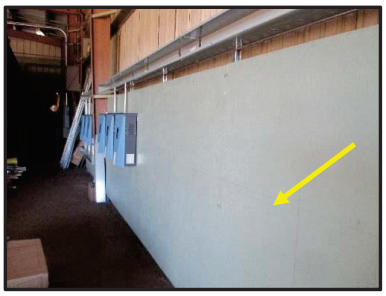
Main Room
Light brown paint on concrete footing.

Non-LCP
2686-P20A: <40 mg/kg
2686-P20B: <40 mg/kg

HM ID: 21
Inactive Warehouse

Main Room
Beige paint on metal wall.

LCP
2686-P21A: 40 mg/kg
2686-P21B: 40 mg/kg



HM ID: 22
Inactive Warehouse

Main Room
Light gray paint on wood wall.

Non-LCP
2686-P22A: <40 mg/kg
2686-P22B: <40 mg/kg

HM ID: 23
Inactive Warehouse

Main Room
Tan paint on metal door.

LCP
2686-P23A: 220 mg/kg
2686-P23B: 220 mg/kg

HM ID: 24
Inactive Warehouse

Main Room
Yellow paint on concrete column base.

Non-LCP
2686-P24A: <40 mg/kg
2686-P24B: <40 mg/kg

HM ID: 25
Inactive Warehouse

Chilled Room 1
White paint on metal wall.

LCP
2686-P25A: 46 mg/kg
2686-P25B: 40 mg/kg

HM ID: 26
Inactive Warehouse

Exterior
Light gray paint on concrete bollard base.

LCP
2686-P26A: <40 mg/kg
2686-P26B: 89 mg/kg

HM ID: 27
Site Office

Main Room
Light gray paint on drywall wall.

Non-LCP
2686-P27A: <40 mg/kg
2686-P27B: <40 mg/kg

HM ID: 28
Site Office

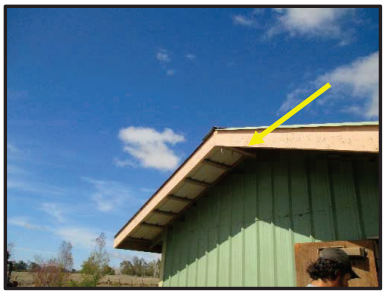
Main Room
Light gray paint on wood window frame.

Non-LCP
2686-P28A: <40 mg/kg
2686-P28B: <40 mg/kg

HM ID: 29
Site Office

Main Room
Light brown paint on wood cove base.

Non-LCP
2686-P29A: <40 mg/kg
2686-P29B: <40 mg/kg



HM ID: 30
Site Office

Exterior
Peach paint on wood eave.

LCP
2686-P30A: 46 mg/kg
2686-P30B: 40 mg/kg

HM ID: 31
Site Office

Exterior
Green paint on metal wall.

LCP
2686-P31A: 270 mg/kg
2686-P31B: 340 mg/kg

HM ID: 32
Inactive Warehouse

Exterior
Yellow paint on wood panel.

LCP
2686-P32A: 52 mg/kg
2686-P32B: 49 mg/kg

HM ID: 33
Inactive Warehouse

Exterior
Gray paint on metal bollard.

LBP
2686-P33A: 39,000 mg/kg
2686-P33B: 33,000 mg/kg

HM ID: 34
Active Warehouse

Office
White canec on ceiling.

Non-Arsenic
2686-ARS1A: <38 mg/kg
2686-ARS1B: <41 mg/kg

HM ID: 35
Active Warehouse

Exterior
Beige transite panel on wall.

ACM
2686-A1A: 20% Chrysotile
2686-A1B: Stop positive
2686-A1C: Stop positive

HM ID: 36
Active Warehouse

Cooling Container 1
Tan insulation on metal wall.

Non-ACM
2686-A2A: ND
2686-A2B: ND
2686-A2C: ND

HM ID: 37
Inactive Warehouse

Exterior
Light brown skim coat and stucco on concrete footing.

Non-ACM
2686-A3A-Texture/skim coat: ND
2686-A3A-Stucco: ND
2686-A3B-Texture/skim coat: ND
2686-A3B-Stucco: ND
2686-A3C-Texture/skim coat: ND
2686-A3C-Stucco: ND

HM ID: 38
Site Office

Main Room
Beige 12” x 12” vinyl tile with streaks and mastic on concrete floor.

Non-ACM
2686-A4A-VFT: ND
2686-A4A-Mastic: ND
2686-A4B-VFT: ND
2686-A4B-Mastic: ND
2686-A4C-VFT: ND
2686-A4C-Mastic: ND

HM ID: 39
Site Office

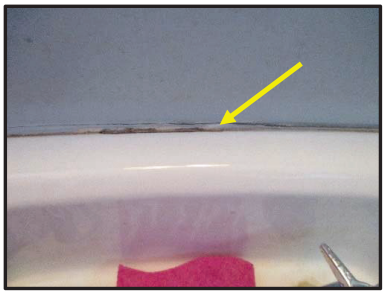
Main Room
Light gray undercoating on metal sink.

ACM
2686-A5A: 5% Chrysotile
2686-A5B: Stop positive
2686-A5C: Stop positive

HM ID: 40
Site Office

Main Room
Light gray painted drywall and joint compound on wall.

Non-ACM
2686-A6A-Drywall: ND
2686-A6A-Joint compound 1: ND
2686-A6A-Joint compound 2: ND
2686-A6B-Drywall: ND
2686-A6B-Joint compound 1: ND
2686-A6B-Joint compound 2: ND
2686-A6C-Drywall: ND
2686-A6C-Joint compound/tape: ND



HM ID: 41
Site Office

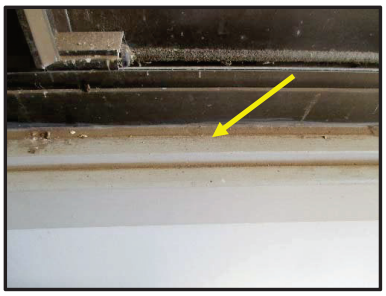
Restroom
Light gray caulking on porcelain sink.

Non-ACM
2686-A7A: ND
2686-A7B: ND
2686-A7C: ND

HM ID: 42
Inactive Warehouse

Exterior
Gray paint and skim coat on concrete bollard footing.

Non-ACM
2686-A8A-Texture/skim coat: ND
2686-A8B-Texture/skim coat: ND
2686-A8C-Texture/skim coat: ND
2686-A8C-Stucco: ND



HM ID: 43
Site Office

Main Room
Gray caulking on metal window frame.

Non-ACM
2686-A9A: ND
2686-A9B: ND
2686-A9C: ND

APPENDIX E: LABORATORY ANALYTICAL REPORTS

LA Testing

520 Mission Street South Pasadena, CA 91030
Tel/Fax: (323) 254-9960 / (323) 254-9982
http://www.LATesting.com / pasadenalab@latesting.com

LA Testing Order:	321926773
Customer ID:	32MYOU50
Customer PO:	
Project ID:	

Attention:	Phillip Cabanila	**Phone:**	(808) 937-1807
	Myounghee Noh & Associates, LLC	**Fax:**	
	99-1046 Iwaena Street	**Received Date:**	12/17/2019 10:50 AM
	Suite 210A	**Analysis Date:**	12/17/2019 - 12/18/2019
	Aiea, HI 96701	**Collected Date:**	11/26/2019
Project:	2686_2 Waimea Vacuum Cooling Facility		

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
2686-A1A *321926773-0001*	WHA, ext. - Beige, transite paneling	Gray/White Fibrous Homogeneous		80% Non-fibrous (Other)	20% Chrysotile
2686-A1B *321926773-0002*	WHA, ext. - Beige, transite paneling				Positive Stop (Not Analyzed)
2686-A1C *321926773-0003*	WHA, ext. - Beige, transite paneling				Positive Stop (Not Analyzed)
2686-A2A *321926773-0004*	WHA, cooling container 1 & 2 - Tan, insulation	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2686-A2B *321926773-0005*	WHA, cooling container 1 & 2 - Tan, insulation	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2686-A2C *321926773-0006*	WHA, cooling container 1 & 2 - Tan, insulation	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2686-A3A-Texture/Skim Coat *321926773-0007* *Unable to separate*	WHB, ext. - Lt. brn, SC	White/Red Non-Fibrous Heterogeneous		100% Non-fibrous (Other)	None Detected
2686-A3A-Stuco *321926773-0007A*	WHB, ext. - Lt. brn, SC	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2686-A3B-Texture/Skim Coat *321926773-0008* *Unable to separate*	WHB, ext. - Lt. brn, SC	White/Red Non-Fibrous Heterogeneous		100% Non-fibrous (Other)	None Detected
2686-A3B-Stucco *321926773-0008A*	WHB, ext. - Lt. brn, SC	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2686-A3C-Texture Paint/Skim Coat *321926773-0009* *Unable to separate*	WHB, ext. - Lt. brn, SC	White/Red Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2686-A3C-Stucco *321926773-0009A*	WHB, ext. - Lt. brn, SC	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2686-A4A-Vinyl Floor Tile *321926773-0010*	Site office, main - Beige w/ streaks, 12"x12" VT w/ mastic	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2686-A4A-Mastic *321926773-0010A*	Site office, main - Beige w/ streaks, 12"x12" VT w/ mastic	Black Non-Fibrous Homogeneous	10% Fibrous (Other)	90% Non-fibrous (Other)	None Detected

Initial report from: 12/18/2019 11:09:02

Existing Conditions - Asbestos/Lead/Hazardous Material Survey
01715-63

LA Testing
520 Mission Street South Pasadena, CA 91030
Tel/Fax: (323) 254-9960 / (323) 254-9982
http://www.LATesting.com / pasadenalab@latesting.com

LA Testing Order:	321926773
Customer ID:	32MYOU50
Customer PO:	
Project ID:	

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
2686-A4B-Vinyl Floor Tile *321926773-0011*	Site office, main - Beige w/ streaks, 12"x12" VT w/ mastic	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2686-A4B-Mastic *321926773-0011A*	Site office, main - Beige w/ streaks, 12"x12" VT w/ mastic	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2686-A4C-VFT *321926773-0012*	Site office, main - Beige w/ streaks, 12"x12" VT w/ mastic	Beige Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2686-A4C-Mastic *321926773-0012A*	Site office, main - Beige w/ streaks, 12"x12" VT w/ mastic	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2686-A5A *321926773-0013*	Site office, main - Lt. gray, undercoat	Purple Non-Fibrous Homogeneous		95% Non-fibrous (Other)	5% Chrysotile
2686-A5B *321926773-0014*	Site office, main - Lt. gray, undercoat				Positive Stop (Not Analyzed)
2686-A5C *321926773-0015*	Site office, main - Lt. gray, undercoat				Positive Stop (Not Analyzed)
2686-A6A-Drywall *321926773-0016*	Site office, main, RR - Lt. gray, painted DW	Brown/White Fibrous Heterogeneous	20% Cellulose 2% Glass	78% Non-fibrous (Other)	None Detected
2686-A6A-Joint Compound 1 *321926773-0016A*	Site office, main, RR - Lt. gray, painted DW	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2686-A6A-Joint Compound 2 *321926773-0016B*	Site office, main, RR - Lt. gray, painted DW	Beige Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2686-A6B-Drywall *321926773-0017*	Site office, main, RR - Lt. gray, painted DW	Brown/White Fibrous Heterogeneous	20% Cellulose 2% Glass	78% Non-fibrous (Other)	None Detected
2686-A6B-Joint Compound 1 *321926773-0017A*	Site office, main, RR - Lt. gray, painted DW	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2686-A6B-Joint Compound 2 *321926773-0017B*	Site office, main, RR - Lt. gray, painted DW	Beige Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2686-A6C-Drywall *321926773-0018*	Site office, main, RR - Lt. gray, painted DW	White Fibrous Homogeneous	8% Cellulose	92% Non-fibrous (Other)	None Detected
2686-A6C-Joint Compound/Tape *321926773-0018A*	Site office, main, RR - Lt. gray, painted DW	White/Beige Fibrous Homogeneous	20% Cellulose	80% Non-fibrous (Other)	None Detected
2686-A7A *321926773-0019*	Site office, RR - Lt. gray, caulking	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2686-A7B *321926773-0020*	Site office, RR - Lt. gray, caulking	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Initial report from: 12/18/2019 11:09:02

Existing Conditions - Asbestos/Lead/Hazardous Material Survey
01715-64

LA Testing
520 Mission Street South Pasadena, CA 91030
Tel/Fax: (323) 254-9960 / (323) 254-9982
http://www.LATesting.com / pasadenalab@latesting.com

LA Testing Order: 321926773
Customer ID: 32MYOU50
Customer PO:
Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
2686-A7C *321926773-0021*	Site office, RR - Lt. gray, caulking	Gray/Beige Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2686-A8A-Texture/Skim Coat *321926773-0022* *Unable to separate*	WHB, ext. - Gray painted, SC	White/Red Non-Fibrous Heterogeneous		100% Non-fibrous (Other)	None Detected
2686-A8B-Texture/Skim Coat *321926773-0023* *Unable to separate*	WHB, ext. - Gray painted, SC	White/Red Non-Fibrous Heterogeneous		100% Non-fibrous (Other)	None Detected
2686-A8B-Stucco *321926773-0023A*	WHB, ext. - Gray painted, SC	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2686-A8C-Texture Paint/Skim Coat *321926773-0024* *Unable to separate*	WHB, ext. - Gray painted, SC	Gray/White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2686-A8C-Stucco *321926773-0024A*	WHB, ext. - Gray painted, SC	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2686-A9A *321926773-0025*	Site office, main - Gray, caulking	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2686-A9B *321926773-0026*	Site office, main - Gray, caulking	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2686-A9C *321926773-0027*	Site office, main - Gray, caulking	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Analyst(s)
Gabriella Figueroa (25)
Nahid Motamedi (11)

Jerry Drapala Ph.D, Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method"), but augmented with procedures outlined in the 1993 ("final") version of the method. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. All samples received in acceptable condition unless otherwise noted. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. EMSL recommends gravimetric reduction for all non-friable organically bound materials prior to analysis. Estimation of uncertainty is available on request.

Samples analyzed by LA Testing South Pasadena, CA NVLAP Lab Code 200232-0, CA ELAP 2283

Initial report from: 12/18/2019 11:09:02

Existing Conditions - Asbestos/Lead/Hazardous Material Survey
01715-65

OrderID: 321926773

Asbestos Chain of Custody

EMSL Order Number (*Lab Use Only*):

#321926773

LATESTING
520 MISSION STREET
SOUTH PASADENA, CA 91030
PHONE: (800)-303-0047
FAX: (323)-254-9962

Company: Myounghee Noh & Associates, LLC	**EMSL-Bill to:** ☐ Same ☐ Different If Bill to is Different note instructions in Comments** *Third Party Billing requires written authorization from third party*
Street: 200 Kohola Street	
City: Hilo **State/Province:** HI	**Zip/Postal Code:** 96720 **Country:** United States of America
Report To (Name): Phillip Cabanila	**Telephone #:** 808-937-1807
Email Address: phillip@noh-associates.com	**Fax #:** **Purchase Order:**
Project Name/Number: 2686_2 Waimea Vacuum Cooling Facility	**Please Provide Results:** ☐ Fax ■ Email ☐ Mail
U.S. State Samples Taken: Hawaii	**Connecticut Samples:** ☐ Commercial ☐ Residential

Turnaround Time (TAT) Options* – Please Check

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

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

PCM - Air ☐ Check if samples are from NY
- ☐ NIOSH 7400
- ☐ w/ OSHA 8hr. TWA

PLM - Bulk (reporting limit)
- ■ PLM EPA 600/R-93/116 (<1%)
- ☐ PLM EPA NOB (<1%)

Point Count
- ☐ 400 (<0.25%) ☐ 1000 (<0.1%)

Point Count w/Gravimetric
- ☐ 400 (<0.25%) ☐ 1000 (<0.1%)
- ☐ NYS 198.1 (friable in NY)
- ☐ NYS 198.6 NOB (non-friable-NY)
- ☐ NIOSH 9002 (<1%)

TEM – Air ☐ **4-4.5hr TAT (AHERA only)**
- ☐ AHERA 40 CFR, Part 763
- ☐ NIOSH 7402
- ☐ EPA Level II
- ☐ ISO 10312

TEM - Bulk
- ☐ TEM EPA NOB
- ☐ NYS NOB 198.4 (non-friable-NY)
- ☐ Chatfield SOP
- ☐ TEM Mass Analysis-EPA 600 sec. 2.5

TEM – Water: EPA 100.2
- Fibers >10µm ☐ Waste ☐ Drinking
- All Fiber Sizes ☐ Waste ☐ Drinking

TEM- Dust
- ☐ Microvac - ASTM D 5755
- ☐ Wipe - ASTM D6480
- ☐ Carpet Sonication (EPA 600/J-93/167)

Soil/Rock/Vermiculite
- ☐ PLM CARB 435 - A (0.25% sensitivity)
- ☐ PLM CARB 435 - B (0.1% sensitivity)
- ☐ TEM CARB 435 - B (0.1% sensitivity)
- ☐ TEM CARB 435 - C (0.01% sensitivity)
- ☐ TEM Qual. via Filtration Technique
- ☐ TEM Qual. via Drop-Mount Technique

Other:
- ☐

■ **Check For Positive Stop – Clearly Identify Homogenous Group** **Filter Pore Size (Air Samples):** ☐ 0.8µm ☐ 0.45µm

Samplers Name: Phillip Cabanila **Samplers Signature:**

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
2686-A1A	Asbestos Bulk	Bulk	11/26/2019
2686-A9C	Asbestos Bulk	Bulk	11/26/2019

Client Sample # (s): 2686-A1A - 2686-A9C **Total # of Samples:** 18

Relinquished (Client): [signature] **Date:** 12/11/19 **Time:**

Received (Lab): D Connolly E-FedEx **Date:** 12-17-19 **Time:** 9:45 am 10:50 C

Comments/Special Instructions:
Stop positive

OrderID: 321926773

LA TESTING

Asbestos Chain of Custody

EMSL Order Number (*Lab Use Only*):

#321926773

EMSL Analytical, Inc.
520 Mission Street
South Pasadena, CA 91030
Phone: (800)-303-0047
Fax: (323)-254-9962

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
2686-A1A	Asbestos Bulk	Bulk	11/26/2019
2686-A9C	Asbestos Bulk	Bulk	11/26/2019

***Comments/Special Instructions:**

Stop positive

#321926773

Hazardous Homogeneous Materials and Sampling Survey Field Form: Asbestos

Project # & Name: 2686_2 HDOA Waimea Vacuum Cooling Facility — Location: Waimea, Island of Hawaii

Inspector Initials: PC, AC — Date & Time: 11/26/2019

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Friable ACM / Type	Area Sq. ft or L. ft	Hatch Color
	WHA	-	EXT.	WALLS, ROOF	BEIGE	TRANSITE PANELING	N/A	G F (P)	Y (N) / TSI S M		

Sample ID	Room Sampled	Sample Location	PIC ID	Notes
2686-A 1 A	EXT.	WALL	0057	55 × 28 / 110
2686-A 1 B	↓	↓		
2686-A 1 C				

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Friable ACM / Type	Area Sq. ft or L. ft	Hatch Color
	WHA	-	COOLING CONTAINER 1 & 2	WALLS, CEILINGS	TAN	INSULATION	M	G F (P)	(Y) N / TSI S M	4,000	

Sample ID	Room Sampled	Sample Location	PIC ID	Notes
2686-A 2 A	CONTAINER 1	WALL	0049	1 = 50×10×10
2686-A 2 B	↓ 1	↓		2 = 30×25×15
2686-A 2 C	↓ 2			

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Friable ACM / Type	Area Sq. ft or L. ft	Hatch Color
	WHB	-	EXT.	FOOTING	LT. BRN	SC	CC	G F (P)	(Y) N / TSI (S) M	250	

Sample ID	Room Sampled	Sample Location	PIC ID	Notes
2686-A 3 A	EXT.	FOOTING	0073	
2686-A 3 B	↓	↓		
2686-A 3 C				

Existing Conditions - Asbestos/Lead/Hazardous Material Survey
01715-68

#321926773

Hazardous Homogeneous Materials and Sampling Survey Field Form: Asbestos

Project # & Name: 2686_2 HDOA Waimea Vacuum Cooling Facility — Location: Waimea, Island of Hawaii

Inspector Initials: PC, AC — Date & Time: 11/26/2019

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Friable ACM / Type	Area Sq. ft or L. ft	Hatch Color
	SITE OFFICE	-	MAIN	FLR	BEIGE w/ STREAKS	12"x12" VT w/ MASTIC	CC	G (F) P	Y (N) / TSI S (M)	450	

Sample ID	Room Sampled	Sample Location	PIC ID	Notes
2686-A 4 A	MAIN ↓		0098	24 x 18'
2686-A 4 B				
2686-A 4 C				

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Friable ACM / Type	Area Sq. ft or L. ft	Hatch Color
	SITE OFFICE	-	MAIN	SINK	UNDERCOAT LT. GRAY	UNDERCOAT	W	(G) F P	(N) / TSI (M)	3	

Sample ID	Room Sampled	Sample Location	PIC ID	Notes
2686-A 5 A	MAIN ↓	SINK ↓	0102	
2686-A 5 B				
2686-A 5 C				

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Friable ACM / Type	Area Sq. ft or L. ft	Hatch Color
	SITE OFFICE	-	MAIN, RR	WALLS, CEILINGS	LT. GRAY	PAINTED DW	NA	(G) F P	(N) / TSI S (M)	1,500	

Sample ID	Room Sampled	Sample Location	PIC ID	Notes
2686-A 6 A	MAIN ↓	WALL ↓	0100, 0101	24'x18'x7 + 20'x8'
2686-A 6 B				
2686-A 6 C				

#321926773

Hazardous Homogeneous Materials and Sampling Survey Field Form: Asbestos

Project # & Name: 2686_2 HDOA Waimea Vacuum Cooling Facility — Location: Waimea, Island of Hawaii

Inspector Initials: PC, AC — Date & Time: 11/26/2019

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Friable ACM / Type	Area Sq. ft or L. ft	Hatch Color
	SITE OFFICE	-	RR	SINK	LT. GRAY	CAULKING	PORCELAIN	G (F) P	Y (N) / TSI S (M)	3	

Sample ID	Room Sampled	Sample Location	PIC ID	Notes
2686-A 7 A	RR	SINK	0104	
2686-A 7 B	↓	↓		
2686-A 7 C				

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Friable ACM / Type	Area Sq. ft or L. ft	Hatch Color
	WHB	-	EXT.	BOLLARD FOOTING	GRAY PAINTED	SC	CC	G F (P)	(N) / TSI (S) M	10	

Sample ID	Room Sampled	Sample Location	PIC ID	Notes
2686-A 8 A	EXT.	BOLLARD FOOTING	0071	
2686-A 8 B	↓	↓		
2686-A 8 C				

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Friable ACM / Type	Area Sq. ft or L. ft	Hatch Color
	SITE OFFICE	-	MAIN	WINDOW FRAMES	GRAY	CAULKING	M	(G) F P	Y (N) / TSI S (M)	60	

Sample ID	Room Sampled	Sample Location	PIC ID	Notes
2686-A 9 A	MAIN	WINDOW FRAMES	0108	
2686-A 9 B	↓	↓		
2686-A 9 C				

Hawaii Analytical Laboratory
ANALYTICAL REPORT

Monday, December 23, 2019

Ms. Myounghee Noh
Myounghee Noh & Associates
99-1046 Iwaena St. Suite 210A
Aiea HI 96701

Phone Number: (808) 484-9214
Facsimile: (808) 484-4660
Email: m_noh@noh-associates.com

Lab Job No: 201910748
Date Submitted: 12/17/2019
Project Name: 2686_2, Waimea Vacuum Cooling Facility, 11/26/19

Total Recoverable Arsenic (FAAS)

EPA Method: 3051m / 7000Bm

Sample No.	Sample Description	Results	Units	Date Analyzed
201963991	2686-ARS1A	< 38	mg/kg	12/20/2019
Comments:				
201963992	2686-ARS1B	< 41	mg/kg	12/20/2019
Comments:				

All Quality Control data are acceptable unless otherwise noted.

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.

Jennifer Hsu Liao
Laboratory Manager

Existing Conditions - Asbestos/Lead/Hazardous Material Survey
01715-72

HAWAII ANALYTICAL LABORATORY, LLC

3615 Harding Avenue, Suite 308
Honolulu, HI 96816
Ph: 808-735-0422 - Fax: 808-735-0047
www.analyzehawaii.com

☐ New Client?

Report To*	Phillip Cabanila
Company	Myounghee Noh & Associates, L.L.C.
Address*	200 Kohola Street Hilo, Hawaii 96720
Phone / Cell No.*	808-937-1807
Report results to	Phillip Cabanila
via email or fax	phillip@noh-associates.com

Invoice To*	Kealohi Serrao
Company	Myounghee Noh & Associates, L.L.C.
Address*	91-1046 Iwaena Street Suite 210 A Aiea, Hawaii 96701
Phone / Cell No.*	
Purchase Order No.	
Email Invoice To	kealohi@noh-associates.com

Need Results By*:
- ☑ 5 Working Days (WD)
- ☐ 4 WD
- ☐ 3 WD
- ☐ 2 WD
- ☐ 24 hours
- ☐ 6 hours or less
- ☐ 4 hours or less
- ☐ 1-2 hours

Site/Project Name:	Client Project No.:	Sampled By:
Waimea Vacuum Cooling Facility	2686_2	Phillip Cabanila/Adam Custer

Comments / Special Instructions: ☐ verbal results needed?

PLM POSITIVE STOP Instructions:
- ☐ Positive stop per SAMPLE
- ☐ Positive stop per LAYER

LAB USE ONLY
Lab Report No.: 201910748

	Sample Identification / Description* (Maxmium of 30 Characters)	Date Sampled* (mm/dd/yy)	Collection Medium	Sample Area / Air Volume	Analysis Requested*	Method Reference	Lab ID
1	2686-ARS1A	11/26/2019	AS Bulk		AS Bulk	7061Am	201963991
2	2686-ARS1B	↓	↓		↓	↓	201963992
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							

Relinquished By (Print and Sign)	Date/Time	Received By (Print and Sign)	Date/Time
PHILLIP CABANILA	12/1/19	Corin Forrest	
			12-17-19A10:03 RCVD

Sample description can be paint chips, concrete, specific sample collection location, etc...
If matrix is 'soil', please specify if it is a FOREIGN SOIL SAMPLE (outside Hawaii) in the comment section.
All samples submitted are subject to Hawaii Analytical Laboratory terms and conditions.
***Required fields, failure to complete these fields may result in a delay in your samples being processed.**

☐ via FedEx ☐ via USPS ☐ via .....

Hazardous Homogeneous Materials and Sampling Survey Field Form: Arsenic

10748

Project # & Name: 2686_2 HDOA Waimea Vacuum Cooling Facility | Location: Waimea, Island of Hawaii

Inspector Initials: PC, AC | Date & Time: 11/26/2019

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Area Sq. ft or L. ft	Hatch Color
	WHA	–	OFFICE	CEILING	WHT PAINTED	CANEC	NA	G (F) P	100	

Sample ID	Room Sampled	Sample Location	Bldg.	PIC ID	Notes
2686-Ars \ A	OFFICE	CEILING		0064	
2686-Ars \ B	↓	↓			

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Area Sq. ft or L. ft	Hatch Color
								G F P		

Sample ID	Room Sampled	Sample Location	Bldg.	PIC ID	Notes
2686-Ars A					
2686-Ars B					

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Area Sq. ft or L. ft	Hatch Color
								G F P		

Sample ID	Room Sampled	Sample Location	Bldg.	PIC ID	Notes
2686-Ars A					
2686-Ars B					

Hawaii Analytical Laboratory
ANALYTICAL REPORT

Thursday, December 26, 2019

Ms. Myounghee Noh
Myounghee Noh & Associates
99-1046 Iwaena St. Suite 210A
Aiea HI 96701

Phone Number: (808) 484-9214
Facsimile: (808) 484-4660
Email: m_noh@noh-associates.com

Lab Job No: 201910746
Date Submitted: 12/17/2019
Your Project: 2686_2, Waimea Vacuum Cooling Facility, 11/26/19

Lead, total (paint chips)

NIOSH Method: 7082m LEAD by FAAS

Sample No.	Your Sample Description	Results	Units	Date Analyzed
201963925	**2686-P1A**	51000	mg/kg	12/20/2019
Comments				
201963926	**2686-P1B**	19000	mg/kg	12/20/2019
Comments				
201963927	**2686-P2A**	1600	mg/kg	12/20/2019
Comments				
201963928	**2686-P2B**	1400	mg/kg	12/20/2019
Comments				
201963929	**2686-P3A**	78000	mg/kg	12/20/2019
Comments				
201963930	**2686-P3B**	100000	mg/kg	12/20/2019
Comments				
201963931	**2686-P4A**	19000	mg/kg	12/20/2019
Comments				
201963932	**2686-P4B**	22000	mg/kg	12/23/2019
Comments				

Ms. Myounghee Noh
Myounghee Noh & Associates
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Aiea HI 96701

Phone Number: (808) 484-9214
Facsimile: (808) 484-4660
Email: m_noh@noh-associates.com

Lab Job No: 201910746
Date Submitted: 12/17/2019
Your Project: 2686_2, Waimea Vacuum Cooling Facility, 11/26/19

Lead, total (paint chips)

NIOSH Method: 7082m LEAD by FAAS

Sample No.	Your Sample Description	Results	Units	Date Analyzed
201963933	**2686-P5A**	1200	mg/kg	12/23/2019
Comments				
201963934	**2686-P5B**	1200	mg/kg	12/23/2019
Comments				
201963935	**2686-P6A**	660	mg/kg	12/23/2019
Comments				
201963936	**2686-P6B**	790	mg/kg	12/23/2019
Comments				
201963937	**2686-P7A**	47000	mg/kg	12/23/2019
Comments				
201963938	**2686-P7B**	52000	mg/kg	12/23/2019
Comments				
201963939	**2686-P8A**	3500	mg/kg	12/23/2019
Comments				
201963940	**2686-P8B**	3600	mg/kg	12/23/2019
Comments				
201963941	**2686-P9A**	1100	mg/kg	12/23/2019
Comments				
201963942	**2686-P9B**	1300	mg/kg	12/23/2019
Comments				
201963943	**2686-P10A**	1000	mg/kg	12/23/2019
Comments				

Ms. Myounghee Noh
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Phone Number: (808) 484-9214
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Email: m_noh@noh-associates.com

Lab Job No: 201910746
Date Submitted: 12/17/2019
Your Project: 2686_2, Waimea Vacuum Cooling Facility, 11/26/19

Lead, total (paint chips)

NIOSH Method: 7082m LEAD by FAAS

Sample No.	Your Sample Description	Results	Units	Date Analyzed
201963944	**2686-P10B**	1100	mg/kg	12/23/2019
Comments				
201963945	**2686-P11A**	3700	mg/kg	12/23/2019
Comments				
201963946	**2686-P11B**	3100	mg/kg	12/23/2019
Comments				
201963947	**2686-P12A**	1300	mg/kg	12/23/2019
Comments				
201963948	**2686-P12B**	1500	mg/kg	12/23/2019
Comments				
201963949	**2686-P13A**	< 40	mg/kg	12/23/2019
Comments				
201963950	**2686-P13B**	< 40	mg/kg	12/23/2019
Comments				
201963951	**2686-P14A**	9500	mg/kg	12/23/2019
Comments				
201963952	**2686-P14B**	11000	mg/kg	12/23/2019
Comments				
201963953	**2686-P15A**	130	mg/kg	12/23/2019
Comments				
201963954	**2686-P15B**	150	mg/kg	12/23/2019
Comments				

Ms. Myounghee Noh
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Phone Number: (808) 484-9214
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Email: m_noh@noh-associates.com

Lab Job No: 201910746
Date Submitted: 12/17/2019
Your Project: 2686_2, Waimea Vacuum Cooling Facility, 11/26/19

Lead, total (paint chips)

NIOSH Method: 7082m LEAD by FAAS

Sample No.	Your Sample Description	Results	Units	Date Analyzed
201963955	**2686-P16A**	< 40	mg/kg	12/23/2019
Comments				
201963956	**2686-P16B**	< 40	mg/kg	12/23/2019
Comments				
201963957	**2686-P17A**	< 40	mg/kg	12/23/2019
Comments				
201963958	**2686-P17B**	< 40	mg/kg	12/23/2019
Comments				
201963959	**2686-P18A**	80	mg/kg	12/23/2019
Comments				
201963960	**2686-P18B**	76	mg/kg	12/23/2019
Comments				
201963961	**2686-P19A**	5700	mg/kg	12/23/2019
Comments				
201963962	**2686-P19B**	4800	mg/kg	12/23/2019
Comments				
201963963	**2686-P20A**	< 40	mg/kg	12/23/2019
Comments				
201963964	**2686-P20B**	< 40	mg/kg	12/23/2019
Comments				
201963965	**2686-P21A**	40	mg/kg	12/23/2019
Comments				

Ms. Myounghee Noh
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Aiea HI 96701

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Facsimile: (808) 484-4660
Email: m_noh@noh-associates.com

Lab Job No: 201910746
Date Submitted: 12/17/2019
Your Project: 2686_2, Waimea Vacuum Cooling Facility, 11/26/19

Lead, total (paint chips)

NIOSH Method: 7082m LEAD by FAAS

Sample No.	Your Sample Description	Results	Units	Date Analyzed
201963966	**2686-P21B**	40	mg/kg	12/23/2019
Comments				
201963967	**2686-P22A**	< 40	mg/kg	12/23/2019
Comments				
201963968	**2686-P22B**	< 40	mg/kg	12/23/2019
Comments				
201963969	**2686-P23A**	220	mg/kg	12/23/2019
Comments				
201963970	**2686-P23B**	220	mg/kg	12/23/2019
Comments				
201963971	**2686-P24A**	< 40	mg/kg	12/23/2019
Comments				
201963972	**2686-P24B**	< 40	mg/kg	12/26/2019
Comments				
201963973	**2686-P25A**	46	mg/kg	12/26/2019
Comments				
201963974	**2686-P25B**	40	mg/kg	12/26/2019
Comments				
201963975	**2686-P26A**	< 40	mg/kg	12/26/2019
Comments				
201963976	**2686-P26B**	89	mg/kg	12/26/2019
Comments				

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Email: m_noh@noh-associates.com

Lab Job No: 201910746
Date Submitted: 12/17/2019
Your Project: 2686_2, Waimea Vacuum Cooling Facility, 11/26/19

Lead, total (paint chips)

NIOSH Method: 7082m LEAD by FAAS

Sample No.	Your Sample Description	Results	Units	Date Analyzed
201963977	**2686-P27A**	< 40	mg/kg	12/26/2019
Comments				
201963978	**2686-P27B**	< 40	mg/kg	12/26/2019
Comments				
201963979	**2686-P28A**	< 40	mg/kg	12/26/2019
Comments				
201963980	**2686-P28B**	< 40	mg/kg	12/26/2019
Comments				
201963981	**2686-P29A**	< 40	mg/kg	12/26/2019
Comments				
201963982	**2686-P29B**	< 40	mg/kg	12/26/2019
Comments				
201963983	**2686-P30A**	46	mg/kg	12/26/2019
Comments				
201963984	**2686-P30B**	40	mg/kg	12/26/2019
Comments				
201963985	**2686-P31A**	270	mg/kg	12/26/2019
Comments				
201963986	**2686-P31B**	340	mg/kg	12/26/2019
Comments				
201963987	**2686-P32A**	52	mg/kg	12/26/2019
Comments				

Ms. Myounghee Noh
Myounghee Noh & Associates
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Aiea HI 96701

Phone Number: (808) 484-9214
Facsimile: (808) 484-4660
Email: m_noh@noh-associates.com

Lab Job No: 201910746
Date Submitted: 12/17/2019
Your Project: 2686_2, Waimea Vacuum Cooling Facility, 11/26/19

Lead, total (paint chips)

NIOSH Method: 7082m LEAD by FAAS

Sample No.	Your Sample Description	Results	Units	Date Analyzed
201963988	**2686-P32B**	49	mg/kg	12/26/2019
Comments				
201963989	**2686-P33A**	39000	mg/kg	12/26/2019
Comments				
201963990	**2686-P33B**	33000	mg/kg	12/26/2019
Comments				

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.

Jennifer Hsu Liao
Laboratory Manager

Existing Conditions - Asbestos/Lead/Hazardous Material Survey
01715-81

HAWAII ANALYTICAL LABORATORY, LLC
3615 Harding Avenue, Suite 308
Honolulu, HI 96816
Ph: 808-735-0422 - Fax: 808-735-0047
www.analyzehawaii.com

☐ New Client?

Report To*	Phillip Cabanila
Company	Myounghee Noh & Associates, L.L.C.
Address*	200 Kohola Street
	Hilo, Hawaii 96720
Phone / Cell No.*	808-937-1807
Report results to	Phillip Cabanila
via email or fax	phillip@noh-associates.com

Invoice To*	Kealohi Serrao
Company	Myounghee Noh & Associates, L.L.C.
Address*	91-1046 Iwaena Street Suite 210 A
	Aiea, Hawaii 96701
Phone / Cell No.*	
Purchase Order No.	
Email Invoice To	kealohi@noh-associates.com

Need Results By*:
- ☑ 5 Working Days (WD)
- ☐ 4 WD
- ☐ 3 WD
- ☐ 2 WD
- ☐ 24 hours
- ☐ 6 hours or less
- ☐ 4 hours or less
- ☐ 1-2 hours

Site/Project Name: Waimea Vacuum Cooling Facility

Client Project No.: 2686_2

Sampled By: Phillip Cabanila/Adam Custer

Comments / Special Instructions: ☐ verbal results needed?

PLM POSITIVE STOP Instructions:
- ☐ Positive stop per SAMPLE
- ☐ Positive stop per LAYER

LAB USE ONLY
Lab Report No.: 201910746

	Sample Identification / Description* (Maxmium of 30 Characters)	Date Sampled* (mm/dd/yy)	Collection Medium	Sample Area / Air Volume	Analysis Requested*	Method Reference	*Lab ID*
1	2686-P1A	11/26/2019	Pb Chips		Pb Chips	7082m	
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12	2686-P33B	11/26/2019	Pb Chips		Pb Chips	7082m	

Relinquished By (Print and Sign)	Date/Time	Received By (Print and Sign)	Date/Time
PHILLIP CABANILA	12/2/19	Corin Forrest	12-17-19A10:05 RCVD

Sample description can be paint chips, concrete, specific sample collection location, etc...
If matrix is 'soil', please specify if it is a FOREIGN SOIL SAMPLE (outside Hawaii) in the comment section.
All samples submitted are subject to Hawaii Analytical Laboratory terms and conditions.
***Required fields, failure to complete these fields may result in a delay in your samples being processed.**

☐ via FedEx ☐ via USPS ☐ via .....

10746

Hazardous Homogeneous Materials and Sampling Survey Field Form: Lead Paint

Project # & Name: 2686_2 HDOA Waimea Vacuum Cooling Facility | Location: Waimea, Island of Hawaii

Inspector Initials: PC, AC | Date & Time: 11/26/2019

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Area Sq. ft or L. ft	Hatch Color
	WHA	-	EXT.	COLUMNS, BEAMS, TRUSSES, PIPES, CONDUIT	SILVER	P	M	G F (P)	5,000	

Sample ID	Room Sampled	Sample Location	PIC ID	Notes
2686-P 1 A	EXT. 201963925	COLUMNS	0052, 0053	
2686-P 1 B	↓ 201963926	PIPES		

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Area Sq. ft or L. ft	Hatch Color
	WHA	-	EXT.	COLUMNS, BEAMS, TRUSSES, BOLLARDS	GW	P	M	G F (P)	2,000	

Sample ID	Room Sampled	Sample Location	PIC ID	Notes
2686-P 2 A	EXT. 201963927	~~COLUMNS~~ BOLLARD	0050, 0051	
2686-P 2 B	↓ 201963928	~~BOLLARD~~ COLUMN		

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Area ~~Sq. ft~~ or L. ft	Hatch Color
	WHA	-	EXT.	VAC TANK 1	BEIGE	P	M	G F (P)	300	

Sample ID	Room Sampled	Sample Location	PIC ID	Notes
2686-P 3 A	EXT. 201963929	VAC TANK 1	0054	
2686-P 3 B	↓ 201963930	↓		

Existing Conditions - Asbestos/Lead/Hazardous Material Survey

01715-82

10746

Hazardous Homogeneous Materials and Sampling Survey Field Form: Lead Paint

Project # & Name: 2686_2 HDOA Waimea Vacuum Cooling Facility | Location: Waimea, Island of Hawaii

Inspector Initials: PC, AC | Date & Time: 11/26/2019

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Area Sq. ft or L. ft	Hatch Color
	WHA	-	EXT.	VAC TANK 2	AQUA w/ BROWN UNDERLAYER	P	M	G F(P)	300	

Sample ID	Room Sampled	Sample Location	PIC ID	Notes
2686-P 4 A	EXT. 201963931	VAC TANK 2	0054	
2686-P 4 B	↓ 201963932	↓		

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Area Sq. ft or L. ft	Hatch Color
	WHA	-	EXT.	WALLS, WINDOW FRAMES DOOR FRAME	OW	P	W	G F(P)	500	

Sample ID	Room Sampled	Sample Location	PIC ID	Notes
2686-P 5 A	EXT. 201963933	WALL	0055	OFFICE EXT.
2686-P 5 B	↓ 201963934	↓		

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Area Sq. ft or L. ft	Hatch Color
	WHA	-	OFFICE	WALLS, C	WHT	P	W	G F(P)	300	

Sample ID	Room Sampled	Sample Location	PIC ID	Notes
2686-P 6 A	OFFICE 201963935	WALL	0061	
2686-P 6 B	↓ 201963936	↓		

Existing Conditions - Asbestos/Lead/Hazardous Material Survey

01715-83

Hazardous Homogeneous Materials and Sampling Survey Field Form: Lead Paint

Project # & Name: 2686_2 HDOA Waimea Vacuum Cooling Facility | Location: Waimea, Island of Hawaii

Inspector Initials: PC, AC | Date & Time: 11/26/2019

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Area Sq. ft or L. ft	Hatch Color
	WHA	-	EXT.	WALL	LT. GRN	P	W	G F (P)	20	

Sample ID	Room Sampled	Sample Location	PIC ID	Notes
2686-P 7 A	EXT. 201963937	WALL	0057	
2686-P 7 B	↓ 201963938	↓		

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Area Sq. ft or L. ft	Hatch Color
	WHA	-	EXT.	ELEC. BOXES, CONDUIT	GRAY	P	M	G F (P)	60	

Sample ID	Room Sampled	Sample Location	PIC ID	Notes
2686-P 8 A	EXT. 201963939	ELEC BOX	0059	
2686-P 8 B	↓ 201963940	↓		

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Area Sq. ft or L. ft	Hatch Color
	WHA	-	EXT.	FRAME, WALL	GRAY	P	W	G F (P)	100	

Sample ID	Room Sampled	Sample Location	PIC ID	Notes
2686-P 9 A	EXT. 201963941	WALL	0059	ELEC BOX FRAME/WALL
2686-P 9 B	↓ 201963942	↓		

Existing Conditions - Asbestos/Lead/Hazardous Material Survey

01715-84

10746

Hazardous Homogeneous Materials and Sampling Survey Field Form: Lead Paint

Project # & Name: 2686_2 HDOA Waimea Vacuum Cooling Facility | Location: Waimea, Island of Hawaii

Inspector Initials: PC, AC | Date & Time: 11/26/2019

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Area Sq. ft or L. ft	Hatch Color
	WHA	-	OFFICE	WINDOW & DOOR FRAME	BRN	P	W	G (F) P	50	

Sample ID	Room Sampled	Sample Location	PIC ID	Notes
2686-P 10 A	OFFICE 201963943	DOOR FRAME	0067, 0068	
2686-P 10 B	↓ 201963944	↓		

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Area Sq. ft or L. ft	Hatch Color
	WHA	-	OFFICE	COLUMN	LT. BRN	P	M	G (F) P	10	

Sample ID	Room Sampled	Sample Location	PIC ID	Notes
2686-P 11 A	OFFICE 201963945	COLUMN	0065	
2686-P 11 B	↓ 201963946	↓		

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Area Sq. ft or L. ft	Hatch Color
	WHA	-	OFFICE	DOOR	LT. BRN	P	W	G (F) P	30	

Sample ID	Room Sampled	Sample Location	PIC ID	Notes
2686-P 12 A	OFFICE 201963947	DOOR	0067, 0068	
2686-P 12 B	↓ 201963948	↓		

Existing Conditions - Asbestos/Lead/Hazardous Material Survey

01715-85

Hazardous Homogeneous Materials and Sampling Survey Field Form: Lead Paint

Project # & Name: 2686_2 HDOA Waimea Vacuum Cooling Facility | Location: Waimea, Island of Hawaii

Inspector Initials: PC, AC | Date & Time: 11/26/2019

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Area Sq. ft or L. ft	Hatch Color
	WHA	–	OFFICE	CEILING	WHT	P	CANEC	G (F) P	100	

Sample ID	Room Sampled		Sample Location	PIC ID	Notes
2686-P 13 A	OFFICE	201963949	CEILING	0064	
2686-P 13 B	↓	201963950	↓		

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Area Sq. ft or L. ft	Hatch Color
	WHA	–	OFFICE	CABINETS, WALLS	LT. GRN	P	W	G (F) P	100	

Sample ID	Room Sampled		Sample Location	PIC ID	Notes
2686-P 14 A	OFFICE	201963951	CABINET	0062	
2686-P 14 B	↓	201963952	↓		

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Area Sq. ft or L. ft	Hatch Color
	WHB	–	~~OFI~~ EXT.	WALLS, ROOF	BEIGE	P	M	G F (D)	1900	

Sample ID	Room Sampled		Sample Location	PIC ID	Notes
2686-P 15 A	EXT.	201963953	WALL	0069, 0071, 0076	
2686-P 15 B	↓	201963954	↓		

Existing Conditions - Asbestos/Lead/Hazardous Material Survey

01715-86

Hazardous Homogeneous Materials and Sampling Survey Field Form: Lead Paint

Project # & Name: 2686_2 HDOA Waimea Vacuum Cooling Facility | Location: Waimea, Island of Hawaii

Inspector Initials: PC, AC | Date & Time: 11/26/2019

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Area ~~Sq. ft~~ or L. ft	Hatch Color
	WHB	-	EXT.	WALLS, FLASHING, BEAMS	GRN	P	M	G F (P)	1,500	

Sample ID	Room Sampled	Sample Location	PIC ID	Notes
2686-P 16 A	EXT. 201963955	WALL	0071, 0072, 0073, 0074, 0075	
2686-P 16 B	↓ 201963956	↓		

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Area ~~Sq. ft~~ or L. ft	Hatch Color
	WHB	-	EXT.	FOOTINGS	LT. BRN	P	CC	G F (P)	~~450~~	

Sample ID	Room Sampled	Sample Location	PIC ID	Notes
2686-P 17 A	EXT. 201963957	FOOTINGS	0073	
2686-P 17 B	↓ 201963958	↓		

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Area ~~Sq. ft~~ or L. ft	Hatch Color
	WHB	-	MAIN	BEAMS, CEILING	LT. GRN	P	M	G (F) P	1,800	

Sample ID	Room Sampled	Sample Location	PIC ID	Notes
2686-P 18 A	MAIN 201963959	BEAMS	0077, 0078	
2686-P 18 B	↓ 201963960	↓		

Existing Conditions - Asbestos/Lead/Hazardous Material Survey

01715-87

Hazardous Homogeneous Materials and Sampling Survey Field Form: Lead Paint

Project # & Name: 2686_2 HDOA Waimea Vacuum Cooling Facility | Location: Waimea, Island of Hawaii

Inspector Initials: PC, AC | Date & Time: 11/26/2019

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Area Sq. ft or (L. ft)	Hatch Color
	WHB	-	MAIN	COLUMNS, BEAMS	LT. BRN	P	M	G (F) P	900	

Sample ID	Room Sampled	Sample Location	PIC ID	Notes
2686-P 19 A	MAIN 201963961	COLUMN	0085	
2686-P 19 B	↓ 201963962	↓		

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Area (Sq. ft) or L. ft	Hatch Color
	WHB	-	MAIN, CHILLED RM 1&2	FOOTINGS, COLUMN BASE	LT. BRN	P	CC	G F (P)	1,000	

Sample ID	Room Sampled	Sample Location	PIC ID	Notes
2686-P 20 A	MAIN 201963963	FOOTING	0084	
2686-P 20 B	↓ 201963964	COLUMN BASE		

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Area (Sq. ft) or L. ft	Hatch Color
	WHB	-	MAIN	WALLS	BEIGE	P	M	G (F) P	4,500	

Sample ID	Room Sampled	Sample Location	PIC ID	Notes
2686-P 21 A	MAIN 201963965	WALL	0085	
2686-P 21 B	↓ 201963966	↓		

Existing Conditions - Asbestos/Lead/Hazardous Material Survey

01715-88

Hazardous Homogeneous Materials and Sampling Survey Field Form: Lead Paint

Project # & Name: 2686_2 HDOA Waimea Vacuum Cooling Facility | Location: Waimea, Island of Hawaii

Inspector Initials: PC, AC | Date & Time: 11/26/2019

Existing Conditions - Asbestos/Lead/Hazardous Material Survey 01715-89

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Area Sq. ft or L. ft	Hatch Color
	WHB	-	MAIN	WALLS	LT. GRAY	P	W	G (F) P	250	

Sample ID	Room Sampled		Sample Location	PIC ID	Notes
2686-P 22 A	MAIN	201963967	WALL	0080	ELEC BOX WALL
2686-P 22 B	↓	201963968	↓		

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Area Sq. ft or L. ft	Hatch Color
	WHB	-	MAIN	DOORS, DOOR FRAMES	TAN	P	M	G F (B)	80	

Sample ID	Room Sampled		Sample Location	PIC ID	Notes
2686-P 23 A	MAIN	201963969	DOOR	0081	
2686-P 23 B	↓	201963970	↓		

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Area Sq. ft or L. ft	Hatch Color
	WHB	-	MAIN	COLUMN BASE, TANK BASE, BOLLARDS	Y	P	CC	G (F) P	120	

Sample ID	Room Sampled		Sample Location	PIC ID	Notes
2686-P 24 A	MAIN	201963971	COLUMN BASE	0083	
2686-P 24 B	↓	201963972	↓		

Hazardous Homogeneous Materials and Sampling Survey Field Form: Lead Paint

Project # & Name: 2686_2 HDOA Waimea Vacuum Cooling Facility | Location: Waimea, Island of Hawaii

Inspector Initials: PC, AC | Date & Time: 11/26/2019

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Area Sq. ft or L. ft	Hatch Color
	WHB	-	CHILLED RM 1+2	WALLS, BEAMS, COLUMNS, CEILINGS	WHT	P	M	G F (P)	1,500	

Sample ID	Room Sampled	Sample Location	PIC ID	Notes
2686-P 25 A	CHILLED RM 1 201963973	WALL	0086	
2686-P 25 B	↓ 201963974	COLUMN		

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Area Sq. ft or L. ft	Hatch Color
	WHB	-	EXT.	BOLLARDS, BOLLARD BASE	LT. GRAY	P	CL	G F (P)	20	

Sample ID	Room Sampled	Sample Location	PIC ID	Notes
2686-P 26 A	EXT. 201963975	BOLLARD BASE	0071	
2686-P 26 B	↓ 201963976	↓		

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Area Sq. ft or L. ft	Hatch Color
	SITE OFFICE	-	MAIN	WALLS	LT. GRAY	P	DW	(G) F P		

Sample ID	Room Sampled	Sample Location	PIC ID	Notes
2686-P 27 A	MAIN 201963977	WALL	0099-00 0101	
2686-P 27 B	↓ 201963978	↓		

Existing Conditions - Asbestos/Lead/Hazardous Material Survey 01715-90

Hazardous Homogeneous Materials and Sampling Survey Field Form: Lead Paint

Project # & Name: 2686_2 HDOA Waimea Vacuum Cooling Facility | Location: Waimea, Island of Hawaii

Inspector Initials: PC, AC | Date & Time: 11/26/2019

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Area Sq. ft or L.F.	Hatch Color
	SITE OFFICE	-	MAIN, RR	WINDOW & DOOR FRAMES	LT. GRAY	P	W	G (F) P	150	

Sample ID	Room Sampled	Sample Location	PIC ID	Notes
2686-P 28 A	MAIN 201963979	WINDOW FRAME	0100	
2686-P 28 B	↓ 201963980	↓		

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Area Sq. ft or L.F.	Hatch Color
	SITE OFFICE	-	MAIN, RR	COVE BASE	LT. BRN	P	W	G (F) P	200	

Sample ID	Room Sampled	Sample Location	PIC ID	Notes
2686-P 29 A	MAIN 201963981	COVE BASE	0099	
2686-P 29 B	↓ 201963982	↓		

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Area Sq. ft or L.F.	Hatch Color
	SITE OFFICE	-	EXT.	EAVES, FASCIA, WINDOW FRAMES, DOOR FRAMES	PEACH	P	W	G F (B)	350	

Sample ID	Room Sampled	Sample Location	PIC ID	Notes
2686-P 30 A	EXT. 201963983	WINDOW FRAME	0095 - 0097	
2686-P 30 B	↓ 201963984	EAVES		

Existing Conditions - Asbestos/Lead/Hazardous Material Survey 01715-91

10746

Hazardous Homogeneous Materials and Sampling Survey Field Form: Lead Paint

Project # & Name: 2686_2 HDOA Waimea Vacuum Cooling Facility | Location: Waimea, Island of Hawaii

Inspector Initials: PC, AC | Date & Time: 11/26/2019

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Area Sq. ft or L. ft	Hatch Color
	SITE OFFICE	-	EXT.	WALLS, ROOF	GRN	P	M	G F (P)	600	

Sample ID	Room Sampled	Sample Location	PIC ID	Notes
2686-P 31 A	EXT. 201963985	WALL	0095	
2686-P 31 B	↓ 201963986	↓		

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Area Sq. ft or L. ft	Hatch Color
	WHB	-	EXT.	PANEL	Y	P	W	G F (P)	20	

Sample ID	Room Sampled	Sample Location	PIC ID	Notes
2686-P 32 A	EXT. 201963987	PANEL	0074	
2686-P 32 B	↓ 201963988	↓		

HM ID	Building	Flr.	Rooms	Locations	Material Color	Material	Substrate	Condition	Area Sq. ft or L. ft	Hatch Color
	WHB	-	EXT.	BOLLARDS	GRAY	P	M	G F (P)	30	

Sample ID	Room Sampled	Sample Location	PIC ID	Notes
2686-P 33 A	EXT. 201963989	BOLLARD	0071	
2686-P 33 B	↓ 201963990	↓		

Existing Conditions - Asbestos/Lead/Hazardous Material Survey 01715-92

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Analytical Report

Client	**Advanced Analytical Laboratory**	**Acculab WO#**	**20-AL0507-3**
	544 Ohohia Street #10		
	Honolulu, HI, 96819	Date Sampled	5/1/2020
Project Manager	Uwe Baumgartner/ Elisa Young	Date Received	5/7/2020
Project Name	**2686_2 Kamuela Vacuum Cooling Facility**	Date Reported	5/12/2020
Client Project#	**2686_2**		
Project#	**V375**		

Organochlorine Pesticides in Soil by EPA 8081B/3550C

Accu Lab Batch# AL050820-3

Client sample ID					**2686-DU-01 -A-1**	**2686-DU-01 -A-2**	**2686-DU-01 -A-3**	**2686-DU-01 -B**
Lab ID	**MRL**	**Unit**	**MTH BLK**	**LCS**	20-AL0507-3-1	20-AL0507-3-2	20-AL0507-3-3	20-AL0507-3-4
Matrix			Soil	Soil	Soil	Soil	Soil	Soil
Date Extracted			5/8/2020	5/8/2020	5/8/2020	5/8/2020	5/8/2020	5/8/2020
Date Analyzed			5/8/2020	5/8/2020	5/8/2020	5/8/2020	5/8/2020	5/8/2020
α-BHC	1.0	ug/kg	nd		nd	nd	nd	nd
γ-BHC (Lindane)	1.0	ug/kg	nd	112%	nd	nd	nd	nd
β-BHC	1.0	ug/kg	nd		nd	nd	nd	nd
Heptachlor	1.0	ug/kg	nd	102%	nd	nd	nd	nd
δ-BHC	1.0	ug/kg	nd		nd	nd	nd	nd
Aldrin	1.0	ug/kg	nd	100%	nd	nd	nd	nd
Heptachlor Epoxide	1.0	ug/kg	nd		nd	nd	nd	nd
Endosulfan I	5.0	ug/kg	nd		nd	nd	nd	nd
4,4'-DDE	2.0	ug/kg	nd		nd	nd	nd	12
Dieldrin	1.0	ug/kg	nd	99%	nd	nd	nd	nd
Endrin	1.0	ug/kg	nd	100%	nd	nd	nd	nd
4,4'-DDD	5.0	ug/kg	nd		nd	nd	nd	26
Endosulfan II	5.0	ug/kg	nd		nd	nd	nd	nd
4,4'-DDT	5.0	ug/kg	nd	104%	nd	nd	nd	7.2
Endrin Aldehyde	5.0	ug/kg	nd		nd	nd	nd	nd
Methoxychlor	5.0	ug/kg	nd		nd	nd	nd	nd
Endrin Ketone	5.0	ug/kg	nd		nd	nd	nd	nd
Endosulfan Sulfate	10	ug/kg	nd		nd	nd	nd	nd
Technical Chlordane	0.10	**mg/kg**	nd		nd	nd	nd	nd
Toxaphene	0.20	**mg/kg**	nd		nd	nd	nd	nd
Surrogate Recoveries								
Decachlorobiphenyl			106%	85%	85%	76%	76%	77%
Tetrachloro-m-xylene			117%	89%	72%	70%	74%	66%

Acceptable Recovery Limits:

Surrogates	*50-150%*
LCS/MS/MSD	*50-150%*
Acceptable RPD limit:	*30%*

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Analytical Report

Client	**Advanced Analytical Laboratory**	**Acculab WO#**	**20-AL0507-3**
	544 Ohohia Street #10		
	Honolulu, HI, 96819	Date Sampled	5/1/2020
Project Manager	Uwe Baumgartner/ Elisa Young	Date Received	5/7/2020
Project Name	**2686_2 Kamuela Vacuum Cooling Facility**	Date Reported	5/12/2020
Client Project#	**2686_2**		
Project#	**V375**		

Organochlorine Pesticides in Soil by EPA 8081B/3550C

Accu Lab Batch# AL050820-3

Client sample ID			**2686-DU-02 -A**	**2686-DU-02 -B**	**MS**	**MSD**	**RPD**
Lab ID	**MRL**	**Unit**	20-AL0507-3-5	20-AL0507-3-6	20-AL0507-3-6	20-AL0507-3-6	20-AL0507-3-6
Matrix			Soil	Soil	Soil	Soil	Soil
Date Extracted			5/8/2020	5/8/2020	5/8/2020	5/8/2020	5/8/2020
Date Analyzed			5/8/2020	5/8/2020	5/8/2020	5/8/2020	5/8/2020
α-BHC	1.0	ug/kg	nd	nd			
γ-BHC (Lindane)	1.0	ug/kg	nd	nd	130%	138%	6%
β-BHC	1.0	ug/kg	nd	nd			
Heptachlor	1.0	ug/kg	nd	nd	120%	125%	4%
δ-BHC	1.0	ug/kg	nd	nd			
Aldrin	1.0	ug/kg	nd	nd	108%	114%	5%
Heptachlor Epoxide	1.0	ug/kg	nd	nd			
Endosulfan I	5.0	ug/kg	nd	nd			
4,4'-DDE	2.0	ug/kg	nd	nd			
Dieldrin	1.0	ug/kg	nd	nd	110%	116%	5%
Endrin	1.0	ug/kg	nd	nd	124%	130%	5%
4,4'-DDD	5.0	ug/kg	nd	nd			
Endosulfan II	5.0	ug/kg	nd	nd			
4,4'-DDT	5.0	ug/kg	nd	nd	126%	140%	11%
Endrin Aldehyde	5.0	ug/kg	nd	nd			
Methoxychlor	5.0	ug/kg	nd	nd			
Endrin Ketone	5.0	ug/kg	nd	nd			
Endosulfan Sulfate	10	ug/kg	nd	nd			
Technical Chlordane	0.10	**mg/kg**	nd	nd			
Toxaphene	0.20	**mg/kg**	nd	nd			
Surrogate Recoveries							
Decachlorobiphenyl			86%	0%	91%	91%	
Tetrachloro-m-xylene			69%	0%	109%	85%	

Acceptable Recovery Limits:

Surrogates	*50-150%*
LCS/MS/MSD	*50-150%*
Acceptable RPD limit:	*30%*

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Analytical Report

Client	**Advanced Analytical Laboratory**	**Acculab WO#**	**20-AL0507-3**
	544 Ohohia Street #10		
	Honolulu, HI, 96819	Date Sampled	5/1/2020
Project Manager	Uwe Baumgartner/ Elisa Young	Date Received	5/7/2020
Project Name	**2686_2 Kamuela Vacuum Cooling Facility**	Date Reported	5/12/2020
Client Project#	**2686_2**		
Project#	**V375**		

Metals in Soil by EPA 6020B/EPA3050B

Accu Lab Batch# AL050820-11

Client sample ID					**2686-DU-01 -A-1**	**2686-DU-01 -A-2**	**2686-DU-01 -A-3**	**2686-DU-01 -B**
Lab ID	**MRL**	**Unit**	**MTH BLK**	**LCS**	20-AL0507-3-1	20-AL0507-3-2	20-AL0507-3-3	20-AL0507-3-4
Matrix			Soil	Soil	Soil	Soil	Soil	Soil
Date Digested			5/8/2020	5/8/2020	5/8/2020	5/8/2020	5/8/2020	5/8/2020
Date Analyzed			5/9/2020	5/9/2020	5/9/2020	5/9/2020	5/9/2020	5/9/2020
Arsenic (As)	2.0	mg/kg	nd	102%	2.3	2.3	2.0	2.0
Barium (Ba)	2.0	mg/kg	nd	110%	14	15	15	20
Cadmium (Cd)	1.0	mg/kg	nd	103%	nd	nd	nd	nd
Chromium (Cr)	2.0	mg/kg	nd	110%	9.5	10.4	10.2	11
Lead (Pb)	1.0	mg/kg	nd	105%	6.1	5.2	7.6	3.7
Selenium (Se)	2.0	mg/kg	nd	100%	nd	nd	nd	nd
Silver (Ag)	1.0	mg/kg	nd	101%	nd	nd	nd	nd
Mercury (Hg)	0.50	mg/kg	nd	94%	nd	nd	nd	nd

Acceptable Recovery Limits:

LCS	*80-120%*
MS/MSD	*75-125%*
Acceptable RPD limit:	*20%*

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Analytical Report

Client	**Advanced Analytical Laboratory**	**Acculab WO#**	**20-AL0507-3**
	544 Ohohia Street #10		
	Honolulu, HI, 96819	Date Sampled	5/1/2020
Project Manager	Uwe Baumgartner/ Elisa Young	Date Received	5/7/2020
Project Name	**2686_2 Kamuela Vacuum Cooling Facility**	Date Reported	5/12/2020
Client Project#	**2686_2**		
Project#	**V375**		

Metals in Soil by EPA 6020B/EPA3050B

Accu Lab Batch# AL050820-11

Client sample ID			2686-DU-02 -A	2686-DU-02 -B	MS	MSD	RPD
Lab ID	MRL	Unit	20-AL0507-3-5	20-AL0507-3-6	20-AL0508-1-1	20-AL0508-1-1	20-AL0508-1-1
Matrix			Soil	Soil	Soil	Soil	Soil
Date Digested			5/8/2020	5/8/2020	5/8/2020	5/8/2020	5/8/2020
Date Analyzed			5/9/2020	5/9/2020	5/9/2020	5/9/2020	5/9/2020
Arsenic (As)	2.0	mg/kg	2.8	2.1	87%	89%	2%
Barium (Ba)	2.0	mg/kg	7.0	15	90%	110%	20%
Cadmium (Cd)	1.0	mg/kg	nd	nd	108%	108%	0.5%
Chromium (Cr)	2.0	mg/kg	6.4	7.2	M	M	
Lead (Pb)	1.0	mg/kg	2.2	nd	105%	91%	14%
Selenium (Se)	2.0	mg/kg	nd	nd	77%	80%	4%
Silver (Ag)	1.0	mg/kg	nd	nd	116%	119%	3%
Mercury (Hg)	0.50	mg/kg	nd	nd	103%	105%	2%

Acceptable Recovery Limits:

LCS	*80-120%*
MS/MSD	*75-125%*
Acceptable RPD limit:	*20%*

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Analytical Report

Client	Advanced Analytical Laboratory	**Acculab WO#**	**20-AL0507-3**
	544 Ohohia Street #10		
	Honolulu, HI, 96819	Date Sampled	5/1/2020
Project Manager	Uwe Baumgartner/ Elisa Young	Date Received	5/7/2020
Project Name	**2686_2 Kamuela Vacuum Cooling Facility**	Date Reported	5/12/2020
Client Project#	**2686_2**		
Project#	**V375**		

Data Qualifiers and Comments:

Results reported on dry-weight basis for soil samples.

MRL- Method Reporting Limit
nd- Indicates the analyte is not detected at the listing reporting limit.
C- Coelution with other compounds.
M- % Recovery of surrogate, MS/MSD is out of the acceptable limit due to matrix effect.
B- Indicates the analyte is detected in the method blank associated with the sample.
J- The analyte is detected at below the reporting limit.
E- The result reported exceeds the calibration range, and is an estimate.
D- Sample required dilution due to matrix. Method Reporting Limits were elevated due to dilutions.
H- Sample was received or analyzed past holding time
Q- Sample was received with head space, improper preserved or above recommended temperature.
I- Due to insufficient sample, LCS/LCS DUP were analyzed in place of MS/MSD.
R- The recovery of this analyte in QC sample failed high, but the analyte was not detected in all related samples. No action was taken.
R-1- The RPD value for the MS/MSD was outside of QC acceptance limits however both recoveries were acceptable. All related samples were "nd". No action was taken.
R-2- The recovery of the surogate in sample failed high, but all related analytes were not detected in the sample. No action was taken.

SECTION 02050

DEMOLITION

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS: The work includes demolition and removal as indicated in the plans or specified herein. All materials resulting from demolition work, except as indicated or specified otherwise, shall become the property of the Contractor, shall be removed from the limits of Government property, and disposed of at a permitted solid waste management facility allowed and willing to accept such waste or out of state disposal facility. Remove rubbish and debris from the job site daily, unless otherwise directed. Store materials which cannot be removed daily in areas specified by the Engineer. The Contractor shall pay for all necessary permits and certificates that may be required in connection with this work.

1.2 SUBMITTALS: Submit proposed demolition, removal procedures, and disposal location to the Engineer for approval before work is started. Procedures shall provide for coordination with other work in progress and a detailed description of methods and equipment to be used for each operation, and sequence of operations. Contractor to provide disposal receipts for all material removed from the project site.

1.3 DUST CONTROL: Take appropriate action to check the spread of dust to the surrounding area and to avoid the creation of a nuisance in the surrounding area. Do not use water if it results in hazardous or objectionable conditions, such as flooding or pollution. Comply with all dust regulations imposed by local air pollution agencies.

1.4 PROTECTION

A. Existing Improvements: Protect existing improvements that are to remain in place, that are to be reused, or that is to remain the property of the Engineer by temporary covers, shoring, bracing, and supports. Repair items damaged during performance of the work or replace with new to the satisfaction of the Engineer. Do not overload structural elements. Provide new supports or reinforcement for existing construction weakened by demolition, removal, and relocation work. Construction equipment and vehicles shall neither be permitted on, nor shall be stored on the existing work that is to remain in place.

B. Trees: Protect trees within the project site which might be damaged during the demolition work.

C. Public Safety: Where pedestrian and driver safety is endangered in the work or storage areas, use traffic barricades with flashing lights. Notify the Engineer prior to beginning any such work. The Contractor shall conduct operations with minimum interference to streets, driveways, sidewalks, and passageways, etc.

D. Explosives: Use of explosives will not be permitted.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 EXISTING FACILITIES

A. The existence of active utility lines traversing the construction area other than those indicated is not definitely known. Should any be encountered, the Contractor shall not disconnect same without authorization of the Engineer, but shall inform the latter immediately of each discovery, and shall follow his instructions.

3.2 SAFETY

A. Work shall be done in accordance with safety provisions of the Manual of Accident Prevention in Construction, published by the Associated General Contractors of America.

3.3 CONSTRUCTION

A. Preserve and protect structures and utilities to remain or to be removed by others in accordance with the following from the "Hawaii Standard Specifications for Road and Bridge Construction," 2005: Subsection 104.11 – Utilities and Services; Subsection 107.12 – Protection of Persons and Property; and Subsection 108.16 – Contractor's Responsibility for Work; Risk of Loss or Damages.

B. Remove obstructions that interfere with construction, such as the following:

1. Signs, posts, raised bars, guardrails, and structures placed for the information, safety, direction, direction, or control of traffic.

2. Monuments, fences, walls, and headers, except items indicated to remain.

3. Curb and gutter, drainage and sewerage structures.

4. Utility structures, such as pull boxes and handholes.

Remove existing roads that are not to remain in place. Removal includes rooting, plowing, pulverizing, or scarifying to a minimum depth of 6 inches or to bottom of new underlying base, whichever is less. Place earth cover of not less than 6 inches in thickness.

Remove abandoned utility lines, such as pipes and conduits, within the roadbed area contained inside project limits.

Seal pipes to be abandoned with one of the following:

1. Tight-fitting plug.

2. Wall of Class A or Class B concrete not less than 6 inches thick.

3. Brick wall not less than 8 inches thick with cement mortar joints.

Dispose of materials in accordance with "Hawaii Standard Specifications for Road and Bridge Construction," 2005, Subsection 201.03 (F) – Removal and Disposal of Material.

Backfill trenches, depressions and pits left by the removal of obstruction to level of surrounding ground to the satisfaction of the Engineer.

3.4 DISPOSITION OF MATERIALS

A. Title to Materials: Title to all materials and equipment to be removed, except as specified otherwise, is vested in the Contractor upon receipt of notice to proceed. The Engineer will not be responsible for the condition or loss of, or damage to, such property after notice to proceed. Materials and equipment shall not be viewed by prospective purchasers or sold on the site. Burning or burying of materials on the site will not be permitted.

B. When removing the materials from the property, truck loads shall be trimmed and loaded as to prevent spillage.

3.5 CLEANUP

A. Debris and Rubbish: Remove and transport debris and rubbish in a manner that will prevent spillage into ocean or adjacent areas. Cleanup spillage from ocean and adjacent areas. The Contractor shall leave the premises clean, neat, and orderly.

B. Regulations: Comply with Federal, State, and Local hauling and disposal regulations.

END OF SECTION

SECTION 07411

PREFORMED METAL SIDING

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

A. Extent of preformed siding to patch existing metal siding is indicated on the drawings and by provisions of this Section. Provide all materials for a complete repair system.

B. Type of panels required include formed sheet panels for exposed fasteners to existing metal siding.

C. Related Work Described Elsewhere:

1. Sealants are provided under SECTION 07920 - SEALANTS.

2. Exposed exterior face of siding shall be field painted to match existing painted siding.

1.2 SUBMITTALS

Manufacturer's Data: Submit manufacturer's product specifications, standard details, installation instructions and general recommendations, as applicable to materials and finishes for each component and for total system of preformed panels.

1.3 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle preformed panels, bulk products, and other manufactured items in a manner to prevent damage or deformation.

B. Handle material carefully to avoid damage to surfaces, edges, and ends.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Siding Panels: Formed from minimum 24 gauge "Zincalume: or "Galvalume" coated steel conforming to ASTM A 792/A 792M, Grade 33 with a minimum AZ50 coating. Panel configuration shall be equivalent to Custom 4-Rib configuration by HPM Building Supply Custom Metal Roofing, or equivalent by Kloeckner Metals, Advanced Roofing Technology or approved equal siding with

exposed fasteners. Panels shall be prefinished as specified.

B. Flashing and Closures: Formed of prefinished material to match siding panels of manufacturer's standard flashings for the panels specified. Provide accessories and other items essential to complete the sheet metal repairs of the same materials as the items to which they are applied. Connect all pieces of linear flashing by a slip joint to permit thermal movement.

2.2 METAL FINISH

A. General: Apply coatings either before or after forming and fabricating panels, as required by coating process and as required for maximum coating performance capability. Provide color close to the final field painted color.

B. For exposed exterior surfaces, provide thick finish of Kynar 500 or equivalent conforming to AAMA 621 with a primer from 0.2 to 0.3 dry mils and Kynar topcoat from 0.7 to 0.9 dry mils for a total thickness of 0.9 to 1.2 dry mils.

C. Interior/underside finish shall be off white polyester.

2.3 MISCELLANEOUS MATERIALS

A. Fasteners: Fasteners shall be stainless steel with composite metal and neoprene composition washers. Exposed fasteners shall be gasketed on the exterior side of the covering to waterproof the covering and finished to match siding finish. Provide stainless steel blind rivets where indicated or required.

B. Closure Strips: Formed specifically for this purpose of laminated cross-linked polyethylene closed cell-foam or neoprene materials and as standard with manufacturer. Molded closure strips shall be free of open voids and shall not absorb or retain water. Closure strips shall be formed to match configurations of the panels and shall be provided where indicated and where necessary to provide weathertight construction.

C. Sealants: ASTM C 920, Type S, Grade NS, Class 25, Use NT, polyurethane or as recommended by the siding manufacturer. Color, where exposed, shall match panels.

D. Mastic: As recommended by the siding manufacturer.

E. Bituminous Coating: Cold-applied asphalt mastic, SSPC paint 12, compounded for 15-mil dry film thickness per coat.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine surfaces to receive metal siding. Ensure that surfaces are free from defects and projections which might affect the installation.

B. Report unsuitable conditions to the Engineer.

3.2 INSTALLATION

A. General: Comply with panel fabricator's and material manufacturers' instructions and recommendations for installation, as applicable to project conditions and supporting substrates. Anchor panels and other components of the work securely in place in full and firm contact with substrate. Completely seal overlap of existing siding and openings through panels. Correct defects or errors in materials in an accepted manner. Replace materials which cannot be corrected in an accepted manner with new materials. Provide molded closure strips where necessary for weathertight construction.

B. All field cutting of panels shall be done as recommended by manufacturer's written instructions.

C. Joint Sealers: Install joint fillers and sealants where indicated and where required for weatherproof performance of panel system. Provide types of sealants/fillers indicated or, if not otherwise indicted, types recommended by panel manufacturer. Refer to SECTION 07920 - SEALANTS of these specifications for installation requirements applicable to indicated joint sealers.

D. Fasteners: Fastener spacings shall be in accordance with the panel manufacturer's recommendations and as necessary to withstand the design loads for both pullout and pullover. Install fasteners as recommended by the manufacturer of the panels. Install fasteners in straight lines within a tolerance of 1/2-inch in the length of a bay. Drive exposed penetrating type fasteners normal to the surface and to a uniform depth to seat gasketed washers properly and drive so as not to damage factory applied coating. Exercise extreme care in drilling pilot holes for fastenings to keep drills perpendicular and centered. After drilling, remove metal filings and burrs from holes prior to installing fasteners and washers. Torque used in applying fasteners shall not exceed that recommended by the manufacturer. Remove panels deformed or otherwise damaged by overtorqued fastenings, and provide new panels.

E. Closure Strips: Install closure strips as recommended by the manufacturer.

F. Apply bituminous coating or other permanent separation materials on concealed panel surfaces where panels would otherwise be in direct contact with other substrate materials which are noncompatible (i.e. copper and aluminum) or could

result in corrosion or deterioration of either material or finishes.

3.3 CLEAN-UP AND PROTECTION

Damaged Units: Replace panels and other components of the work which have been damaged or have deteriorated beyond successful repair by means of finish touch-up or similar minor repair procedures.

END OF SECTION

SECTION 07920

SEALANTS

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

Completely close with sealant and patching compound all joints indicated or specified to be sealed to a watertight and airtight condition without staining substrates.

1.2 SUBMITTALS

A. Manufacturer's Data: Submit copies of manufacturer's product data and specifications for type of sealant required, to the Engineer for acceptance.

B. Material Safety Data Sheets (MSDS): Submit MSDS for each sealant product.

C. Color Samples: Submit 4 sets of color finish samples of sealants.

D. Compatibility and Adhesion Test Reports: From sealant manufacturer, indicating the following:

1. Materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with joint sealants.

2. Interpretation of test results and written recommendations for primers and substrate preparation needed for adhesion.

E. Warranty: Submit warranty as stipulated in item entitled "WARRANTY" hereinbelow.

1.3 QUALITY ASSURANCE

A. Source Limitations: Obtain each type of sealant through one source from a single manufacturer.

B. Preconstruction Compatibility and Adhesion Testing: Submit to sealant manufacturers, for testing samples of materials that will contact or affect sealants. Use manufacturer's standard test method to determine whether priming and other specific joint preparation techniques are required to obtain optimum adhesion of sealants to joint substrates. Testing will not be required if joint-sealant manufacturers submit joint preparation data that are based on previous testing of current sealant products for adhesion to, and compatibility with, joint substrates and other materials matching those submitted.

C. Stain-Test Response Characteristics: Where elastomeric sealants are specified to be nonstaining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Delivery: Deliver sealants to the jobsite in sealed containers labeled to show the designated name, formula, or specification number, lot number, color, date of manufacture, shelf life, curing time, manufacturer's directions, and name of manufacturer.

B. Storage: Carefully handle and store all materials to prevent inclusion of foreign materials. Remove from project site all damaged and deteriorated materials and materials exceeding shelf life.

C. Sealant materials shall be handled in accordance with the manufacturer's specifications and installed prior to expiration of shelf life.

1.5 WARRANTY

A. Provide a 2-year written warranty from the project acceptance date against leaks, air infiltration, cracks, and other failures of the installation and materials. Where sealant is associated with a system with longer warranty period, sealant warranty shall match applicable system.

1. Repair of sealants to seal leaks caused by faulty materials or workmanship;

2. Repair or replace damage to the building or its finishes, equipment or furniture when occasioned by such leaks at no additional cost to the State.

B. The Surety shall not be held liable beyond 2 years from the project acceptance date.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Provide sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer, based on testing and field experience.

B. Sealants:

1. At Vertical and Overhead Moving Joints: One-part polyurethane-based sealant, conforming to ASTM C 920, Type S, Grade NS, Class 25, Use NT. Provide one of the following, or approved equal:

a. Vulkem 116; Tremco, Inc.

b. Chem-Calk 900; Bostik Construction Products Div.

c. Sikaflex 1a; Sika Corp.

d. DynaTrol 1-XL; Pecora Corp.

e. NP-1; MasterSeal.

2. Bedding Compound: For installation of items indicated to be bedded in sealant, use a preformed butyl-polyisobutylene sealant tape. Size of tape as required for the specific application. Provide one of the following, or approved equal:

a. Extru-Seal; Pecora Corp.

b. 440 Tape; Tremco, Inc.

c. Chem-Tape 40; Bostik Construction Products Div.

C. Patching Filler: DAP Platinum Patch Advanced Exterior Filler or approved equal.

D. Primer for Sealants: Non-staining, as recommended by the sealant manufacturer.

E. Sealant Backer Rod: Compressible rod stock of polyethylene foam, polyethylene-jacketed polyurethane foam, butyl rubber foam, neoprene foam or other flexible, permanent, durable, nonabsorptive material conforming with ASTM C 1330 as recommended for compatibility with sealant by the sealant manufacturer to control the joint depth for sealant placement, to break bond of sealant at bottom of joint, to form optimum shape of sealant bead on back side, and to provide a highly compressible backer which will minimize the possibility of sealant extrusion when joint is compressed. Do not use oakum or other types of absorptive materials as backstops.

F. Bond-Breaker Tape: Polyethylene tape or other plastic tape as recommended by sealant manufacturer. Provide self adhesive tape where required.

G. Masking Tape: Non-staining, nonabsorbent type compatible with joint sealants and to surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

Examine joint widths, surfaces, and backing, and their anchorage to the structure, and conditions under which joint sealer and patching work is to be performed, and notify Contractor in writing of conditions detrimental to proper completion of the work and

performance of products. Do not proceed with joint sealer and patching work until unsatisfactory conditions have been corrected in a manner acceptable to installer.

3.2 JOINT PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealers and patching compounds to comply with recommendations of joint sealer and patching compound manufacturers and the following requirements:

1. Remove foreign material from joint substrates which could interfere with adhesion of joint sealer, including dust; paints, except for permanent, protective coatings tested and accepted for sealant adhesion and compatibility by sealant manufacturer; oil; grease; waterproofing; water repellants; water; and surface dirt.

2. Clean concrete and similar porous joint substrate surfaces, by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealers. Remove loose particles remaining from above cleaning operations by vacuuming or blowing out joints with oil-free compressed air.

3. Remove laitance and form release agents from concrete.

4. Steel Surfaces in Contact with Sealant: Scrape and wirebrush to remove loose mill scale. Remove dirt, oil, or grease by solvent cleaning, and wipe surfaces with clean cloths.

5. Clean metal and other nonporous surfaces by chemical cleaners or other means which are not harmful to substrates or leave residues capable of interfering with adhesion of joint sealers.

6. Do not permit solvents to air dry. Wipe surfaces free of solvent using clean, dry white cloth or white lintless paper.

B. Joint Priming: Prime joint substrates where indicated or where recommended by joint sealer manufacturer based on preconstruction joint sealer-substrate tests or prior experience. Apply primer to comply with joint sealer manufacturer's recommendations. Confine primers to areas of joint sealer bond, do not allow spillage or migration onto adjoining surfaces.

C. Masking Tape: Use masking tape where required to prevent contact of sealant and patching compound with adjoining surfaces which otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove smears. Remove tape immediately after tooling without disturbing joint seal.

D. Examine joint size and correct to achieve depth ratio of 1/2 of joint width with a

minimum width and depth of 1/4-inch, maximum width of one-inch unless specifically allowed otherwise by the sealant manufacturer.

3.3 INSTALLATION OF JOINT SEALERS AND PATCHING COMPOUND

A. General: Comply with joint sealer and patching compound manufacturers' printed installation instructions applicable to products and applications indicated, except where more stringent requirements apply.

B. Weather Conditions: Do not proceed with installation of sealants and patching compounds under adverse weather conditions. Proceed with the work only when weather conditions are favorable for proper cure and development of high early bond strength.

C. Sealant Installation Standard: Comply with recommendations of ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

D. Installation of Sealant Backings: Install sealant backings to comply with the following requirements:

1. Install joint fillers of type indicated to provide support of sealants during application and at position required to produce the cross-sectional shapes and depths of installed sealants relative to joint widths which allow optimum sealant movement capability.

   a. Do not leave gaps between ends of joint fillers.

   b. Do not stretch, twist, puncture, or tear joint fillers.

   c. Remove absorbent joint fillers which have become wet prior to sealant application and replace with dry material.

2. Install bond breaker tape between sealants and joint fillers, compression seals, or back of joints where adhesion of sealant to surfaces at back of joints would result in sealant failure.

3. Install compressible seals serving as sealant backings to comply with requirements indicated above for joint fillers.

E. Primer: Immediately prior to application of the sealant, clean out all loose particles from joints. Where recommended by sealant manufacturer, apply primer to joints in concrete, masonry units, wood, and other porous surfaces in accordance with compound manufacturer's instructions. Do not apply primer to exposed finish surfaces.

F. Installation of Sealants: Install sealants by proven techniques that result in sealants

directly contacting and fully wetting joint substrates, completely filling recesses provided for each joint configuration, and providing uniform, cross-sectional shapes and depths relative to joint widths which allow optimum sealant movement capability.

G. Tooling of Nonsag Sealants: Immediately after sealant application and prior to time skinning or curing begins, tool sealants to form smooth, uniform beads of configuration indicated, to eliminate air pockets, and to ensure contact and adhesion of sealant with sides of joint. Remove excess sealants from surfaces adjacent to joint. Do not use tooling agents which discolor sealants or adjacent surfaces or are not approved by sealant manufacturer.

1. Provide concave joint configuration per Figure 5A in ASTM C 1193, unless otherwise indicated.

2. Provide flush joint configuration per Figure 5B in ASTM C 1193, where indicated.

3.4 CLEAN-UP

Clean off excess sealants or sealant smears and patching compound from adjacent surfaces as work progresses by methods and with cleaning materials approved by manufacturers and of products in which joints occur.

3.5 PROTECTION

Protect joint sealers and patching compound during and after curing period from contact with contaminating substances or from damage resulting from construction operations or other causes so that they are without deterioration or damage at time of project acceptance. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealers immediately and reseal joints with new materials to produce joint sealer installations with repaired areas indistinguishable from original work.

END OF SECTION

SECTION 09900

PAINTING

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

A. The work includes painting and finishing of exterior items and surfaces throughout the project, whether scheduled or not, except as otherwise indicated. Painting shall include new work and existing new surfaces made bare or damaged during construction and existing surfaces as scheduled. Surface preparation, priming, and coats of paint specified are in addition to shop-priming and surface treatment specified under other sections of the work and is included in this Section.

B. The work includes field painting of exposed bare and covered pipes and conduits (including color coding), and of hangers, exposed steel and iron work, and primed metal surfaces of equipment installed under the electrical work, such as junction boxes, raceways, and cabinets, except as otherwise indicated.

C. "Paint" as used herein means all coating systems materials, including primers, enamels, sealers, stain, varnish, and fillers, and other applied materials whether used as prime, intermediate, or finish coats, except as specifically noted herein.

D. Paint all exposed surfaces whether or not colors are designated in "schedules". Where items or surfaces are not specifically mentioned, paint these the same as adjacent similar materials or areas. If color or finish is not designated, the Engineer will select these from standard colors available for the materials systems specified.

1.2 PAINTING NOT INCLUDED

The following categories of work are not included as part of the field-applied finish work, or are included in other sections of these specifications.

1. Shop Priming: Unless otherwise specified, shop priming of ferrous metal items is included under the various sections for miscellaneous metal and similar items. Also, for fabricated components such as shop-fabricated or factory-built mechanical and electrical equipment or accessories.

2. Pre-Finished Items: Unless otherwise indicated, do not include painting when factory-finishing or installer finishing is specified for such items as

(but not limited to) solid phenolic, plastic laminate, acoustic materials, high performance organic coated metal, and finished mechanical and electrical equipment, including light fixtures, switchgear, and distribution cabinets.

3. Concealed Surfaces (Present and Future): Unless otherwise indicated, painting is not required on surfaces such as walls or ceilings in concealed areas and generally inaccessible areas, furred areas, and pipe spaces.

4. Finished Metal Surfaces: Metal surfaces of anodized aluminum, stainless steel, chromium plate, copper, and similar finished materials will not require finish painting, unless otherwise indicated.

5. Labels: Do not paint over any code-required labels, such as Underwriters' Laboratories, or any equipment identification, performance rating, name, or nomenclature plates.

1.3 SUBMITTALS

A. Schedule of Finishes: Submit sets of the proposed painting finish schedule to the Engineer for acceptance. The schedule shall indicate the wet film thickness (mils) at which the proposed paints/coatings will be applied that are necessary to achieve the final dry film thickness indicated on the Schedule of Finishes under item entitled "SCHEDULE OF FINISHES" hereinbelow.

B. Color Samples: Submit the following to the Engineer for acceptance:

1. Three sets of each color finish sample.

2. After the color finish sample has been accepted, one set of color finish samples painted onto 8-1/2 inch x 11-inch cardboard shall be submitted. The cardboard shall be divided into 3 horizontal strips and painted as follows:

a. Prime 3 strips.

b. First coat bottom 2 strips.

c. Second coat bottom strip.

C. Schedule of Operations: Before work on the project is commenced, submit complete sets of a work schedule showing Contractor's sequence of operations and dates.

D. Warranty: Submit warranty as stipulated in item entitled "WARRANTY" hereinbelow.

E. Certifications: Submit copies of asbestos-free, lead-free, zinc-chromate-free, strontium-chromate-free, cadmium-free, and mercury free paint certificates.

F. Manufacturer's Product Data Sheets: Submit copies of the manufacturer's product data sheets for the primers, paints, coatings, solvents, sealing and patching materials, sealants and caulking, and other materials being used. Data sheets shall indicate thinning and mixing instructions, required film thickness (mil) and application instructions.

G. Manufacturer's Material Safety Data Sheets (MSDS): Submit copies of the manufacturer's material safety data sheets for coatings, solvents, and other hazardous materials.

H. Comprehensive Spray Plan: Where the Contractor proposes to employ airless spraying, submit a Comprehensive Spray Plan, including the following information for acceptance:

1. Documentation that the individual spray applicator(s) on the project have completed an accepted "Spray Applicator Certification Program".

2. The overspray protection methods proposed.

3. The spray application instructions and recommendations of the paint manufacturer he proposes to use.

I. Certificate of Public Liability and Property Damage Insurance

1.4 ANALYZING AND TESTING

A. All paints and their applied thickness shall be subject to testing whenever the Engineer deems necessary to determine conformation to the requirements of these specifications. Should testing by a laboratory be required, the laboratory shall be selected by the Engineer and the cost of testing shall be borne by the Contractor. However, should test results show that the paint is in compliance with this specifications, the cost will be borne by the State.

B. All rejected material shall be removed from the job site immediately. Surfaces painted with the rejected material shall be redone at no additional cost to the State.

C. Where the required paint thickness is deficient, the affected surface(s) shall be recoated as necessary to provide the required paint thickness at no additional cost to the State.

1.5 QUALITY ASSURANCE

A. Painting Terminology: Refer to ASTM D 16, "Standard Terminology for Paint,

Related Coatings, Materials, and Applications".

B. Gloss/Sheen Levels: ASTM D 523, "Specular Gloss", as follows:

Description	Units at 60 Degrees	Units at 85 Degrees
Matte or Flat	0 to 5	10 max
Velvet	0 to 10	10 to 35
Eggshell	10 to 25	10 to 35
Satin	20 to 35	35 min
Semi-Gloss	35 to 70	
Gloss	70 to 85	
High Gloss	more than 85	

C. Where the Contractor proposes to employ airless spraying, the applicator(s) shall have completed an accepted "Spray Applicator Certification Program" conducted by the Painting Industry of Hawaii.

D. As a minimum, the certification shall include material and equipment selection, use and maintenance, hands-on application, and safety training.

1.6 WARRANTY

A. The Contractor shall warrant that the work performed under this Section conforms to the contract requirements and is free of any defect in the materials used and workmanship performed by the Contractor. Such warranty shall continue for a period of 1 year from the project acceptance date and the Contractor shall remedy any such defect which is discovered during that period at no cost to the State.

B. The State will notify the Contractor in writing within a reasonable time after discovery of any failure or defect.

C. Should the Contractor fail to remedy any failure or defect described in Paragraph A above within 10 working days after receipt of notice thereof, the State shall have the right to repair or otherwise remedy such failure or defect and charge the Contractor for the cost of same.

1.7 SPECIAL REQUIREMENTS

A. Codes: The Contractor shall comply with the State OSHL (Occupational Safety and Health Law) and all pollution control regulations of the State Department of Health.

B. Safety methods used during coating application shall comply with SSPC-PA Guide 3.

C. Protection:

1. Persons:

a. The Contractor shall take all necessary precautions to protect public pedestrians, including tenants from injury.

b. The Contractor shall provide, erect, and maintain safety barricades around scaffolds, hoists, and wherever Contractor's operation create hazardous conditions in order to properly protect the public and workmen.

2. Completed Work: The Contractor shall provide all necessary protection for wet paint surfaces.

3. Protective Covering: The Contractor shall provide and install protective covering over equipment, floor, and other areas that are not scheduled for treatment. Protective covering shall be clean, sanitary drop cloth or plastic sheets. Paint applied to surfaces not scheduled for treatment shall be completely removed and surfaces shall be returned to original condition.

4. Safeguarding of Property: The Contractor shall take whatever steps may be necessary to safeguard his work and also the property of the State and other individuals in the vicinity of the work area during the execution of this Contract. Contractor shall be responsible for and make good on any and all damages and for losses to work or property caused by his or his employee's negligence. Where the damaged property cannot be cleaned and restored to its original condition (i.e. prior to being damaged) it shall be replaced with a new product of equal quality. No proration or use of "used" products will be permitted.

5. Fire Safety: The Contractor shall direct his employees not to smoke in the vicinity and to exercise precautions against fire at all times. Waste rags, plastic (polyester sheets), empty cans, etc., shall be removed from the site at the end of each day.

D. Right of Rejection: The Engineer will have the right to reject all work which is not in compliance with the plans and specifications. Rejected work will be redone at no additional cost to the State. In addition, the Engineer will have the right to require the immediate removal of any paint applicator who demonstrates negligence, lack of competence or repeated non-compliance with the contract requirements.

E. Sequence of Operations: The sequence of operations shall divide the surfaces into work areas and present a schedule for:

1. Surface preparation and spot prime.

2. Prime coat.

3. First finish coat.

4. Second finish coat.

F. Inspection and Acceptance: The Contractor shall obtain written acceptance from the Engineer upon completion of each phase of work (phases of work are surface preparation and spot prime, prime, first finish coat, and second finish coat) before proceeding into the next phase of work. The Contractor shall give the Engineer one day (24 hours minimum) advance notice of completion of any phase of work for a work area only when he deviates from the previously submitted work schedule. The Contractor shall provide necessary access to areas to be inspected. Failure to obtain acceptance of any phase of work for a work area may result in redoing the operation at no cost to the State.

G. Bollards: Bollards protecting metering equipment near vehicular traffic shall be painted yellow per ANSI Z535.1 to comply with OSHA 1910.144 and a 2-inch wide strip of reflective tape shall be placed 6-inches below the top.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver paint materials to the job site in original unopened containers with original labels intact.

B. No paint material, empty cans and paint brushes and rollers, drop cloths and rags, may be stored in buildings, but shall be stored in separate storage facilities away from the buildings. Receiving, opening, and mixing of painting materials shall be done in this area.

C. The Contractor may furnish a job site storage facility. Such facility shall comply with requirements of the local Fire Department. The storage area shall be kept clean and facility shall be locked when not in use or when no visual supervision is possible.

D. Ensure the safe storage and use of paint materials and the safe storage or disposal of waste at the end of each work day.

E. Handle manufactured materials as recommended by the manufacturer.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Asbestos Prohibition: All paint shall be asbestos-free.

B. Lead Prohibition: All paint shall be lead-free.

C. Mercury Prohibition: All paint shall be mercury-free.

D. Chromate Prohibition: All paint shall be free of zinc-chromate and/or strontium-chromate.

E. Cadmium Prohibition: All paint shall be cadmium-free.

F. Material shall be equal in quality to that specified under the Schedule of Finishes and any given finish shall be as labeled by one manufacturer.

G. All materials shall be delivered to the job site in undamaged original containers bearing the manufacturer's label and shall be stored in such a manner as to prevent damage. All rejected materials shall be removed from the job site immediately.

H. Paints shall be as manufactured by Benjamin Moore, Dupont, Henkel, Devoe, Devoe Coatings, Glidden, Glidden Professional, PPG Protective & Marine Coatings, Sherwin-Williams, Tnemec, or approved equal.

I. Thinning of paint shall be done using material recommended by the manufacturer. Mix proprietary products according to manufacturer's printed specifications. Compound thinner, mineral oil, kerosene, refined linseed oil, or gasoline shall not be used for thinning.

J. Except for metal primers, all paint shall contain maximum amount of mildewcide per gallon of paint permitted by the mildewcide manufacturer without adversely affecting the quality of the paint.

K. The supplier shall submit a signed certificate indicating the amounts of mildewcide added by both the paint manufacturer and the paint supplier. Mercurial fungicide shall not be used.

2.2 SCHEDULE OF FINISHES

A. The Schedule of Finishes is made for the convenience of the Contractor and indicates the types and quality of finishes to be applied to the surfaces. Refer to Finish Schedule for symbols indicating location for various finishes. Provide additional systems for surfaces to be painted not listed hereinafter.

B. All paints unless otherwise noted, are the products of Benjamin Moore and are so named to establish desired quality and standard of materials. Painting materials, equal to those mentioned by trade name under the various treatments may be used, provided they meet with the acceptance of the Engineer.

C. Treatments shall be applied on exposed surfaces of designated materials, in

conformity with instructions of the paint product used.

D. Exterior Painting: Spread rates are approximate.

1. Concrete:

Prime Coat:	N068 Super Spec Masonry Interior/Exterior Acrylic High Build Masonry Primer 1.2 mils DFT @ 425 sf/gal
2nd and 3rd Coats:	N448 Ultra Spec Ext Satin Finish 1.5 mils DFT @ 403 sf/gal/coat

2. Typical Coating System for Steel: Follow SSPC-SP-1 for solvent cleaning, for maximum protection follow SSPC-SP-10 near white metal blast.

Producer	Coat	Products	DFT (mils)	Minimum Time to Recoat	Maximum Time to Recoat
Corotech	1st	V175*	1.5-2.1	2 hours	2 weeks exterior
Corotech	2nd	V150	2.2-2.8	8 hours	4 weeks
Corotech	3rd	V500	2.3-3.3	8 hours	3 days

* for galvanized or zincalum coated surfaces or as recommended by the paint manufacturer

3. Wood:

Prime Coat:	N023 Fresh Start Multi-Purpose Latex Primer 1.2 mils DFT @ 425 sf/gal
2nd and 3rd Coats:	N448 Ultra Spec Ext Satin Finish 1.5 mils DFT @ 403 sf/gal/coat

2.3 COMPATIBILITY OF PAINTING SYSTEMS AND SUBSTRATES

A. The Contractor shall ensure that painting systems specified are compatible with existing painted surfaces. Alkyd paints shall not be applied over existing latex coating. Alkyd paints shall not be used over cementitious surfaces. Latex paints shall not be applied directly over alkyd paints without proper conditioner and accepted by the Engineer.

B. Field Tests for Alkyd or Latex Paints: The Contractor shall perform the following

field tests for compatibility of substrates to new paint systems prior to ordering paint:

1. Latex films will dissolve when wiped with rubbing alcohol; alkyd films will not.

2. When sanded, latex films will "clog" sandpaper; alkyd films will sand clean.

3. Alkyds will soften after applying a 10 percent solution of Drano in water; latex films will not soften.

4. Alkyds will burn when exposed to a flame; latex film will not burn.

5. Paints which do not respond to 2 or more of these tests are probably epoxy, urethane, or other type of coating.

6. Provide a packaged swab test in accordance with the package directions.

7. Existing paint identified or suspect of having lead-containing paint shall be tested in a manner that does not produce airborne or uncontrolled lead debris.

C. Should there be any discrepancies between the specified Schedule of Finishes and the existing paint systems, the Contractor shall notify the Engineer in writing of any incompatible systems specified and submit a revised Schedule of Finishes for acceptance when necessary. With the acceptance of the revised Schedule of Finishes, the Contractor shall make any corrections and/or revisions necessary to resolve the discrepancies and/or inconsistencies. The Contractor shall not proceed with any painting systems that are incompatible, although specified otherwise, until all incompatible conditions detrimental for the proper application and performance of the painting systems have been corrected. The failures due to the application of the incompatible paint systems shall be corrected at no additional cost to the State. Proceeding with the work shall imply acceptance of the specified Schedule of Finishes and the compatibility with the existing painted surfaces by the Contractor.

PART 3 - EXECUTION

3.1 SURFACE PREPARATION

A. General:

1. Surface preparation shall be in accordance with the Painting and Decorating Contractors of America, "Architectural Specification Manual", methods are applicable to all substrates.

2. Scrub surfaces with stiff nylon bristle brush and Trisodium Phosphate (TSP) solution at rate of 3/4 cup TSP per gallon of warm water to remove

accumulated film of wax, oil, grease, smoke, dust, dirt, chalky, or other foreign matter which would impair bond or bleeding through new finish. Thoroughly sponge wipe surfaces with clean water. Allow surfaces to thoroughly dry before priming, painting, calking, or sealing.

a. Following sponge wiping, the surfaces shall be allowed to dry for a minimum of 24 hours.

b. Wood surfaces shall have a maximum moisture content of 12 percent when measured with an electronic moisture meter.

3. Cracks and openings found at joints and where different materials abut each other (e.g. concrete/wood, etc.) shall be sealed with a caulking compound compatible with the substrate and primer/paint. The caulking shall be applied and allowed to set in accordance with the manufacturer's recommendations and instructions.

4. Mildew Removal: Remove all mildew and sterilize the surface to be painted using one of the following methods:

a. Apply a treatment solution composed of the following ingredients and in the noted proportions to the affected surface using a sponge of low-pressure sprayer:

2/3 cup TSP
One quart household bleach
3 quarts warm water

Note: Household bleach shall not be mixed with ammonia or any detergents or cleaners containing ammonia as this will create a poisonous gas.

Scrub the surface as necessary to completely remove the mildew.

b. Apply a commercial mildew treatment solution such as Purex, Jomax Remover or equal in strict accordance with the manufacturer's recommendations and instructions.

c. Following treatment, the surface shall be cleaned with potable water and allowed to thoroughly dry before priming, painting or the applying of sealing and caulking compounds.]

B. The Painting Contractor shall be wholly responsible for the finish of his work and shall not commence any part of it until surfaces are in proper condition. If Painting Contractor considers any surfaces unsuitable for proper finish of his work, he shall notify the Engineer of this fact in writing and he shall not apply any material until the unsuitable surfaces have been made satisfactory, or until the Engineer has

instructed him to proceed. Major defects shall be restored by the proper trades. In general, follow paint manufacturer's directions for surface preparation for the paint to be applied.

C. Remove all hardware, hardware accessories, machined surfaces, plates, lighting fixtures, and similar items in place and not to be finish-painted, or provide surface-applied protection prior to surface preparation and painting operations. Remove, if necessary, for the complete painting of the items and adjacent surfaces. Following completion of painting of each space or area, reinstall the removed items by workmen skilled in the trades involved.

D. Puttying of nail holes, cracks, and blemishes shall be done after priming coat has become hard and dry and before second coat is applied.

E. Concrete surfaces shall be wire brushed and cleaned to remove all dust and loose mortar.

F. Alkalinity and Moisture Testing of Cementitious Surfaces:

1. Prior to paint application, exterior concrete and masonry scheduled to receive paint shall be tested to determine the alkalinity level of the surface. Testing shall be performed in strict accordance with the test kit manufacturer's instructions.

2. Perform alkalinity and moisture content tests of surfaces to be painted. Cementitious surfaces shall be cured for not less than 30 days prior to painting, but no less than 14 days and then only if the moisture meter tests indicated moisture of less than 17. Make surface moisture test by use of a commercially available moisture meter. Do not paint over surfaces where moisture content exceeds that permitted in manufacturer's printed directions. If surfaces are found to be sufficiently alkaline to cause blistering and burning of finish paint, correct this condition as specified before application of paint. Efflorescence is caused on cementitious surfaces by moisture entering or contained in the substrate. Water-soluble salts are brought to the surface where the water evaporates, leaving a deposit of residual salts, a white, salty deposit. Here they carbonate and destroy the bond within the substrate components, causing the surface to crumble and break away.

3. Where the alkalinity level exceeds the resistance level of the primer proposed for use, the surface shall be neutralized (e.g. muriatic acid wash) as necessary to reduce the levels to within that acceptable by the primer and thoroughly rinsed with clean water.

G. Surfaces adjacent to areas being finished shall be protected and left clean of paints, stains, etc. Clean drop cloths shall be used until completion of job.

H. Unprimed galvanized metal shall be washed with a solution of chemical phosphoric

metal etch and allowed to dry.

I. Metal surfaces shall be made clean and free of any defects or condition that may produce unsatisfactory finish. Touch-up any chipped or abraded places on surfaces that have been shop coated with the proper primer.

J. Plywood and Wood Surfaces:

1. Surface Cleaning: Surfaces shall be free from dust and other deleterious substances and in a condition accepted by the Engineer prior to receiving paint or other finish. Do not use water to clean uncoated wood.

2. Knots and Resinous Wood: Prior to application of paint, treat knots and resinous wood with an application of surface sealer.

3. Open Joints and Other Openings: Fill with whiting putty. Sand smooth after putty has dried.

4. Checking: Where checking of the wood is present, sand the surface, wipe, and apply a coat of pigmented orange shellac. Allow to dry before paint is applied.

3.2 PAINT APPLICATION

A. General:

1. Apply coating materials in accordance with SSPC-PA 1. SSPC-PA 1 methods are applicable to all substrates, except as modified herein. Thoroughly work coating materials into joints, crevices, and open spaces. Touch-up damaged coatings before applying subsequent coats.

2. Work shall be done in a workmanlike manner by skilled and experienced mechanics and shall conform to the best painting practices.

3. Materials shall be applied in accordance with the manufacturer's specifications and the finished surfaces shall be free from runs, sags, drips, ridges, waves, laps, streaks, brush marks, and variations in color, texture, and finish (glossy or dull). The coverage shall be complete and each coat shall be so applied as to produce a film of uniform thickness. No paint, varnish or enamel shall be applied until the preceding coat is thoroughly dry and acceptance.

4. No exterior painting of unprotected surfaces shall be done in rainy, damp weather. Coats shall be applied only to surfaces that are thoroughly dry.

5. Mixing shall be done outside the building.

B. Application:

1. Paint application shall be by brush, roller, airless spray painting, or combination thereof or as required by manufacturer

2. Where airless spraying is provided, a nozzle of the proper size in accordance with the paint manufacturer's recommendations to properly apply the paint shall be used.

3. Spray painting method shall be used only under accepted conditions. Spraying shall be done only when there is no wind, or under very low wind velocity. When wind velocity increases, all spraying operation shall be stopped. Before start of spraying, all surfaces that do not require painting shall be completely masked and protected. Adequate drop cloths shall be provided over floors, adjacent sidewalks, and over all cars parked nearby that may be stained or damaged from the spraywork.

4. Drying Time: Allow time between coats, as recommended by the coating manufacturer, to permit thorough drying. Provide each coat in specified condition to receive the next coat.

5. Primers and Intermediate Coats: Do not allow primers or intermediate coats to dry more than 30 days, or longer than recommended by the manufacturer, before applying subsequent coats. Follow manufacturer's recommendations for surface preparation if primers or intermediate coats are allowed to dry longer than recommended by manufacturers of subsequent coatings. Each coat shall cover the surface of the preceding coat or surface completely, and there shall be a visually perceptible difference in shades of successive coats.

6. Finished Surfaces: Provide finished surfaces free from runs, drops, ridges, waves, laps, brush marks, and variations in selected colors.

C. Colors: Each coat shall be tinted a different shade from the preceding coat. Colors shall be in accordance with the color schedule on the drawings or as selected by the Engineer.

D. Finish Film Thickness: Apply primer, intermediate, and finish coats to not less than 1.5 mils dry film thickness, 4 mils wet unless recommended otherwise in writing by the manufacturer, for each coat and in accordance with the manufacturer's recommendations. Verify mil thickness by use of a suitable wet film gauge. Use a Tooke or other dry film gauge to test for total dry film thickness.

3.3 MISCELLANEOUS

A. Installation of Removed Items: After completion of final paint coat, removed items shall be reinstalled.

B. At the completion of other trades, touch-up damaged surfaces.

3.4 CLEAN-UP

A. During the progress of the work, all debris, empty crates, waste, drippings, etc., shall be removed by the Contractor and the grounds about the areas to be painted shall be left clean and orderly at the end of each work day.

B. Upon completion of the work, staging, scaffolding, containers, and all other debris shall be removed from the site. All paint, shellac, oil or stains splashed or spilled upon adjacent surfaces not requiring treatment (hardware, fixture, floor) shall be removed and the entire job left clean and acceptable.

END OF SECTION

DIVISION 13 - SPECIAL CONSTRUCTION

SECTION 13281

REMOVAL AND DISPOSAL OF ASBESTOS-CONTAINING MATERIALS

PART 1 – GENERAL

1.1 GENERAL REQUIREMENTS

Work shall consist of furnishing all labor, tools, materials, and equipment necessary and required to complete asbestos removal in place complete as indicated on the drawings and as specified herein.

1.2 SUMMARY

A. This Section specifies Contractor requirements when disturbing asbestos-containing materials (ACM) associated with the Kamuela Vacuum Cooling Plant, Demolition of Inactive Vacuum Cooling Warehouse (DOAH26B). Contractor shall refer to the survey data and verify the locations and quantities of ACM that will be disturbed as part of the planned demolition. Contractor shall ensure that employees and subcontractors involved in disturbing or removing hazardous materials have access to the survey report and the specifications, and understand and control asbestos hazards.

B. Contractor shall review the existing asbestos survey data provided as part of SECTION 01715 - EXISTING CONDITIONS - ASBESTOS/LEAD/HAZARDOUS MATERIAL SURVEY and verify the locations and quantities of ACM.

C. Asbestos-containing material was identified as follows:

Transite panels on exterior roofing system and walls, 20 percent Chrysotile

1.3 REFERENCES

A. Publications listed below form a part of this specification to the extent referenced. Publications are referred to in the text by the basic designation only. Federal requirements which govern asbestos abatement work or hauling and disposal of asbestos waste materials include, but are not limited to the following:

U.S. Department of Labor, Occupational Safety and Health Administration (OSHA), including but not limited to:

1. Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite; Final Rules - Title 29, Part 1910, Section 1001 and Title 29, Part 1926, Section 1101 of the Code of Federal Regulations

2. Respiratory Protection; Title 29, Part 1910, Section 134 of the Code of Federal Regulations

3. Access to Employee Exposure and Medical Records; Title 29, Part 1910, Section 2 of the Code of Federal Regulations

4. Hazard Communication; Title 29, Part 1910, Section 1200 of the Code of Federal Regulations

5. Specifications for Accident Prevention Signs and Tags; Title 29, Part 1910, Section 145 of the Code of Federal Regulations

B. U.S. Department of Transportation (DOT), including but not limited to: Hazardous Substances; Title 29, Parts 171 & 172 of the Code of Federal Regulations.

C. U. S. Environmental Protection Agency (EPA), including but not limited to:

1. Asbestos Abatement Projects; Worker Protection Rule Title 40 Part 763, Sub-part G of the Code of Federal Regulations

2. Asbestos Hazard Emergency Response Act (AHERA) Regulation Asbestos Containing Materials in Schools Final Rule & Notice Title 40, Part 763, Sub-part E of the Code of Federal Regulations

3. Training Requirements of AHERA Regulation Asbestos Containing Materials in Schools Final Rule & Notice Title 40, Part 763, Sub-part E, Appendix C of the Code of Federal Regulations

4. National Emission Standard for Hazardous Air Pollutants (NESHAP) National Emission Standard for Asbestos Title 40, Part 61, Sub-part A, and Sub-part M (Revised Sub-part B) of the Code of Federal Regulations

D. State of Hawaii: Requirements which govern asbestos abatement work or hauling and disposal of asbestos waste materials include, but not limited to, the following:

1. HAR – Asbestos Requirements - Title 11, Chapter 501

2. HAR – Fees For Asbestos Removal and Certification - Title 11, Chapter 503

3. HAR – Asbestos Abatement Certification Program - Title 11, Chapter 504

E. Local Requirements: Abide by applicable local requirements which govern asbestos abatement work or hauling and disposal of asbestos waste.

1.4 STANDARDS

Standards which apply to asbestos abatement work or hauling and disposal of asbestos waste include, but not limited to, the following:

1. American National Standards Institute (ANSI), Broadway, New York, New York 10018

   a. Fundamentals Governing the Design and Operation of Local Exhaust Systems Publication Z9.2-2012

   b. Practices for Respiratory Protection Publication Z88.2-2015

2. ASTM International, Race Street, Philadelphia, PA 19103

   Standard Practice for Visual Inspection of Asbestos Abatement Projects E1368-2014

1.5 DEFINITIONS

A. Amended Water: Water containing a wetting agent or surfactant.

B. Area Monitoring: Sampling of asbestos fiber concentrations within the asbestos control area and outside the asbestos control area, which is representative of the airborne concentrations of asbestos fibers which may reach the breathing zone of personnel potentially exposed to asbestos.

C. Asbestos: A group of naturally occurring minerals that separate into fibers. There are six asbestos minerals used commercially: chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite.

D. Asbestos Control Area: An area where asbestos removal operations are preformed which is isolated by physical boundaries to prevent unauthorized entry of personnel and to prevent the spread of asbestos dust, fibers, or debris.

E. Asbestos Fibers: Asbestos fibers having a length to diameter ratio of at least 3:1 and longer than 5 micrometers.

F. Asbestos Permissible Exposure Limit: The limit is 0.1 fibers (longer than 5 micrometers) per cubic centimeter of air as an 8-hour time weighted average as determined by Appendix A of 29 CFR 1926.1101.

G. Friable Asbestos Material: Material that contains more than one percent asbestos by weight which can be crumbled, pulverized, or reduced to powder by hand pressure when dry. Friable asbestos material is considered hazardous during removal and disposal procedures.

H. HEPA Filter Equipment: High Efficiency Particulate Air (HEPA) filtered vacuuming equipment with a UL 586 filter system capable of collecting and retaining asbestos fibers. Filters shall be 99.97 percent efficiency for retaining fibers of 0.3 micrometers or larger.

I. Industrial Hygienist (IH): A third party industrial hygienist, retained by the State, to oversee the asbestos compliance. The onsite work can be performed by an industrial hygiene technician (IHT). The IHT shall have a valid Project Monitor certification from the Hawaii Department of Health, and minimum 2 year experience, and shall be under the supervision of the industrial hygienist.

J. Local Exhaust System: A system in which static pressure in an enclosed control area is lower than that of the environment outside the control area, as specified herein.

K. Nonfriable Asbestos Material: Material that contain asbestos in which the fibers have been locked in by a bonding agent, coating, binder, or other material so that the asbestos is well bound and may not release fibers in excess of the asbestos permissible exposure limit during any appropriate use, handling, storing, transporting, or processing. Nonfriable asbestos material may become hazardous during removal and disposal procedures.

L. Personal Monitoring: Sampling of asbestos fiber concentrations within the breathing zone of an employee to determine the 8-hour time weighted average in accordance with Appendix A of 29 CFR 1926.1101. 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.

M. Removal Encapsulant: A manufactured asbestos penetrating encapsulant designed specifically for asbestos removal.

N. Surfactant (Wetting Agent): A chemical wetting agent added to water to improve penetration. The surfactant shall be 50/50 mixture of polyoxyethylene ether and polyoxyethylene ester, or equivalent, mixed in a proportion of one fluid ounce to 5 gallons of water or as specified by the manufacturer. An equivalent surfactant shall be understood to mean material with a surface tension of 29 dynes/cm, as tested in accordance with ASTM D 1331.

O. Time Weighted Average (TWA): TWA is an 8-hour time weighted average of airborne concentration of fibers (longer than 5 micrometers) per cubic centimeter of air which represents the employee's 8-hour workday as determined by Appendix A of 29 CFR 1926.1101.

1.6 DESCRIPTION OF WORK

Asbestos work generally includes asbestos-containing materials (ACM) that will be disturbed as part of this demolition project and identified in the survey report. Removal or encapsulation of ACM shall be conducted prior to removal or demolition of non-ACM . Asbestos material removal is governed by 40 CFR 61, Subpart M, National Emissions Standards for Hazardous Air Pollutants (NESHAP).

1.7 SUBMITTALS

A. Submit the following in accordance with Section 01300 - SUBMITTAL PROCEDURES.

B. Submittals shall be approved by the Engineer or Officer in Charge prior to commencing work involving asbestos materials.

1. Asbestos Plan: Submit a detailed job-specific plan as one complete document, of the work procedures that will minimize airborne dust, which shall be employed in the removal and demolition of materials containing asbestos.

2. The plan shall include:

a. A clear scope of work for the Abatement Contractor

b. Interface of trades involved in the construction

c. Sequencing of asbestos-related work

d. Disposal plan for hazardous and non-hazardous waste

e. Type of wetting agent or removal encapsulant to be used

f. Product specifications and Safety Data Sheets (SDS)

g. Written Respiratory Protection Program

h. Written Hazard Communication Program (HAZCOM)

i. Current, valid training records for personnel who will conduct asbestos disturbance activities.

j. Respirator fit test records

k. Respirators and protective equipment

l. A detailed description of the methods to be employed in order to control pollution

m. Emergency Procedures plan

n. A sketch showing the location, size, and details of asbestos control areas, including clean and dirty areas, buffer zones, shower, storage areas, change rooms, 3-stage decontamination chamber, and removal methods.

3. The asbestos plan shall be approved by the Engineer or Officer in Charge prior to the start of asbestos work. Prior to beginning work, the Contractor shall meet with the Engineer or Officer in Charge to discuss in detail the asbestos plan, including notifications, work procedures, and safety precautions.

4. Landfill: Submit written evidence that the landfill is approved for asbestos disposal by the State and local regulatory agencies. Within 3 working days after delivery, submit Hazardous Waste Manifest Form, prepared, signed, and dated by an agent of the landfill, certifying the amount of asbestos materials delivered to the landfill.

5. Respirator Program: ANSI Z88.2 and 29 CFR 1910.134. Contractor shall submit a list of workers who are respirator-qualified. Information shall also include date and type of fit testing and manufacturer and size of respirator.

6. Permits, Licenses, and Certificates: Submit a copy of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, and similar documents, correspondence and records established in conjunction with compliance with standards and regulations bearing upon performance of the work including:

   a. Notices: Submit notices required by Federal, State, and local regulations with proof of timely transmittal to agency requiring the notice.

   b. Permits: Submit a copy of current valid permits required by State and local regulations.

   c. Licenses: Submit a copy of all State and local licenses necessary to carry out the work of this contract.

1.8 NOTICES

Send written notification as required by State and local regulations prior to beginning any work on ACM to the following:

Indoor and Radiological Health Branch
State of Hawaii Asbestos Program
99-945 Halawa Valley Street
Aiea, HI 96701
Tel: (808) 586-5800

Include the following information in the notification:

1. Indication of whether notification is original or a revised notification.

2. Name and address of facility and operator and asbestos removal or operator.

3. Description of the facility being demolished or renovated, including the size, age, and present and prior use of the facility.

4. Type of operation: abatement or renovation

5. Estimate of the approximate amount of asbestos material to be removed from surface areas within the facility. For facilities in which the amount of asbestos material is less than 80 linear meters (260 linear feet) on pipes and less than 15 square meters (160 square feet) on other facility components, explain techniques of estimation.

6. Procedure and Analytical methods used to detect the presence of asbestos.

7. Location of the facility being demolished or renovated (street address, room numbers, etc.

8. Scheduled starting and completion dates of abatement or renovation and any preparatory work that would disturb asbestos.

9. Nature of planned abatement or renovation and method(s) to be used.

10. Description of work practices and engineering controls.

11. Procedures to be used to comply with the requirements of USEPA National Emission Standards for Hazardous Air Pollutants (NESHAP) Asbestos Regulations (40 CFR 61 Subpart M).

12. Name, telephone and address of waste transporter.

13. Name and location of the waste disposal site where the friable asbestos waste material will be deposited.

14. Certification that at least one person trained as required by NESHAP will supervise the operation.

15. For facilities being demolished under an order of a State or local governmental agency, issued because the facility is structurally unsound and in danger of imminent collapse, the name, title, and authority of the State or local governmental Engineer or Officer in Charge who has ordered the abatement, date the order was issued, and date on which abatement was to begin. Attach a copy of the order.

16. Other requirements per NESHAP.

1.9 PERMITS AND LICENSES

Obtain and maintain current permits and licenses as required by applicable state or local jurisdictions for the removal, transporting, disposal or other regulated activity relative to the work of this contract.

1.10 POSTING AND FILING OF REGULATIONS

Post notices required by applicable Federal, State and local regulations. Maintain at least one (1) copy of applicable Federal, State, and local regulations and standards and approved work plan.

PART 2 – PRODUCTS

2.1 WETTING MATERIALS

For wetting prior to disturbance of asbestos-containing materials, use either amended water or a removal encapsulant.

A. Amended Water: Provide water to which a surfactant has been added. Use a mixture of surfactant and water which results in wetting of the Asbestos-Containing Materials and retardation of fiber release during disturbance of the material equal to or greater than that provided by the use of one ounce of a surfactant consisting of 50 percent polyoxyethylene ester and 50% polyoxyethylene ether mixed with five gallons of water.

B. Removal Encapsulant: Provide a penetrating type encapsulant designed specifically for removal of Asbestos-Containing Material. Use a material which results in wetting of the Asbestos-Containing Materials and retardation of fiber release during disturbance of the material equal to or greater than that provided by water amended with a surfactant consisting of one ounce of a mixture of 50% polyoxyethylene ester and 50 percent polyoxyethylene ether in five gallons of water.

2.2 POLYETHYLENE SHEET

Provide a single polyethylene film in the largest sheet size possible to minimize seams, 6 mils thick, clear or frosted

2.3 DUCT TAPE

Provide duct tape in 2-inch or a 3-inch width as appropriate, with an adhesive, which is formulated to stick aggressively to sheet polyethylene.

2.4 SPRAY ADHESIVE

Provide spray adhesive in aerosol cans which is specifically formulated to stick tenaciously to sheet polyethylene.

2.5 DISPOSAL BAGS

Provide 6 mil thick leak-tight polyethylene bags labeled as required.

2.6 SIGNS

A. Post an approximately 20 inch by 14 inch manufactured caution sign at each entrance to the Work Area displaying the following legend with letter sizes and styles of a visibility required by 29 CFR 1926.1101. The ACM waste bags shall have the same caution label.

LEGEND

DANGER
ASBESTOS
MAY CAUSE CANCER
CAUSES DAMAGE TO LUNGS
AUTHORIZED PERSONNEL ONLY
WEAR RESPIRATORY PROTECTION AND
PROTECTIVE CLOTHING IN THIS AREA

B. Provide spacing between respective lines at least equal to the height of the respective upper line.

C. Post an approximately 10 inch by 14 inch manufactured sign at each entrance to each Work Area displaying the following legend with letter sizes and styles of a visibility at least equal to the following:

LEGEND	NOTATION
NO FOOD, BEVERAGES OR TOBACCO PERMITTED	3/4-inch Block
ALL PERSONS SHALL DON PROTECTIVE CLOTHING (COVERINGS) BEFORE ENTERING THE WORK AREA	3/4 -inch Block
ALL PERSONS SHALL SHOWER IMMEDIATELY AFTER LEAVING WORK AREA AND BEFORE ENTERING THE CHANGING AREA	3/4-inch Block

PART 3 – EXECUTION

3.1 EQUIPMENT

HEPA Vacuuming Equipment: Vacuuming equipment utilizing High Efficiency Particulate Air (HEPA) UL 586 filter system capable of collecting and retaining asbestos fibers.

3.2 AIR PURIFYING RESPIRATORS

A. Respirator Bodies: Provide half face, full face, or powered air purifying respirator (PAPR) type respirators.

B. Filter Cartridges: Provide, at a minimum, HEPA type filters labeled with NIOSH Certification for "Radionuclides, Radon Daughters, Dust, Fumes, Mists including Asbestos-Containing Dusts and Mists" and color coded in accordance with ANSI Z88.7 (2010). In addition, a chemical cartridge section may be added, if required for solvents, etc. In this case, provide combination cartridges labeled with the appropriate color code and NIOSH Certification.

C. Non-permitted Respirators: Do not use single use, disposable or quarter face respirators.

D. Require that respiratory protection be used at all times that there is any possibility of disturbance of asbestos-containing materials whether intentional or accidental.

E. Require that a respirator be worn by anyone in a Work Area at all times, regardless of activity, during a period that starts with any operation which could cause airborne fibers until the area has been cleared for re-occupancy.

F. Regardless of Airborne Fibers: Require that the minimum level of respiratory protection used be half-face air-purifying respirators with high efficiency particulate air filters.

3.3 FIT TESTING

A. Initial Fitting: Provide initial fitting of respiratory protection during a respiratory protection course of training. Fit types of respirator to be actually worn by each individual. Allow an individual to use only those respirators for which training and fit testing have been provided.

B. On an Annual Basis, check the fit of each worker's respirator by having irritant smoke blown onto the respirator from a smoke tube. The fit test frequency shall be according to the OSHA requirement.

C. Upon Each Wearing: Require that each time an air-purifying respirator is put on it be checked for seal with a positive and negative pressure fit check in accordance with the manufacturer's instructions or ANSI Z88.2 (2015).

3.4 TYPES OF RESPIRATORY PROTECTION NEEDED

A. Provide Respiratory Protection as indicated in paragraph below. Higher levels of protection may be provided as desired by Contractor. Where paragraph below does not apply, determine the proper level of protection by dividing the expected or actual airborne fiber count in the Work Area by the "protection factors" given below. The level of respiratory protection which supplies an airborne fiber level inside the respirator, at the breathing zone of the wearer, at or below 0.01 f/cc is the minimum level of protection allowed.

PROTECTION FACTORS

RESPIRATOR TYPE	PROTECTION FACTOR
Air purifying: Negative pressure respirator High efficiency filter Half or full facepiece	10
Powered Air Purifying Respirator (PAPR): Negative pressure respirator High efficiency filter Full facepiece	50
Type C supplied air: Positive pressure respirator Pressure demand Full facepiece	1,000
Type C supplied air: Positive pressure respirator, pressure demand Full facepiece equipped with an auxiliary positive pressure Self-Contained Breathing Apparatus (SCBA)	over 1,000

B. Use the following as a minimum unless air monitoring results indicate greater protection is necessary. Refer to Protection Factors table for choice of respirators.

1. Containment or barrier installation which does not disturb ACM: Dual Cartridge, Half-face Air Purifying Respirators.

2. Removing or cleaning items or barrier installation when such operation may disturb ACM: Dual Cartridge, Half-face Air Purifying Respirators.

3. ACM Removal: Dual Cartridge, Half-face Air Purifying Respirators.

4. Gross Cleaning of Removal Area(s): Dual Cartridge, Half-face Air Purifying Respirators.

5. Final wet-cleaning of area until final air tests show exposure in work areas to be below 0.01 f/cc: Dual Cartridge, Half-face Air Purifying Respirators.

6. Loading and unloading drums on truck (outside work area): Dual Cartridge, Half-face Air Purifying Respirators.

C. Fibers: For purposes of this section fibers are defined as all fibers regardless of composition as counted in the OSHA Reference Method (ORM), NIOSH Method 7400 procedure, or asbestos fibers of any size as counted using either a scanning or transmission electron microscope.

3.5 PROTECTIVE CLOTHING

Furnish personnel exposed to airborne concentrations of asbestos fibers greater than or equal to the permissible exposure limit with disposable protective whole body clothing, head covering, gloves, and foot coverings. Furnish disposable plastic or rubber gloves to protect hands. Cloth gloves may be worn inside the plastic or rubber gloves for comfort, but shall not be used alone. Use tape to secure sleeves at the wrists and to secure foot coverings at the ankles.

3.6 PERSONNEL DECONTAMINATION UNIT

Provide a decontamination area adjacent to the work area, as applicable. Decontamination area will consist of a polyethylene sheet placed adjacent to the work area large enough for employees to remove disposable coveralls and shower prior to exiting the work area. Waste generated during decontamination will be disposed of as asbestos containing debris. At the conclusion of work the plastic sheet will be disposed of as asbestos containing waste. Position a HEPA vaccum at the decontamination unit which workers will use to clean off protective clothing prior to removal.

3.7 CLEANING OF DECONTAMINATION UNITS

Clean debris and residue from the Decontamination Area on a daily basis. Damp wipe or hose down all surfaces after each shift change.

3.8 WORK PROCEDURE

Conduct asbestos-related work in accordance with 29 CFR 1926.1101 and as specified herein. Use wet removal procedures. Personnel shall wear and use protective clothing and equipment as specified in the approved Work Plan. Eating, smoking, or drinking shall not be permitted in the asbestos control area or change room. Personnel of other trades not engaged in the removal and demolition of asbestos shall not be exposed at any time to airborne concentrations of asbestos greater than or equal to 0.01 fibers (longer than 5 micrometers) per cubic centimeter of air, unless the personnel protection provisions of this Section are complied with by the trade personnel. Shut down, lock out, and isolate HVAC systems that supply, exhaust, or pass through the asbestos control areas. Seal intake and exhaust vents in the asbestos control area with 6 mil plastic sheet and tape. Seal seams in

HVAC components that pass through asbestos control area. Disconnect electrical service when wet removal is performed and provide temporary electrical service protected by a ground fault circuit interrupter (GFCI).

3.9 ASBESTOS CONTROL AREA REQUIREMENTS

A. Provide a marked perimeter around the work area during asbestos removal operations. No one will be permitted in the asbestos control area unless the person is provided with appropriate training and protective equipment (respirators and disposable coveralls). During the asbestos removal operation, should the asbestos abatement employees need to exit the controlled area, they shall remove their disposable coveralls, place them in an approved impermeable disposal bag, and then exit the area.

B. Contractor shall conduct personal air monitoring samples on 25 percent of the work crew or a minimum of two employees whichever is greater during each work shift.

C. Industrial Hygienist (IH) retained by the State will conduct boundary samples upwind and downwind of the asbestos control area during each work shift. If the concentration of airborne asbestos fibers at the boundaries is greater than or equal to 0.01 fibers per cubic centimeter of air, or background quantity whichever is greater, the Contractor shall stop work, and correct the condition(s) causing the increase. If adjacent areas are contaminated, the contaminated areas shall be cleaned and visually inspected by the IH and Contractor's Competent Person. IH shall certify that the area has been cleaned of all asbestos contamination.

3.10 ASBESTOS HANDLING PROCEDURES

A. General Procedure: If removing asbestos from components or removing components with asbestos adhered to it, wet asbestos material with a fine spray of amended water. Remove material and immediately place in approved impermeable bags that have been wetted. Collect asbestos waste, scrap, debris, bags, containers, equipment, and asbestos-contaminated clothing and place in sealed impermeable bags constructed of 6-mil plastic sheet.

B. Provide asbestos caution labels on sealed impermeable bags and asbestos waste containers. When applicable, use a lined chute, hoist, lift or other State-approved method to move double-bagged asbestos containing waste material from roof, or upper floors, to asbestos waste transport container. If chute is used, it must be affixed with a negative pressure unit to minimize airborne fiber concentrations.

3.11 AIR MONITORING

A. Work Area Airborne Fiber Levels: IH retained by the State will monitor airborne fiber levels in the Work Area, as applicable. The purpose of this air monitoring will be to detect potential airborne asbestos concentrations inside and outside of the control area.

B. Outside the Work area (Barrier) Fiber Levels: IH will assess airborne fiber levels outside the work area to determine if leakage is occuring into non-work areas.

C. IH will conduct air monitoring throughout the project.

D. Contractor is responsible for his/her worker protection and personal air monitoring and legally-required documentations.

3.12 STOP ACTION LEVELS

A. Inside Work Area: Maintain airborne levels in the work area of less than the Stop Action Level given below for the type of respiratory protection in use. If the fiber counts levels rise above this figure for any sample taken, revise work procedures to lower fiber counts. If fiber count levels for any work shift or 8 hour period exceeds the Stop Action Level, stop work except corrective action and leave air circulation system in operation. After correcting cause(s) of high fiber levels, do not recommence work for 24 hours unless otherwise authorized by the IH.

ASBESTOS

STOP ACTION LEVEL (f/cc)	RESPIRATOR REQUIRED	PROTECTION FACTOR
1	Half face APR	10
5	Full face APR	50
10	PAPR or Type C, Continuous flow	100
100	Type C, Pressure demand	1,000

B. Outside Work Area: If any air sample taken outside of the Work Area exceeds the baseline established prior to start of work, immediately and automatically stop work except corrective action. Contractor shall determine the source of the high reading and take appropriate corrective actions.

C. If the high reading was the result of a failure of Work Area isolation measures, initiate the following actions:

1. Decontaminate the affected area(s).

2. Require that respiratory protection be worn in affected the area until the area is cleared for other trade or reoccupancy.

D. If the high reading was the result of other causes, initiate corrective action as determined by the Competent Person and the IH.

E. Fibers Counted: TEM analysis will be used to resolve any disputes regarding fiber types when a project has been stopped due to excessive airborne fiber counts. Cost of TEM analysis shall solely be borne by the Contractor.

3.13 ANALYTICAL METHODS

The following methods will be used in analyzing filters used to collect air samples. The filters used shall be in accordance with the referenced methods.

1. Samples collected for PCM analysis shall be analyzed by NIOSH 7400 method.

2. Samples collected for TEM analysis shall be analyzed by the method set forth in the AHERA Regulations, 40 CFR 763, Appendix A.

3.14 SAMPLE VOLUMES

General: Number and volume of air samples taken by the IH will be in accordance with the following schedule (see 3.15 and 3.16, below). Sample volumes given may vary depending upon the analytical method used and Contractor method of removal.

3.15 BASELINE

Before Start of Work: IH will secure the following air samples to establish a baseline before start of asbestos removal work:

LOCATION SAMPLED	NUMBER OF SAMPLES MINIMUM	MINIMUM VOLUME (LITERS)	RATE (LPM)
Each Work Area	2 for up to 5000 sq.ft.; one additional per each additional 5000 sq.ft.	1,199	1-12
Outside the Work Area	1	1,199	1-12

3.16 DAILY

A. From start of work and as applicable, IH will take the following samples during removal of ACM

SAMPLE TYPE SAMPLE LOCATION	MINIMUM NUMBER OF SAMPLES	MINIMUM SAMPLE VOLUME (LITERS)	SAMPLE FLOW RATE (LPM)
Work Area – Each Work Area	2 per shift	480	1-5
Barrier – Area	2 per shift, unless	2,000	1-12

SAMPLE TYPE SAMPLE LOCATION	MINIMUM NUMBER OF SAMPLES	MINIMUM SAMPLE VOLUME (LITERS)	SAMPLE FLOW RATE (LPM)
outside of containment unit (determined by the IH)	sample area is dusty; then increase number as necessary		
Barrier – Clean Room of Decon Unit	2 per shift, unless sample area is dusty; then increase number as necessary	2,000	1-12

B. Additional samples may be taken at the IH's and UH's discretion. If airborne fiber counts exceed allowed limits, additional samples shall be taken as necessary to monitor fiber levels. Personal monitoring performed by the IH shall not remove the Contractor's responsibility to monitor his/her workers' health & safety and required documentations.

3.17 AIR SAMPLING MEDIA

Sample Cassettes: Samples will be collected on 25 mm. cassettes with 50 mm. extension cowl as follows:

PCM: 0.8 micrometer mixed cellulose ester.

3.18 LABORATORY TESTING

A. Services of a testing laboratory will be employed by the IH to obtain area air samples as indicated. IH will obtain samples daily. Asbestos air sample results shall be obtained within 24 hours of receipt from the laboratory. Contractor and the DOA will have access to air monitoring tests and results.

B. Contractor is responsible for laboratory analysis for the personal air monitoring. Results shall be made available within 24 hours of receipt from the laboratory.

3.19 CLEANUP AND DISPOSAL

A. Cleanup: Maintain surfaces of the asbestos control area free of accumulations of asbestos fibers. Restrict the spread of dust and debris; keep waste from being distributed over the general area. Do not dry sweep or blow down the space with compressed air. When asbestos removal, disposal, and cleanup are complete, The IH will certify, in writing, that the concentration of airborne asbestos in the control area and barrier samples are less than 0.01 fibers (longer than 5 micrometers) per cubic centimeter of air and that there are no visible accumulations of dust, PPE were adequate, work procedures, asbestos removal, boundary samples disposal procedures, containment and clearances samples were in accordance with 29 CFR 1926.1101 and contract specifications.

B. Competent Person and the IH will visually inspect the affected surfaces for residual asbestos material and accumulated dust before and after the removal of the asbestos control area; Contractor shall reclean areas showing dust or residual asbestos materials. If recleaning is required, monitor the asbestos airborne concentration during and after recleaning.

C. Disposal of Asbestos: Dispose of waste asbestos material at a State and EPA approved landfill. Procedure for hauling and disposal shall comply with 40 CFR 61, Subpart M, and State and local standards. Sealed impermeable bags may be dumped from drums into the burial site unless bags have been broken or damaged. Damaged bags shall remain in the drum and the entire contaminated drum shall be buried. Uncontaminated drums may be recycled. Workers unloading sealed drums shall wear appropriate respirators and personal protective equipment when handling asbestos materials at the disposal site.

D. Double Tape Wrapped: Asbestos materials shall be wrapped in 6-mil minimum thickness polyethylene sheets and taped with minimum 2-inch wide silver cloth duct tape. Asbestos materials shall be rewrapped with a second polyethylene sheet and taped before disposal to the dumpsite. Each bundle of wrapping shall not exceed 50 pounds in weight. Damaged polyethylene sheeting will not be accepted for disposal at the landfill.

E. Waste Shipment Records: Prior to delivery of ACM waste materials, the Contractor shall complete the EPA's Waste Shipment Records requirements on manifesting ACM waste removal, transportation, and final disposal. Payment for this Section will not be made until a completed manifest from the disposal facility is returned, and a copy furnished to the Engineer or Officer in Charge. Copy and instructions for Waste Shipment Record are attached at the end of this Section.

3.20 MEASUREMENT AND PAYMENT

Work involving removal and disposal of asbestos and demolition debris shall not be measured or paid for separately, but shall be considered incidental to the lump sum price bid for the item of which it is a part in the Bid Schedule.

ENTRY LOG
(Sample)

DATE: _____

DOA PROJECT: _____

SUPT.: _____

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.)

Note:

EMPLOYEE RELEASE FORM
(Sample)

Employee Name:

Employee Address:

Employee Telephone No.:

Name of Training center, Certificate Number and expiration Date:

Classification of work:

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 at the 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 area. 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 I have answered the above questions truthfully.

Signed (Employee) Date

Print name

CERTIFICATE OF WORKER'S ACKNOWLEDGEMENT

PROJECT NAME: _____ DATE: _____

PROJECT ADDRESS: _____

CONTRACTOR: _____

WORKING WITH ASBESTOS CAN BE DANGEROUS. INHALING ASBESTOS FIBERS HAS BEEN LINKED WITH VARIOUS TYPES OF CANCER. IF YOU SMOKE AND INHALE ASBESTOS FIBERS THE CHANCE THAT YOU WILL DEVELOP LUNG CANCER IS GREATER THAN THAT OF THE NON-SMOKING PUBLIC.

Your employee contract with the Owner for the above project requires that: You be supplied with the proper respirator and be trained in its use. You be trained in safe work practices and in the use of the equipment found on the job. You receive a medical examination. These things are to have been done at no cost to you.

RESPIRATORY PROTECTION: You must have been trained in the proper use of respirators, and informed of the type respirator to be used on the above referenced project. You must be given a copy of the written respiratory protection manual issued by your employer. You must be equipment at no cost with the respirator to be used on the above project.

TRAINING COURSE: You must be trained in the dangers inherent in handling asbestos and breathing asbestos dust and proper work procedures and personal and area protective measures. The topics covered in the course must have included the following:

Physical characteristics of asbestos
Health hazards associated with asbestos
Respiratory protection
Use of protective equipment
Pressure Differential Systems
Working practices include hands on or on-job training
Personal decontamination procedures
Air monitoring, personal and area

MEDICAL EXAMINATION: You must have had a medical examination within the past 12 months at no cost to you. This examination must have included: health history, pulmonary function tests and may have included an evaluation of a chest X-ray.

By signing this document you are acknowledging only that the Owner of the building you are about to work in has advised you of your right to training and protection relative to your employer, the Contractor.

Signature _____ Social Security No. _____

Print Name _____ Witness _____

ASBESTOS DISPOSAL FORM (Sample)

GENERATOR	1. WORK SITE NAME & MAILING ADDRESS	OWNER'S NAME	OWNER'S TELEPHONE NO.
	2. OPERATOR'S NAME & ADDRESS		OPERATOR'S TELEPHONE NO.
	3. WASTE DISPOSAL SITE (WDS) NAME, MAILING ADDRESS, AND PHYSICAL SITE LOCATION		WDS TELEPHONE NO.
	4. NAME AND ADDRESS OF RESPONSIBLE AGENCY		
	5. DESCRIPTION OF MATERIALS	6. CONTAINERS NO. TYPE	7. TOTAL QUANTITY M^3 (YD^3)
	8. SPECIAL HANDLING INSTRUCTIONS AND ADDITIONAL INFORMATION		
	9. OPERATOR CERTIFICATION: I HEREBY…		
	PRINTED/TYPED NAME & TITLE	SIGNATURE	DATE (MO/DY/YR)
TRANSPORTER	10. TRANSPORTER 1 (ACKNOWLEDGEMENT OF RECEIPT OF MATERIALS)		
	PRINTED/TYPED NAME & TITLE	SIGNATURE	DATE (MO/DY/YR)
	11. TRANSPORTER 2 (ACKNOWLEDGEMENT OF RECEIPT OF MATERIALS)		
	PRINTED/TYPED NAME & TITLE	SIGNATURE	DATE (MO/DY/YR)
DISPOSAL SITE	12. DISCREPANCY INDICATION SPACE		
	13. WASTE DISPOSAL SITE OWNER OR OPERATOR: CERTIFICATION OF RECEIPT OF ASBESTOS MATERIALS COVERED BY THIS MANIFEST EXCEPT AS NOTED IN ITEMS 1, 2, AND 3.		
	PRINTED/TYPED NAME & TITLE	SIGNATURE	DATE (MO/DY/YR)

ASBESTOS NOTIFICATION OF DEMOLITION & RENOVATION

(Ref. HAR Chapter 11-501)

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

I. Type of notification: O=original R=revised C=cancelled		
II. Type of operation: D=demolition R=renovation OD=Ordered Demolition 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:	Telephone#:	
IV. Is asbestos present (Y/N): Inspector's name:	Certification#:	State of certification:
V. Facility description (Include building number, floor and room number)		
Building name:		
Address:		
City:	State:	Zip code:
Site location:		
Building size:	Floors:	Age:
VI. Procedure used to detect the presence of asbestos Laboratory name:	Analytical method	
VII. Specify the nature of the asbestos material (TSI, surfacing, VAT, miscellaneous):		

Amount of asbestos, including: 1. RACM to be removed 2. CATI left in place, and 3. CATII left in place	RACM to be Removed	Nonfriable ACM not to be removed	
		Category I	Category II
Pipes (linear ft.)			
Surfacing (square ft.)			
Facility components (Cu. ft.)			

VIII. Scheduled asbestos abatement dates

Start (mm/dd/yy): Finish (mm/dd/yy)

Circle workdays and time: Weekdays: daytime: nighttime:
Weekends: daytime: nighttime:

IX. Scheduled renovation/demolition dates

Start (mm/dd/yy): Finish (mm/dd/yy)

Circle workdays and time: Weekdays: daytime: nighttime:
Weekends: daytime: nighttime:

X. Description of the planned renovation/demolition work and methods to be used:

XI. Description of the work practices and engineering controls to be used to prevent emissions of asbestos from the work-site:

Project designer name: Certification#: State:

XII. Waste transporter #1		
Name :		
Address :		
City:	State:	Zip code:
Contact person:	Telephone#:	
Waste transporter #2		
Name :		
Address :		
City:	State:	Zip code:
Contact person:	Telephone#:	
XIII. Waste disposal site:		
Facility Name:	Telephone#:	
Address :		
City:	State:	Zipcode:
XIV. For demolition ordered by a government agency, please identify:		
Name:	Title:	
Authority (Agency):		
Date of order (mm/dd/yy):	Date ordered to begin (mm/dd/yy):	
XV. For emergency renovation:		
Date and time of emergency Date (mm/dd/yy): Time: (a.m./p.m.)		
Description of sudden, unexpected events and the damage caused:		
Explanation of how the event caused an unsafe condition or would cause damage or an unreasonable financial burden:		
Person contacted for the approval at the Noise, Radiation & Indoor Air Quality Branch:		

Name:	Date (mm/dd/yy):	Time:	(a.m./p.m.)

XVI. Description of procedures to be followed in the event that unexpected asbestos is found or previously nonfriable asbestos material becomes crumbled, pulverized or reduced to powder.

XVII. I certify that an individual trained in the provisions of Hawaii administrative rules chapter 11-501, and certified as a contractor/supervisor, will be on-site during the entire renovation and/or demolition and evidence that the required training has been accomplished for this and all workers will be available at the work-site.

Signature of owner/operator — Date (mm/dd/yy):

XVIII. I certify that the information on this notification is correct.

Signature of owner/operator — Date (mm/dd/yy):

XIX. Additional Comments:

END OF SECTION

SECTION 13282

LEAD PAINT CONTROL

PART 1 – GENERAL

1.1 GENERAL REQUIREMENTS

Work shall consist of furnishing all labor, tools, materials, and equipment necessary and required to complete lead removal in place complete as indicated on the drawings and as specified herein.

1.2 SUMMARY

A. This Section specifies Contractor requirements when disturbing lead-containing paint (LCP) associated with the Kamuela Vacuum Cooling Plant, Demolition of Inactive Vacuum Cooling Warehouse (DOAH26B). Contractor shall refer to the survey data and verify the locations and quantities of LCP on interior and exterior areas of the Inactive Warehouse and Exterior areas of the Active Warehouse, that will be disturbed as part of the planned work. Contractor shall ensure that employees and subcontractors involved in disturbing or removing hazardous materials have access to the survey report and the specifications, and understand and control lead hazards.

B. Contractor shall review the existing lead survey data provided as part of SECTION 01715 - EXISTING CONDITIONS - ASBESTOS/LEAD/HAZARDOUS MATERIAL SURVEY and verify the locations and quantities of LCP.

C. Lead-containing paints were identified in the project areas as follows:

INACTIVE WAREHOUSE;

<u>Exterior</u>

Beige paint on metal Vacuum Tank 1, 78,000 -100,000 mg/kg

Light green paint on Transite roofing system and walls, 47,000 – 52,000 mg/kg

Silver paint on metal beams, columns, conduit, pipes, and trusses, 19,000 -51,000 mg/kg

Aqua paint on metal Vacuum Tank 2, 19,000 – 22,000 mg/kg

Gray paint on metal conduit and electrical box, 3,500 – 3,600 mg/kg

Off-white paint on metal beams, bollards, columns, trusses, 1,400 – 1,600 mg/kg

Gray paint on wood frames and walls, 1,100 – 1,300 mg/kg

Off-white paint on wood door frame, walls, widow frame, 1,200 mg/kg

Interior;

Light green paint on wood cabinets and walls in the Office, 9,500 -11,000 mg/kg

Light brown paint on metal column in the Office, 3,100 -3,700 mg/kg

Light brown paint on wood door in the Office, 1,300 – 1,500 mg/kg

Brown paint on wood door frame and window frame in the Office, 1,000 – 1,100 mg/kg

White paint on wood walls in the Office, 660 – 79 mg/kg

ACTIVE WAREHOUSE

Exterior

Gray paint on metal bollards, 33,000 – 39,000 mg/kg

Beige paint on metal roofing system and walls, 130 – 150 mg/kg

Yellow paint on wood panel, 49 – 52 mg/kg

Light gray paint on concrete bollards and bollard bases, 89 mg/kg

1. For the purpose of this Section, all paints with measurable levels of lead are considered Lead-Containing Paint which shall be removed or disturbed in accordance with applicable rules and regulations.

2. Total Lead-Based Paint abatement is not anticipated; however, any loose and flaky paints shall be removed to prevent exposures to the site workers, staff, the public, and the environment.

D. Implement appropriate engineering controls and safety measures to prevent site workers, occupants, other trades, public, and environmental exposures to lead hazards.

E. Inform employees, subcontractors, and other persons conducting work for this project, that interior and exterior surfaces of existing buildings associated with this project have lead-containing paints. Initiate and maintain applicable programs necessary to execute the work in accordance with the contract documents, Federal, State, and local rules and regulations.

F. Contractor shall be responsible for ensuring that work generating lead containing debris conforms to the following applicable Federal, State and local rules and regulations.

1. Occupational Safety and Health Administration (OSHA) and Hawaii Occupational Safety and Health (HIOSH) rules.

2. Environmental Protection Agency (EPA) Toxic Substance Control Act (TSCA 40 CFR Part 745 Lead) Requirements for Lead-Based Paint Activities in Target Housing and Child Occupied Facilities, Lead Renovation, Repair and Painting Rule (RRP Rule), and National Emission Standards of Hazardous Air Pollutants (NESHAP).

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

G. Initiate and maintain safety precautions and programs necessary to keep the work place safe for his/her employees and subcontractors.

H. For areas where paint is required to be removed from the substrate due to poor conditions, Conduct a representative sampling of the paint chip waste for TCLP test. Bid the project based on the assumption that disposal of this paint chip waste as hazardous waste is required. For unforeseen lead-containing paint, Contractor may be given equitable adjustment for the disposal cost only (testing cost will be in basic bid), as determined by the Engineer or Officer in Charge.

I. Costs incurred due to Contractor's inability to control hazards shall be borne solely by Contractor, including but not limited to, medical, legal, public and regulatory relations, investigation, clean-up, monitoring, and reporting.

1.3 COORDINATION WITH OTHER SECTION

Contractor shall refer to SECTION 13288 - TESTING/AIR MONITORING for requirements of work when disturbing hazardous materials.

1.4 LEAD-BASED PAINT FIELD TESTING

Contractor reserves the right to conduct existing paint testing for lead, utilizing X-Ray Fluorescence (XRF) analysis or Atomic Absorption Spectrophotometry Analysis (AAS).

1. Testing shall be conducted by an industrial hygienist, at the Contractor's expense.

2. Test results shall be presented to the Engineer or Officer in Charge for evaluation. Contractor's work practices, air monitoring and clearance requirements may be modified in accordance with paint test results.

1.5 SUBMITTALS

A. Contractor shall submit a Lead Hazard Control Plan as one complete document, 20 calendar days prior to lead disturbance work, including but not limited to:

1. A clear scope of work.

2. Description of methods to control lead hazards and dust.

3. A sketch of lead hazard control area and staging area for waste containers, equipment, and supplies.

4. Site Supervisor and/or Competent Person's name, contact number, and certifications.

5. Written Hazard Communication (HAZCOM) program, including worker training records.

6. Written Respiratory Protection Program

7. Medical surveillance records.

8. Written Emergency Procedures Plan.

9. Product specifications and safety data sheets (SDS).

10. Hazardous waste disposal plan

B. Within 10 days of waste disposal, Contractor shall submit the following:

1. A copy of the Hazardous Waste Disposal Log and the completed waste manifest.

2. Field records including daily field notes and photographs.

3. Sampling and analysis results.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Polyethylene Bags and Sheets: 6 mil minimum thickness in sizes required to accomplish the work.

B. Other Materials: Provide materials, such as, but not limited to, rags, lumber, plywood, fasteners, duct tape, and sealant which may be required to properly prepare and complete the work.

2.2 TOOLS AND EQUIPMENT

HEPA Vacuuming Equipment: Vacuuming equipment utilizing High Efficiency Particulate Air (HEPA) filters.

PART 3 – EXECUTION

3.1 PREPARATION PRIOR TO DISTURBANCE OF LEAD-CONTAINING PAINT

A. Document existing paint chips or debris prior to work (indoors and outdoors), as applicable.

1. If there are any paint chips or debris in the project area, pre-clean horizontal surfaces within the work area prior to disturbing existing LCP.

2. Treat paint chips or debris collected during pre-cleaning and during project related activities as lead-containing waste.

B. Minimize lead-containing dust during work performance using wet methods and equipment with HEPA collection devices. If visual inspection, air monitoring, or clearance by Competent Person, IH, or Engineer or Officer in Charge indicates that control measures are inadequate, Contractor shall stop work, clean up the affected area, and implement enhanced engineering controls at no additional cost to the Owner.

C. Establish a lead control area. Isolate and protect the portions of the area not within the scope of work using 6-mil polyethylene sheeting, or equivalent.

D. Pre-work Visual Inspection: Inspect the immediate project and adjacent areas for the presence of paint chips or debris and document the physical conditions with photographs and narratives. This documentation will serve as baseline conditions to which final visual clearance will be compared.

E. Demarcate the exterior lead control area using lead warning tape.

1. Lead warning tape shall be at least 20 feet away from the closest painted surface being disturbed.

2. Lead warning tape may be placed closer only if existing structural conditions prevent a 20-foot space between the lead warning tape and the working surface.

3. Place 6-mil polyethylene drop sheets around exterior surfaces.

4. Secure drop sheets so that wind, rain, or other forces will not dislodge the sheets.

5. Drop sheets shall extend horizontally, where applicable, at a distance sufficient to capture debris containing paint and substrates.

6. Drop sheets shall be periodically cleaned and kept free of debris. Any water captured by the drop sheet shall be contained and treated as lead-contaminated.

3.2 CONFORMANCE

Work shall be executed in accordance with the following:

A. Occupational Safety and Health Administration (OSHA) rules

1. Contractor shall ensure that work executed in this project is in accordance with the requirements of 29 CFR 1910.1025 and 29 CFR 1926.62.

2. Cost associated with the execution of work in accordance with these OSHA rules shall be the Contractor's responsibility.

3. Negative exposure assessment, air monitoring and testing cost shall be borne by the Contractor.

B. EPA Toxic Substance Control Act (TSCA)

1. Contractor shall implement good housekeeping methods to confine the spread of airborne lead dust when conducting work on painted surfaces.

a. Doors and windows shall be closed and temporary barriers, using 6 mil polyethylene sheeting, will be set up to minimize the spread of wind blown dust, as applicable.

b. Minimum 6 mil polyethylene shall be place on the floors and walls, minimum 10-feet on each side of where disturbance is anticipated.

2. At the end of each work day, Contractor shall remove visible debris and dust, HEPA vacuum, and wet-wipe below and around existing horizontal and vertical surfaces where disturbance of hazardous material was conducted.

3. As applicable, carpeted areas shall be lined with 6 mil polyethylene sheeting prior to the start of work and HEPA vacuumed after completion.

C. EPA Resource Conservation and Recovery Act (RCRA) of 1976, amended in 1980 and 1984.

1. The project site may fall into the category of Conditionally Exempt Small Quantity Generator (CESQG) if the facility generates less than 100 kilograms/month or 220 pounds/month of hazardous waste. Contractor shall be responsible for the completion of the Hazardous Waste Disposal Log provided in Appendix A of this Section.

2. Under the requirements for a CESQG, the generator:

    a. Must identify painted surfaces with LCP or assumed LCP, and the hazardous waste or acute hazardous waste generated at each site.

    b. Not store more than 1,000 kg or 2,200 pounds of hazardous waste, or assumed hazardous waste, at each site at any time.

    c. May dispose of the waste in a municipal solid waste (MSW) landfill provided that Toxicity Characteristic Leaching Procedure (TCLP) results meet the landfill criteria, 5.0 milligrams per liter (mg/L) lead and 1.0 mg/L cadmium.

    d. Must dispose of the waste material at an EPA approved landfill off-island that accepts such waste if the TCLP results indicate that the material is hazardous waste (at or above 5.0 mg/L lead or 1.0 mg/L cadmium).

3. Treatment of Assumed to be Lead-Containing Debris:

    a. Debris resulting from Contractor's work, such as cutting, scrapping, drilling, coring, chipping, or sanding, of known or assumed LCP surfaces, shall be segregated from the rest of the construction debris.

    b. Hazardous waste and assumed to be hazardous waste amounts exceeding the CESQG limit shall follow RCRA regulations for Small Quantity Generator or Large Quantity Generator.

4. Disposal of Lead-Containing Paint Debris:

    a. LCP or assumed LCP debris generated by the Contractor must conform to the requirements of 3.15 of this section.

        (1) Paint debris with TCLP lead concentration below 5.0 mg/L and TCLP cadmium below 1.0 mg/L may be disposed of at a municipal solid waste landfill that accepts such waste.

        (2) Disposal of this demolition debris on private land is prohibited, unless it is permitted by the State and the EPA.

        (3) Paint debris with TCLP lead and cadmium concentrations at or above 5.0 mg/L and 1.0 mg/L, respectively, must be disposed of as hazardous waste at an EPA-approved landfill off-island that accepts such waste.

b. Accumulation and mixing of hazardous waste of one generator (facility) with that of another generator is prohibited.

c. Disposal shall be in accordance with the permit requirements of the Municipal Solid Waste Landfill.

d. Contractor shall be responsible for costs related to the disposal of assumed LCP debris and hazardous paint chip waste.

3.3 ACTIVITIES DISTURBING LEAD-CONTAINING PAINT

A. Conduct LCP surface preparation as required for this project, and minimize lead-containing dust using wet methods and HEPA equipment. If visual inspection indicates control measures are inadequate, the Competent Person must stop work, notify Engineer or Officer in Charge, conduct clean-up, and implement enhanced engineering controls immediately at no additional cost to the Owner.

B. Do not execute dry removal or dry sweeping. Waste or paint debris generated during removal shall be promptly staged or packaged, and shall not accumulate uncontrolled at any time. Lead-containing waste shall be properly marked and stored in secure containers appropriate for storing lead-containing waste.

C. Do not allow lead-containing waste to be stored outside of the lead control area, in a high traffic unsecured area, or where the waste could interact with rain or wind and create a secondary hazard or contamination.

3.4 LEAD CONCENTRATIONS IN THE WORK AREA

A. Maximum permissible exposure to airborne concentrations of lead within the project area shall be 30 micrograms per cubic meter ($\mu g/m^3$) air. Stop work whenever this limit exceeded, and Competent Person shall remedy the condition prior to commencing work.

B. Instruct and train each worker in proper respiratory use.

1. Require that each worker always wear a respirator, properly fitted on the face, in the work area from the start of any operations which may cause airborne lead dust until the work area passes the required clearance.

2. Use respiratory protection appropriate for the lead dust levels encountered in the work place or as required for other toxic or oxygen-deficient situations encountered.

C. Air Purifying Respirators

Provide half-face or full-face type respirators.

1. Filter Cartridges: Provide, at a minimum, HEPA type filters labeled with the National Institute for Occupational Safety and Health (NIOSH) Certification for "Radionuclides, Radon Daughters, Dust, Fumes, Mists including Asbestos-Containing Dusts and Mists" and color coded in accordance with ANSI Z228.2. In addition, a chemical cartridge section may be added.

2. Non-Permitted Respirators: Do not use single use, disposable or quarter-face respirators.

3. Require that respiratory protection be used whenever there is any possibility of LCP disturbance, intentional or accidental.

4. Require that a respirator be worn by anyone in a lead control area at all times when LCP is disturbed.

5. Regardless of Lead-Containing Dust Levels: Require that the minimum level of respiratory protection used be half-face air-purifying respirators with HEPA filters.

D. Fit Testing

1. Initial Fitting: Provide initial fitting of respirators during a respiratory protection training. Fit types of respirator to be actually worn by each individual. Allow an individual to use only those respirators for which training and fit testing have been provided.

2. On an Annual Basis: Check the fit of each worker's respirator using irritant smoke. Valid fit test certificates shall be included in the Lead Hazard Control Plan which shall be maintained onsite.

3. Upon Each Wearing: Require that each time an air purifying respirator is donned, it will be checked for proper fitting with a positive and negative pressure seal checks in accordance with the manufacturer's instructions or ANSI Z88.2 (2015).

E. Type of Respiratory Protection Required

1. Provide respiratory protection as appropriate. Higher levels of protection may be provided as determined by Competent Person or workers themselves. Determine the proper level of protection by dividing the expected or actual airborne lead dust levels in the work area by the "protection factors" given below.

2. Consider the following unless air monitoring results indicate greater protection is necessary. Refer to the Protection Factors table for choice of respirators.

a. Loose equipment cleaning prior to removal in uncontaminated area: Half-face dual cartridge-type respirator.

b. Plastic installation which does not disturb LCP: Half-face dual cartridge-type respirator.

c. Removing or cleaning items or plastic installation when such operation may disturb lead paints or lead dust: Half-face dual cartridge-type respirator.

F. Areas: Contractor's Competent Person and IH shall frequently inspect the controlled areas and adjacent areas. Contractor activities shall not adversely impact the indoors or outdoors air and horizontal surfaces and ground of the project site.

3.5 STOP ACTION LEVELS

A. Inside Work Area: Maintain airborne levels in the work area of less than the Stop Action Level given below for the type of respiratory protection in use.

B. If the lead dust levels rise above this figure for any sample taken, enhance work procedures to lower ambient dust levels.

C. If lead dust levels for any work shift or 8-hour period exceeds the Stop Action Level, stop work except corrective action, and the Competent Person shall notify Engineer or Officer in Charge. After correcting the cause of lead dust levels, recommence work only after approval by the Competent Person. Competent Person shall document all decisions and follow-up actions and include them in the closeout report.

3.6 PROTECTIVE CLOTHING

Furnish personnel exposed to lead-containing dust with disposable protective whole body clothing, head covering, gloves, and foot coverings. Furnish disposable plastic or rubber gloves to protect hands from lead.

PROTECTION FACTORS

RESPIRATOR TYPE	PROTECTION FACTOR
Air purifying: Negative pressure respirator HEPA filter Half facepiece	Up to 500 $\mu g/m^3$
Powered-air purifying respirator (PAPR): Negative pressure respirator HEPA filter Full facepiece	Up to 2,500 $\mu g/m^3$
PAPR Positive pressure respirator HEPA filter Half or full facepiece	Up to 5,000 $\mu g/m^3$

RESPIRATOR TYPE	PROTECTION FACTOR
or Type C supplied air: Positive pressure respirator Continuous-flow half or full facepiece	

3.7 WARNING SIGNS AND LABELS

A. Provide warning signs at approaches to the lead control areas.

B. Locate signs at such a distance that personnel may read the sign and take necessary precautions before entering the area

C. Provide and affix labels to impermeable bags, lead waste drums, and other containers containing lead materials, scrap, waste, or debris.

D. Signs and labels shall comply with the requirements of 29 CFR 1910.1025.

3.8 TOOLS

Filters on vacuums and exhaust equipment shall be absolute HEPA filters and UL 586 labeled.

3.9 AIR MONITORING

A. Employee Monitoring: Contractor's Competent Person shall monitor employees' exposure to lead in accordance with OSHA requirements.

1. Contractor shall collect air samples from employees' breathing zones during each shift, for the duration of the LCP-disturbing work.

2. Contractor shall collect samples from at least 25% of workers conducting LCP-disturbing tasks, and not less than two workers.

B. Environmental Sampling During Paint Removal Work. An independent Industrial Hygienist (IH) retained by the State will conduct area air sampling daily, on each shift.

1. Sufficient area monitoring shall be conducted to verify unprotected personnel are not exposed at or above the action level, 30 micrograms per cubic meter air.

2. If action level is reached, stop work and correct conditions causing the elevated airborne lead dust levels. Resume only after approval of the IH.

3. Cost of retesting due to Contractor's inability to control lead dust shall be borne by Contractor.

4. For outdoor operations, IH shall determine the location and number of samples to be taken.

Work area and Adjacent:

LEAD

STOP ACTION LEVEL ($\mu g/m^3$)	RESPIRATOR REQUIRED	PROTECTION FACTOR
50	Half-face APR	10
5,000	PAPR or Type C, Continuous flow	100
50,000	Type C, Pressure demand	1,000

C. If the high lead air concentrations were the result of Contractor's failure of work area isolation measures, initiate the following actions:

1. Decontaminate the affected area(s).

2. Require that respiratory protection be worn in affected area until the area is cleared.

D. If the high reading was the result of other causes, initiate corrective action as determined by the IH.

E. Effect on Contract Sum. Complete corrective work with no change in the Contract Sum if lead-containing dust levels exceeding 30 $\mu g/m^3$ were caused by Contractor's activities. Costs involving delay, re-cleaning, additional lead air monitoring and quality control, investigation, and reporting shall be borne by Contractor.

3.10 ANALYTICAL METHODS

A. NIOSH 7082 method shall be used in analyzing air samples. Filters used shall be in accordance with the referenced method.

B. NIOSH 9100 method shall be used in analyzing lead wipe samples.

3.11 AIR SAMPLE MEDIA

Lead Sample Cassettes. Air samples will be collected on 37 millimeter (mm) cassettes with 50 mm extension cowl with 0.8 micrometer cellulose ester membrane.

3.12 LABORATORY TESTING

A. Services of a testing laboratory shall be employed by the IH. Lead air sample results will be made available within 48 hours upon receipt of laboratory analytical results.

B. Engineer or Officer in Charge will have access to air monitoring tests and clearance results.

3.13 CLEAN UP

A. Maintain surfaces of the lead control area free of accumulations of paint chips and dust. Prevent the spread of dust and debris; keep waste from being distributed over the general project area.

1. Do not dry sweep the area.

2. When the paint removal, demolition, or renovation is completed:

a. Clean visible lead paint contamination by vacuuming with a HEPA vacuum followed by wet mopping and wiping.

b. Contractor shall certify that the work was completed in accordance with OSHA 29 CFR 1910.1025, HUD 24 CFR 35, and EPA 40 CFR 745, and that there are no visible accumulations of lead-containing paint and dust in the project areas.

c. Competent Person and IH shall visually inspect the affected surfaces for residual lead paint chips and accumulated lead-containing dust after the work is completed.

d. Contractor shall re-clean areas showing lead-containing dust or residual lead paint chips to the Engineer or Officer in Charge's satisfaction.

B. Contractor is responsible for the restoration and cleaning of any areas outside the work area impacted by or contaminated by lead-containing dust or debris generated by the Contractor's work, such as removal, handling, or storage of lead-containing waste. Contractor shall perform remedial cleaning and restoration of these areas, if any, at no additional cost to the Owner.

3.14 CLEARANCE

Visual Clearance:

1. Pre-demolition inspection shall be conducted jointly by the Competent Person and the IH after painted surface treatment and prior to demolition of structures. Clearance will be granted when the Competent Person and IH agree that the subsequent demolition will generate no visible emission.

2. Final visual inspection shall be conducted by the Competent Person and the IH after demolition is completed and all debris is removed offsite. No visible paint chips or debris with paints shall remain.

3.15 DISPOSAL

A. Landfill may require characterization of the waste generated during the removal work, where a representative sample is analyzed for Toxicity Characteristic Leaching Procedure (TCLP) analysis.

1. If analytical result indicates the TCLP level is below the EPA guideline or within the landfill acceptance criteria, the waste generated from the project can be disposed of as general construction and demolition (C&D) debris.

2. If the TCLP test fails or the result exceeds the landfill acceptance criteria, the waste shall be treated as hazardous waste and be disposed of in a Resource Conservation Recovery Act (RCRA) permitted landfill. Contractor shall contact Engineer or Officer in Charge for EPA ID number.

B. Engineer or Officer in Charge will review for equitable adjustment of contract amount upon evaluation and acceptance of the TCLP results to determine the hazard characteristics. If the waste is determined to be RCRA hazardous waste, the waste shall be disposed of at an off-island EPA-approved facility.

C. Contractor shall submit a copy of the TCLP analytical results to Engineer or Officer in Charge prior to request for EPA ID number. Hazardous Waste Manifest and Landfill Receipt shall be submitted prior to the final billing.

3.16 GENERAL

A. Waste is to be hauled by a waste hauler with required licenses from State and local authority with jurisdiction.

B. Protect interior of truck or dumpster with Critical and Primary Barriers.

C. Carefully load containerized or bagged waste in fully enclosed dumpsters, trucks or other appropriate vehicles for transport. Exercise care before and during transport, to ensure that no unauthorized persons have access to the material. If required by DOT, vehicles shall be placarded with Department of Transportation labels.

D. Do not store containerized or bagged waste outside of the work area. Take containers from the work area directly to a sealed truck or dumpster.

E. Do not transport lead waste materials on open trucks. If waste material is to be transported in drums, label drums with the same warning labels as the bags.

F. Coordinate with landfills in advance of transport and of the quantity of material to be delivered.

G. After completion of hauling and disposal of demolition waste and paint waste, if separated, submit a copy of waste manifest, chain of custody form (if applicable), and waste storage facility receipt to Engineer or Officer in Charge. Final contract payment shall not be made until completed disposal documents are submitted.

3.17 RECORDKEEPING

A. Complete and submit a copy of the Project Hazardous Waste Log to the Engineer or Officer in Charge. See Appendix B of this Section.

B. Maintain accurate documentation of the site activities. Be prepared at all times to present real time information upon regulators' visits.

C. Contractor's Competent Person shall be onsite at all times.

3.18 MEASUREMENT AND PAYMENT

Except for the hazardous waste as indicated in Part 3.15, work performed under this Section shall not be measured or paid for separately, but shall be considered incidental to the lump sum price bid for the item of which it is a part in the Bid Schedule.

APPENDIX A

HAZARDOUS WASTE DISPOSAL LOG

(NAME OF PROJECT)
Street Address
City, State, Zip Code

YEAR	DESCRIPTION OF HAZARDOUS WASTE	APPROXIMATE WEIGHT IN POUNDS	SPECIAL HANDLING
JANUARY			
FEBRUARY			
MARCH			
APRIL			
MAY			
JUNE			
JULY			
AUGUST			
SEPTEMBER			
OCTOBER			
NOVEMBER			
DECEMBER			

_____
By Signature

_____
Print Name

APPENDIX B

PROJECT HAZARDOUS WASTE LOG
(Contractor to complete one per facility site)

PROJECT: _____
DOA JOB NO. _____
START DATE: _____ COMPLETION DATE: _____
GENERAL CONTRACTOR: _____
ADDRESS: _____
_____
TELEPHONE: _____ FAX NUMBER: _____
NAME OF SUPERINTENDENT FOR THIS PROJECT: _____

NAME OF GENERATOR (FACILITY): _____
ADDRESS: _____
_____
TELEPHONE: _____ FAX NUMBER: _____
DESCRIPTION OF HAZARDOUS WASTE: _____
APPROXIMATE WEIGHT (IN POUNDS): _____
MONTHLY DISPOSAL LOG:
MONTH: _____ WEIGHT IN POUNDS: _____
MONTH: _____ WEIGHT IN POUNDS: _____
MONTH: _____ WEIGHT IN POUNDS: _____
DISPOSAL SITE: _____

CONTRACTOR DISPOSING OF HAZARDOUS WASTE: _____
ADDRESS: _____
_____
TELEPHONE: _____ FAX NUMBER: _____

DISPOSAL CONTRACTOR IS A (CHECK ONE OF THE FOLLOWING):

CONDITIONALLY EXEMPT SMALL QUANTITY GENERATOR ☐☐

SMALL GENERATOR ☐☐

LARGE GENERATOR ☐☐

_____

APPROVAL:

STATE DESIGNATED COMPETENT PERSON: _____
COMPANY: _____
ADDRESS: _____
_____

TELEPHONE NUMBER: _____

_____ _____
SIGNATURE DATE

END OF SECTION

SECTION 13286

LIGHT BALLASTS AND LAMPS CONTAINING PCBs AND MERCURY

PART 1 – GENERAL

1.1 GENERAL CONDITIONS

Work shall consist of furnishing all labor, tools, materials and equipment necessary and required to remove and dispose of Polychlorinated Biphenyls (PCBs) and mercury-containing electrical components as indicated on the drawings and as specified herein.

1.2 SUMMARY

This Section specifies Contractor requirements when disturbing lead-containing paint (LCP) associated with the Kamuela Vacuum Cooling Plant, Demolition of Inactive Vacuum Cooling Warehouse (DOAH26B). Contractor shall refer to the survey data and verify the locations and quantities of LCP that will be disturbed as part of the planned demolition. Contractor shall ensure that employees and subcontractors involved in disturbing or removing hazardous materials have access to the survey report and the specifications, and understand and control lead hazards.

1.3 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

A. U.S. Department of Labor, Occupational Safety and Health Administration (OSHA), 29 CFR 1910.1000 Air Contaminants

B. U. S. Environmental Protection Agency (EPA):

1. 40 CFR 260 Hazardous Waste Management System, General

2. 40 CFR 261 Identification and Listing of Hazardous Waste

3. 40 CFR 262 Standards Applicable to Generators of Hazardous Waste

4. 40 CFR 263 Standards Applicable to Transporters of Hazardous Waste

5. 40 CFR 264 Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities

6. 40 CFR 265 Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities

7. 40 CFR 268 Land Disposal Restrictions

8. 40 CFR 270 EPA Administered Permit Programs: The Hazardous Waste Permit Program

9. 40 CFR 273 Standards for Universal Waste Management

10. 40 CFR 761 Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions

11. 40 CFR 178 Specifications for Packagings

C. State Requirements: State requirements which govern hauling and disposal of hazardous waste materials include but are not limited to the following:

HIOSH - Toxic Materials and Harmful Physical Agents - Title 12, Subtitle 8, Chapter 202

D. Local Requirements: Comply with local requirements which govern hauling and disposal of hazardous waste and universal waste.

1.4 DEFINITIONS

A. Industrial Hygienist (IH): A certified industrial hygienist or industrial hygienist retained by the Contractor who has minimum of five years of experience in hazardous materials and hazardous wastes. The IH shall possess minimum Bachelor's Degree in public health, natural science, engineering, or related fields.

B. Leak: Leak or leaking means any instance in which a PCB article, PCB container, or PCB equipment has any PCBs on any portion of its external surface.

C. Lamps: Lamp, also referred to as "universal waste lamp," is defined as the bulb or tube portion of an electric lighting devise. A lamp is specifically designed to produce radiant energy, most often in the ultraviolet, visible, and infra-red regions of the electromagnetic spectrum. Examples of common universal waste electric lamps include, but are not limited to, fluorescent, high intensity discharge, neon, mercury vapor, high pressure sodium, and metal halide lamps.

D. Polychlorinated Biphenyls (PCBs): PCBs as used in this Section shall mean the same as PCBs, PCB containing light ballasts, and PCB container, as defined in 40 CFR 761, Section 3, Definitions.

E. Spill: Spill means both intentional and unintentional spills, leaks, and other uncontrolled discharges when the release results in any quantity of PCBs running off or about to run off the external surface of the equipment or other PCB source, as well as the contamination resulting from those releases.

F. Universal Waste: Universal Waste means any of the following hazardous wastes that are managed under the universal waste requirements 40 CFR 273:

1. Batteries as described in Sec. 273.2

2. Pesticides as described in Sec. 273.3

3. Thermostats as described in Sec. 273.4

4. Lamps as described in Sec. 273.5

1.5 QUALITY ASSURANCE

A. Regulatory Requirements. Perform PCB related work in accordance with 40 CFR 761. Perform mercury-containing lamps storage and transport in accordance with 40 CFR 261, 40 CFR 264, 40 CFR 265, and 40 CFR 273.

B. Training. Certified industrial hygienist or industrial hygienist shall instruct and certify the training of all persons involved in the removal of PCB containing light ballasts and mercury-containing lamps. The instruction shall include: the dangers of PCB and mercury exposure, decontamination, safe work practices, and applicable OSHA and EPA regulations. The trainer shall review and approve the PCB and Mercury-Containing Lamp Removal Work Plan.

C. Regulation Documents. Maintain at all times one copy each at the office and one copy each at the jobsite of 29 CFR 1910.1000, 40 CFR 260, 40 CFR 261, 40 CFR 262, 40 CFR 265, 40 CFR 268, 40 CFR 270, and 40 CFR 273 and of the Contractor removal work plan and disposal plan for PCB and for associated mercury-containing lamps.

1.6 SUBMITTALS

A. Documents

1. Qualification of the Contractor’s Competent Person. Submit the name, address, telephone number, and a qualification statement of the Competent Person selected to perform the duties onsite.

2. Training certifications for workers.

3. PCB and Lamp Removal Work Plan. Submit a job-specific plan minimum 20 calendar days prior to the pre-construction meeting of the work procedures to be used in the removal, packaging, and storage of PCB-containing light ballasts and associated mercury-containing lamps and switches. Include in the plan: requirements for personal protective equipment (PPE), spill cleanup procedures and equipment, eating, smoking and restroom procedures. The Plan shall be approved and signed by the IH. Obtain approval of the plan by the Engineer of Officer in Charge prior to the start of PCB and/or lamp removal work.

4. PCB and Lamp Disposal Plan. Submit a PCB and lamp disposal plan minimum 20 calendar days prior to the pre-construction meeting. The Disposal Plan shall comply with applicable requirements of federal, state, and local PCB and Universal waste regulations and address the following:

   a. Estimated quantities of wastes to be generated, disposed of, and recycled.

   b. Names and qualifications of each Contractor that will be transporting, storing, treating, and disposing of the wastes. Include the facility location. Furnish two copies of EPA and state PCB and mercury-containing lamp waste permit applications and EPA identification numbers, as required.

   c. Names and qualifications (experience and training) of personnel who will be working onsite with PCB and mercury-containing lamp wastes.

   d. Spill prevention, containment, and cleanup contingency measures to be implemented.

   e. Work plan and schedule for PCB and mercury-containing lamp waste removal, containment, storage, transportation, disposal and/or recycling. Wates shall be cleaned up and containerize daily.

B. Closeout Submittals

1. Notification to EPA of PCB waste activities and EPA ID numbers

2. Transporter certification

3. Certificate of Disposal and/or Recycling

4. Testing results

1.7 PERSONAL PROTECTION REQUIREMENTS

A. Use special clothing

1. Disposable gloves (polyethylene)

2. Eye protection

3. Personal protective equipment

B. Spill response kit (refer to paragraphs under 3.03)

1. Absorbent pads and rags

2. Waste containers

3. Fans (in case of mercury vapor spill)

1.8 SCHEDULING

Contractor shall notify the Engineer of Officer in Charge 20 days prior to the start of PCB and mercury-containing lamp removal work.

PART 2 – PRODUCTS

Not applicable.

PART 3 – EXECUTION

3.1 WORK PROCEDURE

Furnish labor, materials, services, and equipment necessary for the removal of PCB containing light ballasts, associated mercury-containing fluorescent lamps or high intensity discharge (HID) lamps in accordance with local, state, or federal regulations. Do not expose PCBs to open flames or other high temperature sources since toxic decomposition by-products may be produced. Do not damage mercury containing fluorescent lamps or HID lamps.

3.2 WORK OPERATIONS

Ensure that work operations or processes involving PCB or PCB-contaminated materials are conducted in accordance with 40 CFR 761, 40 CFR 262, 40 CFR 263, and the applicable requirements of this section, including but not limited to:

A. Obtaining suitable PCB and mercury-containing lamp storage sites.

B. Notifying Engineer of Officer in Charge prior to commencing the operations.

C. Reporting leaks and spills to the Engineer of Officer in Charge.

D. Cleaning up spills.

E. Inspecting PCB and PCB-contaminated items and waste containers for leaks and forwarding copies of inspection reports to the Engineer of Officer in Charge.

F. Maintaining inspection, inventory, and spill records.

3.3 PCB SPILL CLEANUP REQUIREMENTS

A. PCB Spills. Immediately report to the Engineer of Officer in Charge any PCB spills.

B. PCB Spill Control Area. Rope off an area around the edges of a PCB leak or spill and post a "PCB Spill - Authorized Personnel Only" caution sign. Immediately transfer leaking items to a drip pan or other container.

C. PCB Spill Cleanup. 40 CFR 761, subpart G. Initiate cleanup of spills as soon possible, but no later than 24 hours of its discovery. Mop up the liquid with rags or other conventional absorbent. The spent absorbent shall be properly contained and disposed of as solid PCB wastes.

D. Records and Certification. Document the cleanup with records of decontamination in accordance with 40 CFR 761, Section 125, Requirements for PCB Spill Cleanup. Provide test results of cleanup and certification of decontamination.

3.4 REMOVAL

A. Ballasts. As ballasts removed from the lighting fixture, inspect label on ballast. Ballasts without a "No PCB" label shall be assumed to contain PCBs and containerized and disposed of as required under paragraphs 3.05 STORAGE FOR DISPOSAL and 3.07 DISPOSAL.

B. Lighting Lamps. Remove lighting tubes/lamps from the lighting fixtures and carefully place (unbroken) into appropriate containers (original transport boxes or equivalent). In the event of a lighting tube/lamp breaking, sweep and place waste in double plastic taped bags and dispose of as universal waste as specified herein.

3.5 STORAGE FOR DISPOSAL

A. Storage Containers for PCBs. In accordance with 49 CFR 178, store PCB in containers approved by U.S. Department of Transportation (DOT) for PCB.

B. Storage Containers for lamps. Store mercury containing lamps in appropriate DOT containers. The boxes shall be stored and labeled for transport in accordance with 40 CFR 273.

3.6 LABELING OF WASTE CONTAINERS

A. Indicate on containers the date the item was placed in storage and the name of the cognizant activity/building.

B. Affix labels to PCB waste container, "Caution - Contains PCB," conforming to 40 CFR 761, Subpart C.

C. Label mercury-containing lamp waste in accordance with 40 CFR 273.

3.7 DISPOSAL

Dispose of the regulated wastes in accordance with EPA, DOT, and local regulations at a permitted site.

A. Identification Number. Federal regulations 40 CFR 761 and 40 CFR 263 require that generators, transporters, commercial storers, and disposers of PCB waste posses EPA identification numbers. The Contractor shall verify that the activity has an EPA generator identification number for use on the Uniform Hazardous Waste manifest. If not, the Contractor shall advise the Engineer of Officer in Charge that it must file and obtain an I.D. number with EPA prior to commencement of removal work.

B. For mercury containing lamp removal, Federal regulations 40 CFR 273 require that large quantity handlers of Universal Waste (LQHUW) must provide notification of universal waste management to the EPA (or state Engineer of Officer in Charge in authorized states), obtain an EPA identification number, and retain for three years records of off-site shipments of universal waste. The Contractor shall verify that the Engineer of Officer in Charge has an EPA generator identification number for use on the Universal Waste manifest. If not, the Contractor shall advise the Engineer of Officer in Charge that it must file and obtain an I.D. number with EPA prior to commencement of removal work.

C. Transporter Certifications. Comply with disposal and transportation requirements outlined in 40 CFR 761 and 40 CFR 263. Before transporting the PCB waste, sign and date the manifest acknowledging acceptance of the PCB waste from the State. Return a signed copy to the Engineer of Officer in Charge before leaving the job site. Ensure that the manifest accompanies the PCB waste at all times. Submit transporter certification of notification to EPA of their PCB waste activities (EPA Form 7710-53).

D. Certificate of Disposal and/or Recycling. According to 40 CFR 761, certificate for the PCBs and PCB items disposed shall include:

1. The identity of the disposal and/or recycling facility, by name, address, and EPA identification number.

2. The identity of the PCB waste affected by the Certificate of Disposal including reference to the manifest number for the shipment.

3. A statement certifying the fact of disposal and/or recycling of the identified PCB waste, including the date(s) of disposal, and identifying the disposal process used.

4. A certification as defined in 40 CFR 761.

3.8 MEASUREMENT AND PAYMENT

Work performed under this Section shall not be measured or paid for separately, but shall be considered incidental to the lump sum price bid for the item of which it is a part in the Bid Schedule.

APPENDIX A

HAZARDOUS WASTE DISPOSAL LOG

(NAME OF PROJECT)
Street Address
City, State, Zip Code

YEAR	DESCRIPTION OF HAZARDOUS WASTE	APPROXIMATE WEIGHT IN POUNDS	SPECIAL HANDLING
JANUARY			
FEBRUARY			
MARCH			
APRIL			
MAY			
JUNE			
JULY			
AUGUST			
SEPTEMBER			
OCTOBER			
NOVEMBER			
DECEMBER			

_____
By Signature

_____
Print Name

APPENDIX B

PROJECT HAZARDOUS WASTE LOG
(Contractor to complete one per site)

PROJECT: _____
DOA JOB NO. _____
START DATE: _____ COMPLETION DATE: _____
GENERAL CONTRACTOR: _____
ADDRESS: _____
_____
TELEPHONE: _____ FAX NUMBER: _____
NAME OF SUPERINTENDENT FOR THIS PROJECT:
_____NAME OF GENERATOR (Facility):
_____
ADDRESS: _____
_____
TELEPHONE: _____ FAX NUMBER: _____
DESCRIPTION OF HAZARDOUS WASTE: _____
APPROXIMATE WEIGHT (IN POUNDS): _____
MONTHLY DISPOSAL LOG:
MONTH: _____ WEIGHT IN POUNDS: _____
MONTH: _____ WEIGHT IN POUNDS: _____
MONTH: _____ WEIGHT IN POUNDS: _____
DISPOSAL SITE: _____
CONTRACTOR DISPOSING OF HAZARDOUS WASTE: _____
ADDRESS: _____
_____
TELEPHONE: _____ FAX NUMBER: _____

DISPOSAL CONTRACTOR IS A (CHECK ONE OF THE FOLLOWING):
CONDITIONALLY EXEMPT SMALL QUANTITY GENERATOR □□
SMALL GENERATOR □□
LARGE GENERATOR □□

_____

APPROVAL:

STATE DESIGNATED COMPETENT PERSON: _____
COMPANY: _____
ADDRESS: _____
_____
TELEPHONE NUMBER: _____
_____ _____
SIGNATURE DATE

END OF SECTION

SECTION 13288

ASBESTOS TESTING AND MONITORING

PART 1 – GENERAL

1.1 GENERAL REQUIREMENTS

Work shall consist of furnishing all labor, tools, materials, and equipment necessary and required to complete asbestos removal in place complete as indicated on the drawings and as specified herein.

1.2 SUMMARY

A. This Section describes Contractor's responsibility for compliance while conducting work which disturbs asbestos-containing material. Related sections are:

SECTION 13281 – REMOVAL AND DISPOSAL OF ASBESTO-CONTAINING MATERIAL for work which disturbs asbestos.

B. Implement appropriate engineering controls and safety measures to prevent staff, site workers, occupants, other trades, the public, and the environment from exposure to hazardous materials.

C. Costs incurred due to Contractor inability to control hazards shall be borne by Contractor, including but not limited to, investigations, medical, legal, regulatory and public relations, clean-up, monitoring, and reporting.

D. An independent industrial hygiene (IH) firm, retained by the State will conduct the monitoring during the Contractor's work which disturbs ACM. IH firm shall have no affiliation with Abatement Contractor.

1.3 REQUIREMENTS

Testing and workers' breathing zone monitoring shall be conducted by the Contractor for the purpose of:

A. Verifying compliance with the applicable codes, regulations and laws regarding ACM abatement.

B. Ensuring that the legally-required documentation is collected in a timely manner.

C. Providing engineering controls during project.

1.4 TESTING/ AIR MONITORING/ INDUSTRIAL HYGIENE SUPERVISION AND AIR MONITORING

A. Industrial hygiene supervision and boundary air monitoring shall be performed by an independent IH firm retained by the State. The laboratory used for sample analysis shall be proficient in:

1. The National Institute of Standards and Technology, National Voluntary Laboratory Accreditation Program (NVLAP) for bulk asbestos or the Environmental Protection Agency (EPA) Research Triangle Institute (RTI) program for bulk asbestos analysis.

B. Air monitoring and project supervision will be conducted under the direction of an Industrial Hygienist (IH) who has minimum 5 years of experience in hazard abatement project management. On-site monitoring may be conducted by a competent and qualified IH Technician with a minimum of 2 years of experience in hazardous material abatement, provided activities are conducted under the supervision of the IH.

C. Aforementioned air monitoring and project supervision shall not remove the Contractor's responsibility for his/her worker protection and required documentations.

1.5 COORDINATION WITH OTHER SECTIONS

Testing and monitoring requirements included in the scope of work for any testing/air monitoring consultants or inspectors shall be coordinated with:

SETION 13281 – REMOVAL AND DISPOSAL OF ASBESTOS-CONTAINING MATERIAL

1.6 PRE-CONSTUCTION CONFERENCE

A. Hold conference prior to construction and shall be conducted by the Contracting Officer assisted by the Project Designer.

1. Attendance: Present also shall be the Contractor, Project Designer and or the Project Monitor and Building Representative(s). When the abatement Contractor is a sub-contractor to a General Contractor, a representative of the General Contractor shall also attend.

2. Agenda:

a. Review final schedule for project.

b. Verify legal requirements and special conditions.

c. Verify compliance with pre-construction requirements.

d. Obtain copies of all mandatory notifications.

e. Inspect sample respiratory equipment and other abatement equipment.

f. Review procedures and responsibilities.

g. Clarify the scope of work and its best impact on the users of the building.

PART 2 – PRODUCTS

Not applicable to this section.

PART 3 – EXECUTION

3.1 COMPETENT PERSON RESPONSIBILITIES

A. Contractor's Competent Person shall prepare, an asbestos Plan per Section 13281 Paragraph 1.7 B. State and training certifications shall be valid and reflect the anticipated workers on site.

B. Refer to Section 13281 and part 3.03, below, for additional responsibilities.

3.2 CONTRCTOR RESPONSIBILITIES

A. Submit complete work plans for review and concurrence by the Engineer or Officer in Charge. Refer to Sections 13281 for requirements of the work plan.

B. Maintain worker monitoring and necessary records for the Contractor's employees as required by OSHA (29 CFR 1926.1101), Hawaii Administrative Rules, and other applicable laws.

C. Obtain legally required documentation for air monitoring and submit a written respiratory protection program as part of the contract.

D. Costs involving investigations, air monitoring, legal, medical, regulatory and public relations, testing, and reporting due to Contractor inability to control hazards shall be borne by Contractor, and shall be deducted from the final contract payment.

E. Accommodate additional testing performed by the IH; however, this shall not remove Contractor's responsibility of monitoring required by law and contract specifications.

F. For final cleanup and decontamination following gross removal, remove the final polyethylene sheeting, or drop cloth, but leave the coverings for critical barriers, such as doors, windows, air ducts, etc., until successful clearance is obtained.

G. Asbestos Clearance:

1. IH retained by the State and the Contractor's Competent Person shall jointly

conduct visual inspections of the work area and the IH shall conduct air clearances prior to releasing the space to other trades, as applicable. Clearance samples will be analyzed by Phase Contrast Microscopy (PCM) for exterior samples and Transmission Electron Microscopy (TEM) for indoor and conflict resolution samples.

2. PCM clearance results shall be less than 0.01 fibers per cubic centimeter of air (f/cc).

3. TEM clearance results shall be less than 70 structures per square millimeter.

3.3 MONITORING AND INSPECTION BY COMPETENT PERSON

A. Duties of the Competent Person

1. Photographic Record of Project: Record work with representative photos. Photos shall become the property of the State and are to be accompanied by a detailed log.

2. Project Log: Competent Person shall be on site at all times and maintain daily field logs detailing key activities during ACM-related work and submit a summary of project activities to Engineer or Officer in Charge within 10 days of completion. Incorporate daily field reports with other project data into a final closeout report.

3. Visual Inspection of Controlled Areas: Conduct inspections of controlled areas, during the actual work performance, to document the work practices employed. Verify that scheduled abatement or mitigation work is completed, and the area was properly and promptly cleaned and ready for other trades involved in the project.

4. Change Order: If changes are necessary once construction begins, review request for change and make a recommendation for approval.

B. Site Monitoring by Competent Person

1. Onsite personnel air monitoring as required by OSHA, and the project specifications

2. Monitoring of decontamination procedures at control area entry/exit and of cleanup after each shift

3. Monitoring of controlled area maintenance and waste handling

4. Interface with IH, Designer of Records, representatives of regulatory agencies, and the Engineer or Officer in Charge

5. Ensure workers are trained, engineering controls in place, and proper respiratory protection is utilized by personnel within control areas

6. Relay to Engineer or Officer in Charge any discrepancies in Contractor's action with provisions of project specifications

3.4 TESTING/AIR MONITORING

A. IH retained by the State shall have authority to stop work or to exercise engineering controls during the project.

B. IH may conduct additional testing and air monitoring at his/her discretion.

C. Monitoring activities will be documented and submitted to Engineer or Officer in Charge with test results, interpretations, follow-up actions, and final resolutions.

3.5 SAMPLE DESIGN

The following is a typical sampling design per control area during the construction. Number of sample quantities and volume may vary.

A. Background Samples: Background baseline samples shall be taken prior to ACM work to establish pre-removal airborne concentration levels. High volume continuous flow samples shall be taken for anticipated control area. Work area samples shall be analyzed by the NIOSH 7400 method for asbestos.

B. Work Area Samples: Low volume samples of a maximum of 480 liters each shall be taken in the work area. Ambient air samples shall be taken outside of work area to assess and ensure that engineering controls are effective and that the persons entering the work area are properly protected from airborne hazards. If monitoring results inside and outside the controlled area indicate airborne concentrations is greater than 0.01 f/cc for asbestos, Contractor shall correct the condition(s) causing the increase and ensure that Contractor maintains the ambient conditions to below the action levels.

C. Barrier Samples: As applicable, two samples may be taken per barrier.

D. Environmental Samples: Each removal area shall be controlled so that airborne dust cannot escape into trade, staff, and public access areas. Per the IH’s discretion, high volume or low volume samples per controlled area will be taken.

3.6 MEASUREMENT AND PAYMENT

Work involving worker monitoring, waste characterization, and OSHA and EPA compliance shall not be measured or paid for separately but shall be considered incidental to the lump sum price bid for the item of which it is a part in the Bid Schedule.

END OF SECTION

SECTION 13289

LEAD TESTING AND MONITORING

PART 1 – GENERAL

1.1 GENERAL REQUIREMENTS

Work shall consist of furnishing all labor, tools, materials, and equipment necessary and required to complete asbestos removal in place complete as indicated on the drawings and as specified herein.

1.2 SUMMARY

A. This Section describes Contractor's responsibility for compliance while conducting work which disturbs lead-containing paint (LCP). Related sections are:

1. SECTION 13283 – LEAD PAINT CONTROL for requirements of work which disturbs lead-containing paint.

B. Implement appropriate engineering controls and safety measures to prevent staff, site workers, other trades, the public, and the environment from exposure to hazardous materials.

C. Costs incurred due to Contractor inability to control hazards shall be borne by Contractor, including but not limited to, investigations, medical, legal, regulatory and public relations, clean-up, monitoring, and reporting.

D. An independent industrial hygiene (IH) firm, retained by the State, will conduct the monitoring during the Contractor's work which disturbs LCP. IH firm shall have no affiliation with Abatement Contractor.

1.3 GENERAL REQUIREMENTS

Testing and workers' breathing zone monitoring shall be conducted by the Contractor for the purpose of:

A. Verifying compliance with the applicable codes, regulations and laws regarding LCP abatement.

B. Ensuring that the legally-required documentation is collected in a timely manner.

C. Providing engineering controls during project.

1.4 TESTING/ AIR MONITORING/ INDUSTRIAL HYGIENE SUPERVISION AND AIR MONITORING

A. Industrial hygiene supervision and boundary air monitoring shall be performed by an independent IH firm retained by the State. The laboratory used for sample analysis shall be proficient in:

1. The Environmental Lead Laboratory Accreditation program (ELLAP).

2. The National Lead Laboratory Accreditation Program (NLLAP).

B. Air monitoring and project supervision will be conducted under the direction of an Industrial Hygienist (IH) who has minimum 5 years of experience in hazard abatement project management. On-site monitoring may be conducted by a competent and qualified IH Technician with a minimum of 2 years of experience in asbestos abatement and/or the relevant hazardous material abatement, provided activities are conducted under the supervision of the IH.

C. Aforementioned air monitoring and project supervision shall not remove the Contractor's responsibility for his/her worker protection and required documentations.

1.5 COORDINATION

Coordinate with the Consultant/Project Monitor for the testing and monitoring requirements included in Section 13282 – LEAD PAINT CONTROL MEASURES for testing/air monitoring Project Monitor and all applicable Federal, State, and local regulations.

1.6 PRE-CONSTUCTION CONFERENCE

A. Hold conference prior to construction and shall be conducted by the Contracting Officer assisted by the Project Designer.

1. Attendance: Present also shall be the Contractor, Project Designer and or the Project Monitor and Building Representative(s). When the abatement Contractor is a sub-contractor to a General Contractor, a representative of the General Contractor shall also attend.

2. Agenda:

a. Review final schedule for project.

b. Verify legal requirements and special conditions.

c. Verify compliance with pre-construction requirements.

d. Obtain copies of all mandatory notifications.

e. Inspect sample respiratory equipment and other abatement equipment.

f. Review procedures and responsibilities.

g. Clarify the scope of work and its best impact on the users of the building.

PART 2 – PRODUCTS

Not applicable to this section.

PART 3 – EXECUTION

3.1 COMPETENT PERSON RESPONSIBILITIES

A. Contractor's Competent Person shall prepare a Lead Hazard Control Plan per Section 13282 Paragraph 1.5 A. State and training certifications shall be valid and reflect the anticipated workers on site.

B. If required by the landfill, Competent Person shall provide proof of waste characterization and disposal documents. In the event that the waste is determined to be hazardous, inform the Contracting Officer, obtain EPA ID number, and request equitable adjustment to the contract.

C. Refer to Sections 13282, and part 3.3, below, for additional responsibilities.

3.2 CONTRACTOR RESPONSIBILITIES

A. Submit complete work plans for review and concurrence by the Contracting Officer. Refer to Section 13282 for requirements of the work plan.

B. Contractor shall be responsible for providing the daily personal air monitoring and necessary records for all of the Contractor's employees for the duration of the project as required by OSHA (29 CFR 1926.62) and all other applicable laws.

C. Contractor shall obtain the OSHA required reports for personnel air monitoring as part of the contract.

D. Contractor shall be responsible for daily personal air samples that shall be collected on at least 25% of the Contractor's personnel performing removal work on similar tasks and for the duration of the project. Submit within 5 working days to the Contracting Officer.

E. Contractor is solely responsible for protecting their workers, other personnel, and the public from any work activities at the work site and property regardless of the testing and monitoring conducted by the IH.

F. Costs involving investigations, air monitoring, legal, medical, regulatory and public relations, testing, and reporting due to Contractor inability to control hazards shall be borne by Contractor, and shall be deducted from the final contract payment.

G. Accommodate additional testing performed by the IH; however, this shall not remove Contractor's responsibility of monitoring required by law and contract specifications.

H. For final cleanup and decontamination following gross removal, remove the final polyethylene sheeting, or drop cloth, but leave the coverings for critical barriers, such as doors, windows, air ducts, etc., until successful clearance is obtained and as applicable.

I. Lead Clearance by Visual Inspection

1. IH retained by the State and the Contractor's Competent Person shall conduct visual inspection.

2. No visible emissions of lead paint debris or dust.

3.3 MONITORING AND INSPECTION BY COMPETENT PERSON

A. Duties of the Competent Person

1. Photographic Record of Project: Record work with representative photos. Photos shall become the property of the State and are to be accompanied by a detailed log.

2. Project Log: Competent Person shall be on site at all times and maintain daily field logs detailing key activities during LCP-related work and submit a summary of project activities to the Contracting Officer within 10 days of completion. Incorporate daily field reports with other project data into a final closeout report.

3. Visual Inspection of Controlled Areas: Conduct inspections of controlled areas, during the actual work performance, to document the work practices employed. Verify that scheduled abatement or mitigation work is completed, and the area was properly and promptly cleaned and ready for other trades involved in the project.

4. Change Order: If changes are necessary once construction begins, review request for change and make a recommendation for approval. Per Section, 13282 Paragraph 3.18, removal activities and disposal of wastes will not be measured or paid separately, except for the hazardous waste determined by the waste characterization.

B. Site Monitoring by Competent Person

1. Onsite personnel air monitoring as required by OSHA, and the project specifications

2. Monitoring of decontamination procedures at control area entry/exit and of cleanup after each shift

3. Monitoring of controlled area maintenance and waste handling

4. Interface with IH, Designer of Records, representatives of regulatory agencies, and the Contracting Officer

5. Ensure workers are trained, engineering controls in place, and proper respiratory protection is utilized by personnel within control areas

6. Relay to the Contracting Officer any discrepancies in Contractor's action with provisions of project specifications

3.4 TESTING/AIR MONITORING

A. IH retained by the State shall have authority to stop work or to exercise engineering controls during the project.

B. IH may conduct additional testing and air monitoring at his/her discretion.

C. Monitoring activities will be documented and submitted to the Contracting Officer with test results, interpretations, follow-up actions, and final resolutions.

3.5 SAMPLE DESIGN

The following is a typical sampling design per control area during the construction. Number of sample quantities and volume may vary.

A. Work Area Samples: Low volume samples of a maximum of 480 liters each shall be taken in the work area. Ambient air samples shall be taken outside of work area to assess and ensure that engineering controls are effective and that the persons entering the work area are properly protected from airborne hazards. If monitoring results inside and outside the controlled area indicate airborne concentrations is greater than 30 $\mu g/m^3$ air for lead, Contractor shall correct the condition(s) causing the increase and ensure that Contractor maintains the ambient conditions to below the action levels.

B. Barrier Samples: As applicable, two samples may be taken per barrier.

C. Environmental Samples: Each removal area shall be controlled so that airborne dust cannot escape into trade, staff, and public access areas. Per the IH's discretion, high volume or low volume samples per controlled area will be taken.

3.6 MEASUREMENT AND PAYMENT

Work involving worker monitoring, waste characterization, and OSHA and EPA compliance shall not be measured or paid for separately but shall be considered incidental to the lump sum price bid for the item of which it is a part in the Bid Schedule.

END OF SECTION