

# Demolition of Building 304 Complex

Fort Ruger, Hawaii

PN 15140035, Job No. CA-1418-C

## *Specifications*

TMK 3-1-042: 006

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### **Prepared for:**

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Department of Defense

Hawaii Army National Guard

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# TECHNICAL SPECIFICATIONS

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## **DIVISION 1 - GENERAL REQUIREMENTS**

### **SECTION 01100 - PROJECT REQUIREMENTS**

#### **PART 1 - GENERAL**

##### **1.01 WORK COVERED BY CONTRACT DOCUMENTS**

- A. Project Identification: Project consists of Demolition of Building 304, CSMS-1 HIARNG Maintenance Shop Complex, Fort Ruger/Diamond Head Crater, 3949 Diamond Head Road, Honolulu, Hawaii, 96816
- B. The Work consists of demolishing and removing the existing Building 304, 304A 304B, 304D, 304E, 304F, 304G, wash rack, oil water separator, chain link fence, asphaltic concrete, concrete, parking area, lighting, cut and plug of all utilities, to provide a level grassed area, hazardous material abatement, restored to the original condition.
  1. The Work includes
    - a. Sitework and Demolition.
    - b. Abatement Work.
- C. Perform operations and labor necessary to execute, complete and deliver the Work as required by the Contract Documents.
- D. The Division 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 work specified within each section.
- E. Contractor shall not alter the Drawings and Specification. If an error or discrepancy is found, notify the Contracting Officer.
- F. Specifying of interface and coordination in the various specification sections is provided for information and convenience only. These requirements in the various sections shall complement the requirements of this Section.

##### **1.02 SPECIFICATION FORMATS AND CONVENTIONS**

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
  1. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated 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. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be inferred, as the sense requires. Singular words shall be interpreted as plural, and plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates. 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.

2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.
    - a. The words “shall”, “shall be”, or “shall comply with”, depending on the context, are implied where a colon (:) is used within a sentence or phrase.
  3. Abbreviations and Acronyms for Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Gale Research’s “Encyclopedia of Associations” or in Columbia Books’ “National Trade & Professional Associations of the U.S.”.
- B. Terms
1. Directed: Terms such as “directed”, “requested”, “authorized”, “selected”, “approved”, “required”, and “permitted” mean directed by Contracting Officer, requested by Contracting Officer, and similar phrases.
  2. Indicated: The term “indicated” refers to graphic representations, notes, or schedules on drawings or to other paragraphs or schedules in specifications and similar requirements in the Contract Documents. Terms such as “shown”, “noted”, “scheduled”, and “specified” are used to help the user locate the reference.
  3. Furnish: The term “furnish” means to supply and deliver to project site, ready for unloading, unpacking, assembly, and similar operations.
  4. Install: The term “install” describes operations at project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
  5. Provide: The terms “provide” or “provides” means to furnish and install, complete and ready for the intended use.
  6. Installer: An installer is the Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-Subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
  7. Submit: Terms such as “submit”, “furnish”, “provide”, and “prepare” and similar phrases in the context of a submittal, means to submit to the Contracting Officer.
  8. Engineer: Terms such as “Engineer” similar phrases refers to the Design Engineer of Record.
  9. DOD/Engineer: Terms such as “DOD/Engineer” similar phrases refers to the DOD Chief Engineering Officer, or the authorized person to act in the Engineer’s behalf.

10. Contracting Officer: Terms such as "Contracting Officer" is synonymous with the term "DOD/Engineer".

11. Department: Terms such as "Department" or similar shall refer to State of Hawaii, Department of Defense.

C. Industry Standards

1. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

2. Publication Dates: Comply with standards in effect as of date of the Contract Documents, unless otherwise indicated.

3. Conflicting Requirements: If compliance with 2 or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Contracting Officer for a decision before proceeding.

**1.03 TIME OF PERFORMANCE**

A. The Time of Performance for this Contract shall be TWO HUNDRED SEVENTY (270) Calendar Days from the Notice to Proceed unless extended by delays excused by the DOD as documented in writing. The Notice to Proceed shall be issued by the DOD separately to the CONTRACTOR.

**1.04 WORK SEQUENCE**

A. The Work will be conducted in a single construction phase.

**1.05 USE OF PREMISES AND WORK RESTRICTIONS**

A. General: Contractor shall have full use of the area defined in the plans as Limits of Work for construction operations, including use of project site, during construction period. Contractor's use of premises is limited only by State's right to perform work or to retain other Contractors on portions of the project site.

B. Contractor's use of premises is restricted as follows:

1. Construction Times and Schedule:

a. Night, weekend and overtime work is not allowed.

b. All work will be done within 7:30 a.m. to 4:30 p.m. which will be considered "normal business hours".

2. Site Access and Parking:

a. Parking: Parking for the Contractor's employees (or Subcontractors) will be limited to the available areas within the designated Project Contract Limits or in areas designated by the Contracting Officer. Do not use parking stalls in regularly designated parking zones within the Diamond Head Crater.

Unauthorized vehicles parked in marked stalls and in any area outside of the designated project construction site will be subject to towing at the Contractor's expense.

3. Sanitation:
  - a. Contractor shall provide their own toilet facilities at no additional cost to the State.
  
4. Noise and Dust Control:
  - a. In adjacent locations surrounding the project site, noise, dust and other disrupting activities, resulting from construction operations, are detrimental to the conduct of the Diamond Head State Monument and Park activities. Therefore, Contractor shall monitor its construction activities. Exercise precaution when using equipment and machinery to keep the noise and dust levels to a minimum.
  
  - b. To reduce loud disruptive noise levels, ensure mufflers and other devices are provided on equipment, internal combustion engines and compressors.
  
  - c. Schedule construction activities that create excessive noise and dust problems, such as concrete coring, drilling, hammering, trenching, and demolition, for the weekends, holidays or as coordinated with the Contracting Officer. Overtime costs for the Contractor's employees and work force are the Contractor's responsibility.
  
  - d. The Contracting Officer will require any construction activity that produces excessiveness of noise and dust to be performed during non-peak hours for the Diamond Head State Monument and Park. The Contracting Officer shall make the final determination. Overtime costs for the Contractor's employees and work force are the Contractor's responsibility.
  
5. Other Conditions:
  - a. Arrange for construction debris and trash to be removed from project site weekly.
  
  - b. Operate machinery and equipment with discretion and with minimum interference to driveways and walkways. Do not leave machinery and equipment unattended on roads and driveways.
  
  - c. Store materials in the areas as designated by the Contracting Officer. Locate construction equipment, machinery, equipment and supplies within the Project Contract Limits.
  
  - d. Keep access roads to the project site free of dirt and debris. Provide, erect and maintain lights, barriers, signs, etc. when working to protect pedestrians and moped/bicycle riders. Obey all traffic and safety regulations.

**1.06 WORK UNDER OTHER CONTRACTS**

- A. Separate Contract: The State may execute a separate contract for certain construction at the project site that was not known at the time Offers were submitted.
  
- B. Cooperate fully with separate Contractors so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract.

**1.07 FUTURE WORK**

- A. Future Contract: The State may award a separate contract for additional work to be performed at the site after Substantial Completion. Completion of that work will depend on successful completion of preparatory work under this Contract.

**1.09 MISCELLANEOUS PROVISIONS**

- A. Historical Archaeological Artifacts: All items having any apparent historical or archaeological interest discovered in the course of construction activities shall be carefully preserved. Should historic remains such as artifacts, burials, concentrations of shell or charcoal be encountered during the construction activities, work shall cease immediately in the adjacent vicinity of the find and the applicable site shall be protected from further damage. The Contractor shall immediately contact the Contracting Officer and the State Historic Preservation Division (SHPD) DLNR at (808) 692-8015. SHPD will assess the significance of the find and recommend an appropriate mitigation measure if necessary.

**PART 2 - PRODUCTS (Not Used)**

**PART 3 - EXECUTION (Not Used)**

END OF SECTION

## **SECTION 01310 - PROJECT MANAGEMENT AND COORDINATION**

### **PART 1 - GENERAL**

#### **1.01 SUMMARY**

- A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
  - 1. General project coordination procedures.
  - 2. Project meetings.

#### **1.02 PERFORMANCE AND COORDINATION**

- A. Contractor is in charge of the Work within the Project Contract Limits, and shall direct and schedule the Work. Include general supervision, management and control of the Work of this project, in addition to other areas more specifically noted throughout the Specifications. Final responsibility for performance, interface, and completion of the Work and the Project is the Contractor's.
- B. The Contractor is responsible for jobsite Administration. Provide a competent superintendent on the job and provide an adequate staff to execute the Work. In addition, all workers shall dress appropriately and conduct themselves properly at all times. Loud abusive behavior, sexual harassment and misconduct will not be tolerated. Workers found in violation of the above shall be removed from the job site as directed by the Contracting Officer.
- C. 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.
- D. Coordination: Provide project interface and coordination to properly and accurately bring together the several parts, components, systems, and assemblies as required to complete the Work pursuant to the GENERAL CONDITIONS and SPECIAL CONDITIONS.
  - 1. Provide interface and coordination of all trades, crafts and subcontracts. Ensure and make correct and accurate connections of abutting, adjoining, overlapping, and related work. Provide appurtenances, and incidental items needed to complete the Work, fully, and correctly in accordance with the Contract Documents.

#### **1.03 COOPERATION WITH OTHER CONTRACTORS**

- A. The State reserves the right at any time to contract for or otherwise perform other or additional work within the Project Contract Limits. The Contractor of this project shall to the extent ordered by the Contracting Officer, conduct its work so as not to interfere with or hinder the progress or completion of the work performed by the State or other Contractors.

#### **1.04 COORDINATION WITH OTHER PRIME CONTRACTORS**

- A. Multiple prime Contractors performing work under separate agreements with the State may be present near the project location, adjacent to and abutting the Project

Contract Limits. This Contractor shall coordinate activities, sequence of work, protective barriers and any and all areas of work interfacing with other Prime Contractor's work. Contractor shall provide a continuity of finishes, walks, landscape, etc. at abutting Contract Limits so no additional work will be required. Any damage to other Prime Contractor's Work committed by this Contractor (or its Subcontractor) shall be repaired promptly at no additional cost to the State.

- B. Coordinate Subcontractors and keep them informed of any work from the other Projects that may affect the site or the Subcontractor's work. If the Contractor has any questions regarding its coordination responsibilities or needs clarification as to the impact in scheduling of its work and the work of other projects, this Contractor shall notify the Contracting Officer in writing.
- C. Subject to approval by the Contracting Officer, this Contractor shall amend and schedule its work and operations to minimize disruptions to the work and operations of other projects.
  - 1. Relocate or remove and replace temporary barriers, fencing supports or bracing to allow work by others to proceed unimpeded. Do not remove required barriers supporting work until specified time or as approved by the Contracting Officer. This does not relieve the Contractor of the responsibility of proper coordination of the work. If directed by the Contracting Officer, leave in place any temporary barriers.
  - 2. Coordinate work that abuts or overlaps work of the other projects with the Contracting Officer and other Prime Contractors to mutual agreement so that work is 100 percent complete with continuity of all materials, systems and finishes.
  - 3. When directed by the Contracting Officer, provide access into the construction zone to allow the other project's Contractor(s) to perform their Work and work that must be interfaced.
  - 4. Contractor shall adjust and coordinate its Work and operations as required by the other projects as part of the Work of this contract without additional cost or delay to the State.
  - 5. When directed by the Contracting Officer provide a combined Contractor's construction schedule.

#### **1.06 PROJECT MEETINGS AND TRAINING**

- A. General: Schedule and conduct meetings and conferences as directed by the Contracting Officer.
  - 1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Contracting Officer of scheduled meeting dates and times.
  - 2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.

3. Minutes: Contractor record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Contracting Officer, within 7 days of the meeting.
- B. Preconstruction Conference: Contracting Officer/Construction Manager shall schedule a preconstruction conference before the start of construction, at a time convenient to the Contracting Officer, but no later than 7 days before the Project start date or jobsite start date whichever is later. Conference will be held at the Project site or another convenient location. The Contracting Officer shall conduct the meeting to review responsibilities and personnel assignments.
1. Attendees: Contracting Officer, and design consultants; Facility Users; Contractor and its superintendent; major Subcontractors; manufacturers; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with the Project and authorized to conclude matters relating to the Work.
  2. Agenda: Discuss items of significance that could affect progress, including the following:
    - a. Tentative construction schedule.
    - b. Phasing.
    - c. Critical work sequencing and coordination.
    - d. Designation of responsible personnel.
    - e. Use of the premises.
    - f. Responsibility for temporary facilities and controls.
    - g. Parking availability.
    - h. Office, work, and storage areas.
    - i. Equipment deliveries and priorities.
    - j. First aid.
    - k. Security.
    - L. Progress cleaning.
    - m. Working hours.
- C. Progress Meetings: Conduct progress meetings at monthly or other intervals as determined by the Contracting Officer. Coordinate dates of meetings with preparation of payment requests.
1. Attendees: In addition to Contracting Officer/Construction Manager, each Contractor, Subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future



activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.

2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
  - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
  - b. Review present and future needs of each entity present, including the following:
    - 1) Outstanding Requests for information (clarification).
    - 2) Interface requirements.
    - 3) Sequence of operations.
    - 4) Status of outstanding submittals.
    - 5) Change Orders and Change Proposals.
    - 6) Documentation of information for payment requests.
  - c. Corrective Action Plan: Contractor shall provide a plan of corrective action for any item which is delayed or expected to be delayed, then that item impacts the contractual dates.
3. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present. Include a brief summary, in narrative form, of progress since the previous meeting and report.
  - a. Schedule Updating: Revise Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

## **PART 2 - PRODUCTS (Not Used)**

## **PART 3 - EXECUTION (Not Used)**

END OF SECTION

## **SECTION 01320 - CONSTRUCTION PROGRESS DOCUMENTATION**

### **PART 1 - GENERAL**

#### **1.01 SUMMARY**

- A. This Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
  - 1. Contractor's Construction Schedule.
  - 2. Payment Application.
- B. Related Sections include the following:
  - 1. SECTION 01310 - PROJECT MANAGEMENT AND COORDINATION for preparing a combined Contractor's Construction Schedule.
  - 3. SECTION 01330 - SUBMITTAL PROCEDURES for submitting schedules and reports.

#### **1.02 DEFINITIONS**

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
  - 1. Critical activities are activities on the critical path and control the total length of the project. They must start and finish on the planned early start and finish times.
  - 2. Predecessor activity is an activity that must be completed before a given activity can be started.
- B. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of project.
- C. Critical Path: The longest continuous chain of activities through the network schedule that establishes the minimum overall Project duration and contains no float.
- D. Event: The starting or ending point of an activity.
- E. Float: The measure of leeway in starting and completing an activity.
  - 1. Float time is not for the exclusive use or benefit of either the Department or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.
  - 2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the following activity.
  - 3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.

- F. Schedule of Prices: A statement furnished by Contractor allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Payment Applications.

### **1.03 SUBMITTALS**

- A. Required Submittals: Submit 8 sets of the list of the required submittals, by Specification Section, within 15 days after award of the contract or upon earlier written instructions from the Contracting Officer. *A general listing is provided under SECTION 01330 - SUBMITTAL PROCEDURES.*
  - 1. The listing shall indicate and include the following:
    - a. The number of copies required for submittal.
    - b. Planned submittal date.
    - c. Approval date required by the Contractor.
    - d. A space where the "date of submittal" can be inserted.
    - e. A space where the "date of approval" can be inserted.
    - f. A space where an "action code" can be inserted.
- B. Construction Schedule: Submit 7 sets of the Construction Schedule for review within 15 days after the award of the contract or upon earlier written instructions from the Contracting Officer.
- C. Schedule of Prices: Submit 3 sets of the Schedule of Prices integrated with the Construction Schedule for review within 15 days after the award of the contract or upon earlier written instructions from the Contracting Officer.
- D. Payment Application: Submit the payment application at earliest possible date and no sooner than the last day of the month after all payroll affidavits, updated submittal registers, and schedules have been submitted.

### **1.04 COORDINATION**

- A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate Contractors.
- B. Construction Schedule: Coordinate Contractor's Construction Schedule with the Schedule of Prices, Submittals Schedule, loaded monthly event activity, and other required schedules and reports.
  - 1. Secure time commitments for performing critical elements of the Work from parties involved.
  - 2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.
- C. Schedule of Prices: Coordinate preparation of the schedule with preparation of Contractor's Construction Schedule.
  - 1. Correlate line items in the Schedule of Prices with other required administrative forms and schedules, including the following:
    - a. The Department's Payment Application form and the Construction Progress Report continuation sheet for the event cost estimate per time period.
    - b. Submittals Schedule.

## **PART 2 – PRODUCTS**

### **2.02 CONTRACTOR'S CONSTRUCTION SCHEDULE - GANTT CHART METHOD**

- A. The construction schedule shall be in the form of a progress chart of suitable scale to indicate appropriately the percentage of work scheduled for completion by any given date during the period. The progress chart shall indicate the order in which the Contractor contemplates starting and completing the several salient features of the work (including acquiring materials, plant, and equipment).
- B. Upon completion of the Contracting Officer's review, the Contractor shall amend the schedule as necessary to reflect the comments. If necessary, the Contractor shall participate in a meeting with the Contracting Officer to discuss the proposed schedule and changes required. Submit the revised schedule for review within 7 calendar days after receipt of the comments.
- C. Use the reviewed schedule for planning, organizing and directing the work, for reporting progress, and for requesting payment for the work completed. Unless providing an update, do not make changes to the reviewed schedule without the Contracting Officer's approval.
- D. If, in the opinion of the Contracting Officer, the Contractor falls behind the approved schedule, the Contractor shall take steps necessary to improve progress, including those that may be required by the Contracting Officer, without additional cost to the State. The Contracting Officer may require the Contractor to increase the number of shifts, overtime operations, days of work, or amount of construction plant, and to submit for approval any supplemental schedule or schedules in chart form as the Contracting Officer deems necessary to demonstrate how the approved rate of progress will be regained.
- E. Update the construction schedule at monthly intervals or when directed by the Contracting Officer to revise the schedule. Reflect any changes occurring since the last update with each invoice for progress payment. Submit copies of the purchase orders and confirmation of the delivery dates as directed. The Contracting Officer's review of the updated schedule is to check that the updated schedule does not alter the construction performance period unless the period was revised through a change order or contract modification.
- F. At Contractor's option a PERT chart may be used.

**OR**

### **2.02 CONTRACTOR'S CONSTRUCTION SCHEDULE - PERT CHART CRITICAL PATH METHOD (CPM)**

- A. The construction schedule shall address the entire project, to the extent required by the Contract Documents, and shall show an expedient and practical execution of work. If requested by the Contracting Officer, the Contractor shall participate in a preliminary meeting to discuss the proposed schedule and requirements prior to submitting the schedule.
- B. The Construction Schedule shall indicate the following:

1. Elements of the Project in detail time scaled by month or by week, and a project summary.
  2. The order and interdependence of activities and the sequence in which the work is to be accomplished.
  3. How the start of a given activity is dependent upon the completion of preceding activities and how its completion restricts the start of following activities.
  4. The submittal and approval of shop drawings, samples, procurement of critical materials and equipment, receipt of materials with estimated costs of major items for which payment will be requested in advance of installation, fabrication of special materials and equipment, and their installation and testing.
  5. Activities of the State that have an effect on the progress schedule, such as the required delivery dates for State furnished materials and equipment and other similar items.
  6. Provide a separate report with the following:
    - a. The description of the activity.
    - b. The duration of time in calendar days.
    - c. For each activity indicate the early start date.
    - d. For each activity indicate the early finish date.
    - e. For each activity indicate the late start date.
    - f. For each activity indicate the late finish date.
    - g. Total float time.
    - h. Cost of event.
    - i. Contract-required dates for completion of all or parts of the Work.
    - j. Events are to be used on "Monthly Progress Report" for monthly payment request.
- C. Upon completion of the Contracting Officer's review, the Contractor shall amend the schedule to reflect the comments. If necessary, the Contractor shall participate in a meeting with the Contracting Officer to discuss the proposed schedule and changes required. Submit the revised schedule for review within 7 calendar days after receipt of the comments.
- D. Use the reviewed schedule for planning, organizing and directing the work, for reporting progress, and for requesting payment for the work completed. Unless providing an update, do not make changes to the reviewed schedule without the Contracting Officer's approval.
- E. Should changes to the schedule be desired, submit a request in writing to the Contracting Officer and indicate the reasons for the proposed change. If the changes are major, the Contracting Officer may require the Contractor to revise and resubmit the schedule at no additional cost to the State. Contractor shall mitigate the impact of all changes by readjusting the sequence of activities, duration of time, or resources utilizing available float.
1. A change is major if, in the opinion of the Contracting Officer, the change affects the substantial completion date or other contractual and milestone dates.

2. Minor changes are those that only affect activities with adequate float time.
- F. Once the schedule is reviewed by the Contracting Officer, the Contractor shall submit 6 sets of the revised schedule within 14 calendar days.
  - G. Throughout the duration of the project, the Contracting Officer may require more detailed breakdowns of activities, logic, and schedule submittals from the Contractor.
  - H. Updated Schedules: Submit at monthly intervals or as directed by the Contracting Officer. The schedule shall reflect all changes occurring since the last update including the following:
    1. Activities started and completed during the previous period.
    2. The estimated duration to complete each activity that was started but not completed.
    3. Percentage of cost payable for each activity.
    4. Modifications and pending proposed changes.
    5. Narrative report describing current and anticipated problem areas or delaying factors with their impact together with an explanation of corrective actions taken or proposed.
  - I. Failure on the part of the Contractor to submit updated schedules may be grounds for the Contracting Officer to withhold progress payments for items noted on the schedule.
  - J. Contractor shall prosecute the work according to the CPM Schedule. The Contracting Officer shall rely on the reviewed Contractor's CPM Schedule and regular updates for planning and coordination. The Contracting Officer's review of the Contractor's CPM Construction Schedule does not relieve the Contractor of its obligation to complete the work within the allotted contract time. Nor does the review grant, reject or in any other way act on the Contractor's request for adjustments to complete remaining contract work, or for claims of additional compensation. These requests shall be processed in accordance with other relevant provisions of the contract.
  - K. If the Contracting Officer issues a field order or change order or other directive that affects the sequence or duration of work activities noted on the construction progress schedule, the Contractor shall promptly update the schedule. To accomplish this update, add, delete or revise the work activities noted or change the logic in the schedule to show the Contractor's plan to incorporate the change into the flow of work. All change orders and time extension requests that affect the construction schedule shall be evaluated based on their impact on the approved Construction Schedule.
  - L. If the current work is behind schedule or projected to be behind schedule, such as negative float on a critical activity or inability to meet the Contract Completion Date, the Contracting Officer may require the Contractor, at the Contractor's cost, to take

remedial measures to get the project back on schedule. This may require increasing the work force, working overtime and weekends, air freighting materials, or other similar actions.

- M. If at any time the Contracting Officer determines that any critical activity has fallen behind the CPM schedule by 15 calendar days or more, the Contractor shall submit a remedial plan to recapture the lost scheduled time. Include a revised schedule. Furnish the remedial plan no later than 7 calendar days from Contracting Officer's notification.
- N. If an accelerated schedule is proposed, refer to GENERAL CONDITIONS Section 7.22 "CONSTRUCTION SCHEDULE".

### **2.03 SCHEDULE OF PRICES**

- A. Furnish a schedule of prices per Contracting Officer.
- B. Provide a breakdown of the Contract Sum in enough detail to facilitate developing and the continued evaluation of Payment Applications. Provide several line items for principal subcontract amounts, or for materials or equipment purchased or fabricated and stored, but not yet installed, where appropriate. Round amounts to nearest whole dollar; total shall equal the Contract Price.
- C. Each item in the Schedule of Prices and Payment Application shall be complete. Include total cost and proportionate share of general overhead and profit for each item.

### **2.04 PAYMENT APPLICATION**

- A. Use the Schedule of Prices as the Monthly Construction Progress Report. Each Payment Application shall be consistent with previous applications and payments. The Contracting Officer shall determine the appropriateness of each payment application item.
- B. Payment Application Times: The date for each progress payment is the last day of each month. The period covered by each Payment Application starts on the first day of the month or following the end of the preceding period and ends on the last day of the month.
- C. Updating: Update the schedule of prices listed in the Payment application when Change Orders or Contract Modifications result in a change in the Contract Price.
- D. Provide a separate line item for each part of the Work where Payment Application may include materials or equipment purchased or fabricated and stored, but not yet installed.
- E. Differentiate between items stored on-site and items stored off-site. Include evidence of insurance or bonded warehousing if required.
- F. Provide separate line items for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.

- G. Payment Application Forms: Contractor's Payment Application, including Certification of Work, and Progress Billing breakdown shall be submitted to the Engineer for approval. Furnish 7 copies.
- H. Application Preparation: Complete every entry on form. Execute by a person authorized to sign legal documents on behalf of the Contractor.
  - 1. Entries shall match data on the Schedule of Prices and Contractor's Construction Schedule. Use updated schedules if revisions were made. Include amounts of Change Orders and Contract Modifications issued before last day of construction period covered by application.
- I. No payment will be made until the following are submitted each month:
  - 1. Monthly Estimate, 7 copies.
  - 2. Monthly Progress Report, 7 copies.
  - 3. Statement of Contract Time, 7 copies.
  - 4. Updated Submittal Register, 1 copy.
  - 5. Updated Progress Schedule, 1 copy.
  - 6. All Daily Reports, 1 copy.
  - 7. All Payroll Affidavits for work done, 1 copy.
- J. Retainage: The Department will withhold retainage in compliance with the GENERAL CONDITIONS.
- K. Transmittal: Submit the signed original and 6 copies of each Payment Application for processing.

## **2.05 CONTRACTOR DAILY PROGRESS REPORTS**

- A. The General Contractor and all Subcontractors shall keep a daily report of report events.
- B. The form of the Contractor Daily Progress Report shall be as directed by the Contracting Officer.
- C. Submit copies of the previous week's reports on Monday morning at 10:00 a.m.
- D. Submit copies of the reports with the monthly payment request for the whole period since the last payment request submittal.
- E. Deliver the reports in hard copy, by e-mail, or web based construction management as directed by the Contracting Officer.

## **PART 3 - EXECUTION (Not Used)**

END OF SECTION



## **SECTION 01330 - SUBMITTAL PROCEDURES**

### **PART 1 - GENERAL**

#### **1.01 SUMMARY**

- A. Comply with the GENERAL CONDITIONS “Shop Drawings and Other Submittals” section and “Material Samples” section.
- B. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other miscellaneous submittals.

#### **1.02 SUBMITTAL PROCEDURES**

- A. Coordinate Work and Submittals: Contractor shall certify the submittals were reviewed and coordinated.
- B. Submittal Certification: Provide in MS Word when submitting electronically. Contracting Officer will provide an electronic copy of the Submittal Certification. Provide a reproduction (or stamp) of the “Submittal Certification” and furnish the required information with all submittals. Include the certification on:
  - 1. The title sheet of each shop drawing, or on
  - 2. The cover sheet of submittals in 8-1/2 inch x 11-inch format, or on
  - 3. One face of a cardstock tag (minimum size 3-inch x 6-inch) tied to each sample. On the sample tag, identify the sample to ensure sample can be matched to the tag if accidentally separated. The opposite face of the tag will be used by the Contracting Officer to receive, review, log stamp and include comments.
- C. Variances: The Contractor shall request approval for a variance. Clearly note any proposed deviations or variances from the Specifications, Drawings, and other Contract Documents on the submittal and also in a separately written letter accompanying the submittal.

D. Submittal Certification Form (stamp or digital)

CONTRACTOR'S NAME: \_\_\_\_\_  
PROJECT: \_\_\_\_\_  
DAGS JOB NO: \_\_\_\_\_

**As the General Contractor, we checked this submittal and we certify it is 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.**

SUBMITTAL NUMBER \_\_\_\_\_ DATE RECEIVED \_\_\_\_\_  
REVISION NUMBER \_\_\_\_\_ DATE RECEIVED \_\_\_\_\_  
SPECIFICATION SECTION NUMBER /PARAGRAPH NUMBER \_\_\_\_\_  
DRAWING NUMBER \_\_\_\_\_  
SUBCONTRACTOR'S NAME \_\_\_\_\_  
SUPPLIER'S NAME \_\_\_\_\_  
MANUFACTURER'S NAME \_\_\_\_\_

**NOTE: DEVIATIONS FROM THE CONTRACT DOCUMENTS ARE PROPOSED AS FOLLOWS  
(Indicate "NONE" if there are no deviations)**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  

CERTIFIED BY	_____
--------------	-------

Note: Form can be combined with Design Consultant's Review stamp. This is available from the Contracting Officer.

**PART 2 - PRODUCTS (Not Used)**

**PART 3 - EXECUTION**

**3.01 SUBMITTAL REGISTER AND TRANSMITTAL FORM**

- A. Contractor shall use submittal register and transmittal forms as directed by the Contracting Officer.
- B. The listing of required submittals within this Section is provided for the Contractor's convenience. Review the specification technical sections and prepare a comprehensive listing of required submittals. Furnish submittals to the Contracting Officer for review.
- C. Contractor shall separate each submittal item by listing all submittals in the following groups with the items in each group sequentially listed by the specification section they come from:
  - 1. Administrative
  - 2. Data
  - 3. Tests
  - 4. Closing

D. Contractor shall separate all different types of data as separate line items all with the column requirements.

E. Contractor shall send monthly updates and reconciled copies electronically to the Contracting Officer and the Design Consultant in MS Word or MS Excel or other format as accepted by the Contracting Officer.

Section No. - Title	Shop Drawings & Diagrams	Samples	Certificates (Material, Treatment, Applicator, etc.)	Product Data, Manufacturer's Technical Literature	MSDS Sheets	Calculations	Reports (Testing, Maintenance, Inspection, etc.)	Test Plan	O & M Manual	Equipment or Fixture Listing	Schedules (Project Installation)	Maintenance Service Contract	Field Posted As-Built Drawings	Others	Guaranty or Warranty	Manufacturer's Guaranty or Warranty (Greater than one year)
01310 - Project Management and Coordination																
01320 - Construction Progress Documentation																
01330 - Submittal Procedures			■											■		
Section No. - Title	Shop Drawings & Diagrams	Samples	Certificates (Material, Treatment, Applicator, etc.)	Product Data, Manufacturer's Technical Literature	MSDS Sheets	Calculations	Reports (Testing, Maintenance, Inspection, etc.)	Test Plan	O & M Manual	Equipment or Fixture Listing	Schedules (Project Installation)	Maintenance Service Contract	Field Posted As-Built Drawings	Others	Guaranty or Warranty	Manufacturer's Guaranty or Warranty (Greater than one year)
01500 - Temporary Facilities and Controls							■							■		

<b>01575 - Temporary Controls - Air Quality Requirements</b>			■		■											
<b>01700 - Execution Requirements</b>													■			
<b>01770 - Closeout Procedures</b>	■							■				■	■	■		

END OF SECTION

## **SECTION 01430 - ENVIRONMENTAL PROTECTION**

### **PART 1 - GENERAL**

#### **1.01 DESCRIPTION**

The Contractor shall comply with all the applicable federal, state, and local laws, regulation, and ordinances and the following requirements for pollution control in performing all construction activities.

#### **1.02 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 unusable debris and waste material shall be hauled away to an appropriated off-site dump area. During loading operations, debris and waste material 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 - 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.

##### **C. Noise:**

1. Noise shall be kept with acceptable levels at all times in conformance with the State Department of Health, Administrative Rules, Title 11, Chapter 43 - Community Noise Control for Oahu. The Contractor shall obtain and pay for the Community Noise Permit from the State Department of Health when the construction equipment of 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 Contracting Officer. Equipment exceeding allowable noise levels shall not be started-up prior to 7:00 a.m.

D. Erosion:

1. During interim grading operation, the grade shall be maintained so as to preclude any damage to adjoining property from water and eroding soil.
2. Temporary berms, cut-off ditches and other provisions which may be required because of the Contractor's method of operations shall be installed at no cost to the State.

E. Water Pollution: The Contractor shall take all necessary precautions to prevent the pollution of water resources from fuels, oils, bitumens, calcium chloride, herbicides, pesticides, chemicals, or other harmful materials.

F. Air Pollution: The Contractor shall not cause air pollution or mist, smoke, vapor, gas, odorous substance, particulate matter, or any combination thereof.

G. 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. Wastewater 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 unless otherwise permitted in the SPECIAL PROVISIONS.
4. Except for rinsing of the hopper and delivery chute, and for wheel washing where required, concrete trucks shall not be cleaned on the job-site.
5. Except in an emergency, such as a mechanical breakdown, all vehicle fueling and maintenance shall be done in designated area. A temporary berm shall be constructed around the area when runoff can cause a problem.

F. 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 Contracting Officer, 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 Contracting Officer may also suspend any operations which he feels are creating pollution problems although they may not be in violation of the above-mentioned requirements.

END OF SECTION 01430

## **SECTION 01500 - TEMPORARY FACILITIES AND CONTROLS**

### **PART 1 - GENERAL**

#### **1.01 SUMMARY**

- A. Requirements for temporary facilities and controls, including temporary utilities, support facilities, and security and protection facilities.
- B. Temporary utilities may include if the Contractor requires but are not limited to, the following:
  - 1. Sewers.
  - 2. Storm drainage.
  - 3. Water service and distribution.
  - 4. Sanitary facilities, including toilets, wash facilities, and drinking water facilities.
  - 5. Electric power service.
  - 6. Lighting.
  - 7. Telephone service.
- C. Support facilities include, but are not limited to, the following:
  - 1. Project signs.
  - 2. Trash, refuse disposal.
  - 3. Erosion controls and site drainage.
- D. Security and protection facilities and measures include, but are not limited to, the following:
  - 1. Environmental protection.
  - 2. Stormwater control.
  - 3. Tree and plant protection.
  - 4. Site enclosure fence.
  - 5. Barricades, warning signs, and lights.
  - 6. Pest control.
- E. Related Sections: Refer to Divisions 2 through 16 for other temporary requirements including ventilation, humidity requirements and products in those Sections.

#### **1.02 USE CHARGES**

- A. General: Cost or use charges for temporary facilities are not chargeable to the State and shall be included in the Contract Price. Allow other entities to use temporary services and facilities without cost, including, but not limited to, the following:
  - 1. Other Contractors with agreements with the State working within the contract limits.
  - 2. Occupants of Project.
  - 3. Testing agencies.
  - 4. Contracting Officer and personnel of authorities having jurisdiction.



### **1.03 SUBMITTALS**

- A. Temporary Utility Reports: Submit reports of tests, inspections, meter readings, and similar procedures performed on temporary utilities.
- B. Landfill Disposal Receipts: Submit copies of receipts issued by a landfill facility. Include receipts with Contractor Daily Progress Report

### **1.04 QUALITY ASSURANCE**

- A. Standards: Comply with UBC Chapter 33, "Site Work, Demolition and Construction", ANSI A10.6, NECA's "Temporary Electrical Facilities", and NFPA 241, "Construction, Alteration, and Demolition Operations".
  - 1. Trade Jurisdictions: Assigned responsibilities for installation and operation of temporary utilities are not intended to interfere with trade regulations and union jurisdictions.
  - 2. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70, "National Electrical Code".
    - a. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

### **1.05 PROJECT CONDITIONS**

- A. Temporary Utilities: At earliest feasible time, when acceptable to the Contracting Officer, change over from use of temporary service to use of permanent service.
  - 1. Temporary Use of Permanent Facilities: Installer of each permanent service shall assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Contracting Officer's acceptance, regardless of previously assigned responsibilities.
- B. Conditions of Use: The following conditions apply to use of temporary services and facilities by all parties engaged in the Work:
  - 1. Keep temporary services and facilities clean and neat.
  - 2. Relocate temporary services and facilities as required by progress of the Work.

### **1.06 PREPARATION AND PROTECTION**

- A. Protection of Property: Continually maintain adequate protection of the Work from damage and protect all property, including but not limited to buildings, grounds, vegetation, material, utility systems located at and adjoining the job site. Repair, replace or pay the expense to repair damages resulting from Contractor's fault or negligence.

## **PART 2 - PRODUCTS**

## **2.01 MATERIALS**

- A. General: Provide new materials. Undamaged, previously used materials in serviceable condition may be used if approved by Contracting Officer. Provide materials suitable for use intended.

## **2.02 EQUIPMENT**

- A. Self Contained Combination Toilet and Urinal Units: Single occupant units of chemical, aerated recirculation, or combustion type; vented; fully enclosed with a glass fiber reinforced polyester shell or similar nonabsorbent material. One quarter of, or at least one unit(s) shall contain a handwash sink with potable water storage.

## **PART 3 - EXECUTION**

### **3.01 INSTALLATION, GENERAL**

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.

### **3.02 TEMPORARY UTILITY INSTALLATION**

- A. General: Connect to existing service where directed by the Contracting Officer if required by the Contractor.
- B. Sanitary Facilities: Provide temporary toilets. Comply with regulations and health codes for type, number, location, operation, and maintenance of toilet.
  - 1. Disposable Supplies: Provide toilet tissue, paper towels, paper cups, and similar disposable materials for each facility. Maintain adequate supply. Provide covered waste containers for disposal of used material.
  - 2. Locate toilets and drinking water fixtures so personnel need not walk more than 2 stories vertically or 200-feet horizontally to facilities.

### **3.03 SUPPORT FACILITIES INSTALLATION**

- A. Traffic Controls: Provide temporary traffic controls at junction of temporary roads with public roads if required for Contractor vehicles that impede with the public. Include warning signs for public traffic and "STOP" signs for entrance onto public roads. Comply with requirements of authorities having jurisdiction.
- B. Site Drainage:
  - 1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining property nor endanger permanent Work or temporary facilities.
- C. Project Sign and Temporary Sign(s):
  - 1. Provide and install project identification sign and other signs as listed. Sign designs are attached to Part 3 of this Section:

- a. Project Sign
  - b. Pardon the Inconvenience Sign
  2. Install signs where directed by the Contracting Officer or where indicated to inform public and persons seeking entrance to the Project. Do not permit installation of unauthorized signs.
  3. Provide temporary signs to provide directional information to constructional personnel and visitors.
  4. Construct signs with durable materials, properly supported or mounted, and visible.
- D. Trash, Refuse Disposal:
1. Department of Health – Illegal Dumping Notice. See attachment to Part 3 of this section.
    - a. This Notice to be printed out on 8.5x11” paper.
    - b. This Notice to be posted at the job site field office and/or in locations visible to all contractors, subcontractors, suppliers, vendors, etc. throughout the duration of the project.
  2. Illegal Dumping of solid waste could subject the Contractor to fines and could lead to felony prosecution in accordance with Chapter 342H, HRS. For more information, see the following web site:  
<http://www.hawaii.gov/health/environmental/waste/sw/pdf/llldump.pdf>
  3. Provide waste collection containers in sizes adequate to handle waste from construction operations. Containerize and clearly label hazardous, dangerous, or unsanitary waste materials separately from other waste.
  4. Do not burn debris or waste materials on the project site.
  5. Do not bury debris or waste material on the project site unless specifically allowed elsewhere in these specifications as backfill material.
  6. Haul unusable debris and waste material to an appropriate off site dump area.
    - a. Water down debris and waste materials during loading operations or provide other measures to prevent dust or other airborne contaminants.
    - b. Vacuum, wet mop, or damp sweep when cleaning rubbish and fines which can become airborne from floors or other paved areas. Do not dry sweep.
    - c. Use enclosed chutes or containers to conveying debris from above the ground floor level.
  7. 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.

### **3.04 ENVIRONMENTAL CONTROLS**

- A. General: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
- B. Dust Control:
  1. 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. Contractor is responsible for and shall determine the method of dust control. Subject to the Contractor's choice, the use of water or environmentally friendly chemicals may be used over surfaces that create airborne dust.
3. Contractor is responsible for all damage claims due to their negligence to control dust.

C. Noise Control

1. Keep noise within acceptable levels at all times in conformance with the State Department of Health, Administrative Rules, Title 11, Chapter 46 Community Noise Control. Obtain and pay for the Community Noise Permit when construction equipment or other devices emit noise at levels exceeding the allowable limits.
2. Ensure mufflers and other devices are provided on equipment, internal combustion engines and compressors to reduce loud disruptive noise levels and maintain equipment to reduce noise to acceptable levels.
3. Unless specified elsewhere, do not start construction equipment that meet allowable noise limits prior to 6:45 A.M. or equipment exceeding allowable noise levels prior to 7:00 A.M.

D. Erosion Control

1. During grading operations, maintain the grade to prevent damage to adjoining property from water and eroding soil.
2. Install temporary berms, cut off ditches and other provisions needed for construction methods and operations. Should there be a question if the temporary measures are insufficient to prevent erosion, the Contracting Officer shall make the final determination.
3. Construct and maintain drainage outlets and silting basins where shown on the Drawings and when required to minimize erosion and pollution of waterways during construction.

E. Tree and Plant Protection (For Trees and Plants outside the Limits of Work): Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from construction damage. Protect existing landscaping and tree root systems from damage, flooding, and erosion due to construction activity.

F. Pest Control: Before demolition and excavation work begins, retain a local exterminator or pest control company to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests. Engage this pest control service to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Substantial Completion. Perform control operations lawfully, using environmentally safe materials.

### **3.05 VIOLATION OF ENVIRONMENTAL PROVISIONS**

A. Violations of any of the above environmental control requirements or any other pollution control requirements; which may also be specified in the other Specifications sections, shall be resolved under the SUSPENSION and CORRECTIVE WORK Section of the GENERAL CONDITIONS.

### **3.06 BARRICADES AND ENCLOSURES**

- A. Barricades: Before construction operations begin, erect temporary construction barricade(s) to prevent unauthorized persons from entering the project area and to the extent required by the Contracting Officer.
  - 1. Provide gates in sizes and at locations necessary to accommodate delivery vehicles and other construction operations.
  - 2. Maintain security by limiting number of keys and restricting distribution to authorized personnel. Provide Contracting Officer with 2 sets of keys.
  - 3. Maintain temporary construction barricade(s) throughout the duration of the Work. During the course of the project, the Contracting Officer may require additional barricades be provided for the safety of the public. Contractor shall erect the additional barricade(s) at its own expense.
  - 4. Construction barricade can be:
    - a. portable chain link
    - b. wood
    - c. Other, to meet noise, safety, dust, standards.
  
- B. Temporary Enclosures:
  - 1. Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities.

### **3.07 ATTACHMENTS**

- A. Project Sign Drawings.
  - 1. Standard Detail for Project Sign Layout - DETAIL A/TG 01500.
  - 2. Standard Detail for Project Sign Specifications - DETAIL B/TG 01500.
  - 3. Standard Detail for Project Sign Alternate Title Layouts - DETAIL C/TG 01500.
  - 4. Standard Detail for Project Sign Details - DETAIL D/TG 01500.
  
- B. Dust Control Fence Drawings: Standard Detail for Dust Control Fence - DETAILS E and F/TG 01500.
  
- C. Warning Sign: Requirements for Warning Sign.
  
- D. Department of Health – Illegal Dumping Notice

END OF SECTION



## 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.

## ART WORK

CONSTANT ELEMENTS OF THE SIGN LAYOUT – FRAME, OUTLINE, STRIPE, AND OFFICIAL STATE INFORMATION – MAY BE DUPLICATED FOLLOWING WORKING 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 AS SHOWN.

## TITLES

THE SPECIFIC MAJOR WORK OF THE PROJECT UNDER CONSTRUCTION IS EMPHASIZED BY USING 3 3/4" TYPE, ALL CAPITALS. SECONDARY INFORMATION SUCH AS LOCATIONS OR BUILDINGS USES 2 1/4" TYPE, ALL CAPITALS. OTHER RELATED INFORMATION OF LESSER IMPORTANCE USES 2 1/4" (CAPITAL HEIGHT) IN LOWER CASE LETTERS. ALL LINES OF TYPE SHOULD NOT EXCEED THE WIDTH OF THE 6'-2" STRIPE. DESIGN SHOULD FOLLOW THE MOST APPROPRIATE LAYOUT OF THE THREE EXAMPLES ON DETAILS A/TG 01500 AND C/TG 01500.

## MATERIALS

PANEL IS 3/4" EXTERIOR GRADE HIGH DENSITY OVERLAID PLYWOOD, WITH RESIN BONDED SURFACES ON BOTH SIDES.

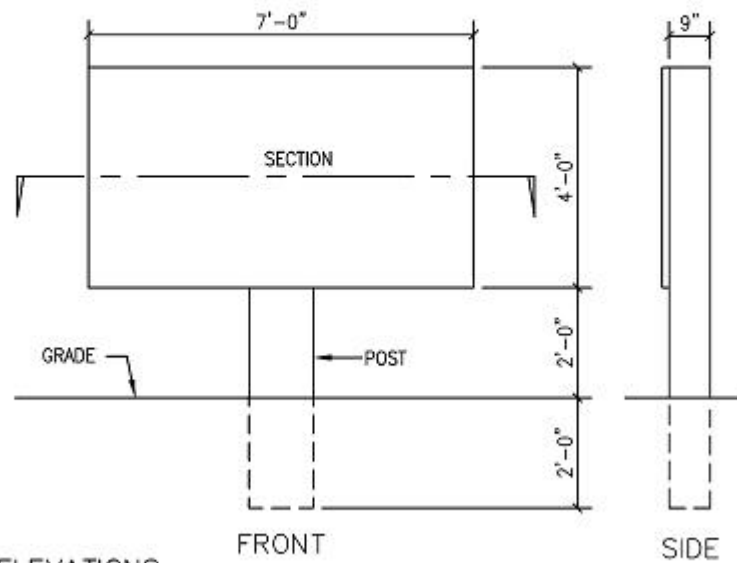
## PAINTS & INKS

SCREEN PRINT INKS ARE MATTE FINISH. PAINTS ARE SATIN FINISH, EXTERIOR GRADE. REFERENCES TO AMERITONE COLOR KEY PAINT ARE FOR COLOR MATCH ONLY.

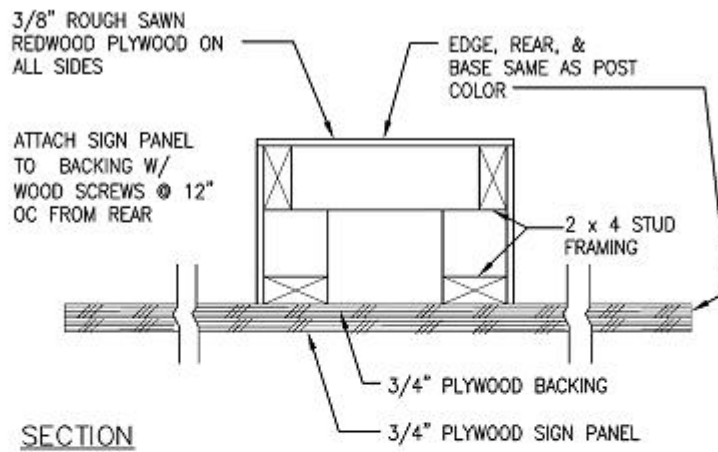
COLOR:	1.	1BL10A	BOHEMIAN BLUE
	2.	2H16P	SOFTLY (WHITE)
	3.	2VR2A	HOT TANGO (RED)
	4.	1M52E	TOKAY (GRAY)



## PROJECT SIGN SPECIFICATIONS



ELEVATIONS



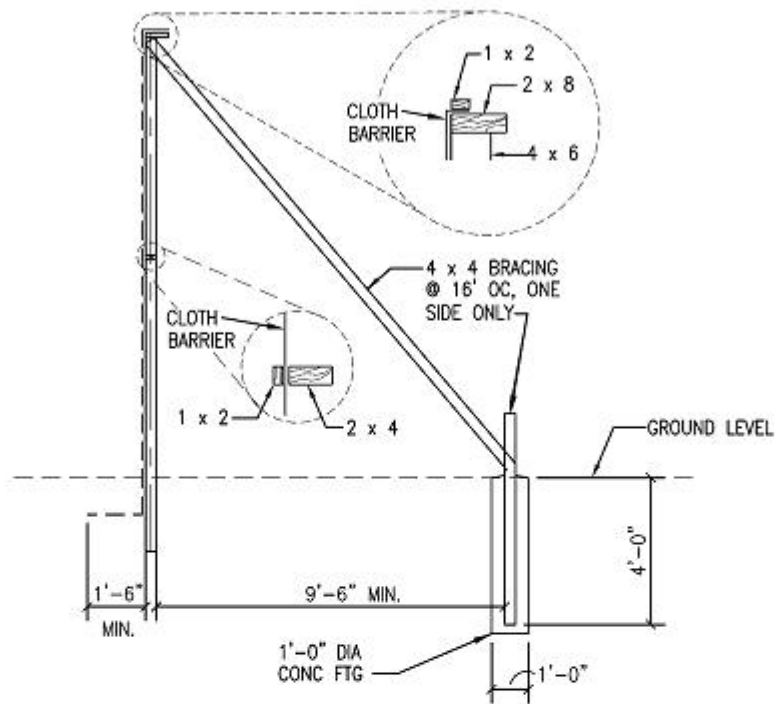
SECTION



PROJECT SIGN DETAILS

SCALE: NTS

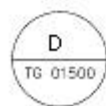




SECTION

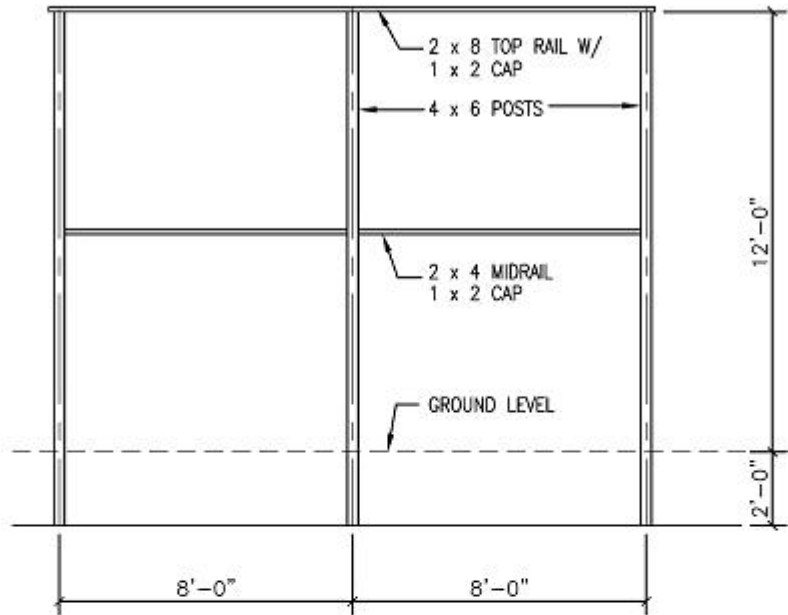
NOTES:

1. CLOTH BARRIER NOT SHOWN IN FRONT VIEW.
2. CLOTH BARRIER TO BE "GEOTEXTILE" OR "NURSERY SHADE".
3. LUMBER SIZES ARE NOMINAL INCHES.
4. AS SHOWN CLOTH TO BE BURIED AT BASE TO INDICATED DIMENSION.
5. 1 x 2 CLOTH BARRIER CAPS TO BE NAILED @ 12" OC.
6. BURLAP IS NOT ACCEPTABLE AS THE CLOTH BARRIER.
7. CLOTH TO HAVE NO HORIZONTAL SEAMS.
8. VERTICAL SEAMS TO BE MADE OVER UPRIGHTS ONLY.
9. ALL SEAMS TO BE CAPPED WITH MINIMUM 1 x 2.
10. ALL JOINTS TO BE SECURELY FASTENED BY MECHANICAL MEANS.



STANDARD DETAIL FOR  
DUST CONTROL FENCE

SCALE: NTS



ELEVATION

NOTES:

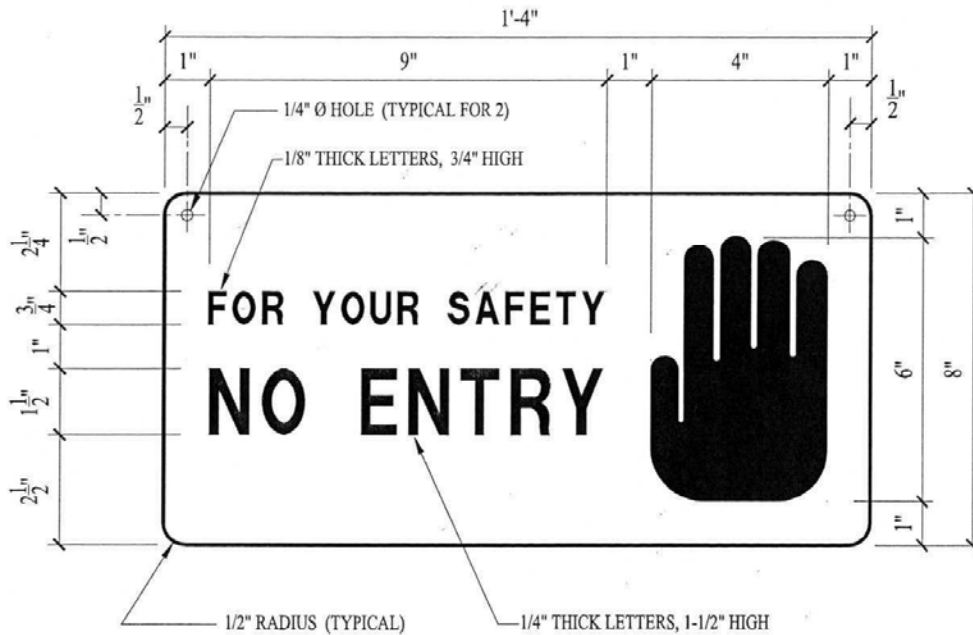
1. CLOTH BARRIER NOT SHOWN IN FRONT VIEW.
2. CLOTH BARRIER TO BE "GEOTEXTILE" OR "NURSERY SHADE".
3. LUMBER SIZES ARE NOMINAL INCHES.
4. AS SHOWN CLOTH TO BE BURIED AT BASE TO INDICATED DIMENSION.
5. 1 x 2 CLOTH BARRIER CAPS TO BE NAILED @ 12" OC.
6. BURLAP IS NOT ACCEPTABLE AS THE CLOTH BARRIER.
7. CLOTH TO HAVE NO HORIZONTAL SEAMS.
8. VERTICAL SEAMS TO BE MADE OVER UPRIGHTS ONLY.
9. ALL SEAMS TO BE CAPPED WITH MINIMUM 1 x 2.
10. ALL JOINTS TO BE SECURELY FASTENED BY MECHANICAL MEANS.



STANDARD DETAIL FOR  
DUST CONTROL FENCE

SCALE: NTS

**REQUIREMENTS FOR WARNING SIGN**



1. **General Requirements:** Furnish all labor, materials and equipments necessary to construct and install warning signs as specified hereinafter.
2. **Materials**
  - a. Backing: Backing shall be 6061-T6 aluminum 0.032-inch minimum thickness.
  - b. Paint: Paint shall be satin finish, exterior grade or factory baked enamel or a combination thereof.
3. **Colors:** Signs shall have white background. Remaining items shall be similar to Rust-Oleum Federal Safety Red.
4. **Requirements for Warning Sign:** Message configuration and dimensions shall be in accordance with the attached illustration.
5. **Installation**
  - a. Signs shall be located at 50-foot intervals around roped off work area or at all entrances in the case of interior work.
  - b. Signs shall be attached to the rope barrier, rope barrier supports, individual sign supports or buildings. Do not use nails to attach signs to building(s).
6. **Clean-up:** Remove all signs upon completion of project. Repair any damages caused by sign mounting and removal.

# **DEPARTMENT OF HEALTH ILLEGAL DUMPING NOTICE**

**The law requires you to dispose solid waste only at recycling or disposal facilities permitted by the Department of Health.**

**“Solid waste” includes municipal refuse, construction and demolition waste, household waste, tires, car batteries, derelict vehicles, green wastes, furniture, and appliances.**

**Illegal dumping of solid waste or allowing illegal disposal of solid waste on your property even if contractual or other arrangements are made could subject you to fines from \$10,000 to \$25,000 per occurrence and could lead to felony prosecution in accordance with Chapter 342H, HRS.**

**Contact the Department of Health, Solid Waste Section at 586-4226 to report illegal dumping activities or if you have further questions.**

## **SECTION 01524 - CONSTRUCTION WASTE MANAGEMENT**

### **PART 1 - GENERAL**

#### **1.01 SUMMARY**

- A. This Section includes information to assist the Contractor in pursuing the following optional activities:
  - 1. Salvaging nonhazardous demolition and construction waste.
  - 2. Recycling nonhazardous demolition and construction waste.

#### **1.02 DEFINITIONS**

- A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.
- C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.
- D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.
- E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.
- F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

#### **1.03 REFERENCES**

- A. *A Contractor's Waste Management Guide: Best Management Practices and Tools for Job Site Recycling and Waste Reduction in Hawaii*, 1999. Request a copy from the State of Hawaii, Clean Hawaii Center (808) 587-3802 or download from [www.hawaii.gov/dbedt/ert/cwmg/index.html](http://www.hawaii.gov/dbedt/ert/cwmg/index.html).
- B. *Minimizing Construction & Demolition Waste*. State of Hawaii, Department of Health guidance on construction and demolition (C&D) waste management and listing of permitted C&D waste management facilities. Download from [www.state.hi.us/health/eh/shwb/sw](http://www.state.hi.us/health/eh/shwb/sw).
- C. *Final Hazardous and Recyclable Materials Survey Report HIARNG CSMS-1 Building 304 Complex and CERFP Building 301 TMK Number: (1) 3-1-042:006 (Por.)*, AECOM, September 2015.

### **PART 2 - PRODUCTS (Not Used)**

## **PART 3 - EXECUTION**

### **3.01 RECYCLING DEMOLITION AND CONSTRUCTION WASTE, GENERAL**

- A. Recycling waste materials shall be at the Contractor's option.
- B. The *Recyclable Materials Survey Report* (Reference C) describes the type and amount of recyclable building materials present onsite, and provides options for recycling, and a preliminary rough-order-of-magnitude cost (revenue) estimate. The Contractor shall not rely on the revenue estimations, which are provided for their information only, with no warrantee made. The Contractor shall investigate vendors and options and decide for himself whether to recycle any material present, prior to relying to any anticipated revenue in developing his bid. Any market fluctuations will be at the Contractor's sole risk.

### **3.02 DISPOSAL OF WASTE**

- A. Properly remove all building hazardous materials, and obtain clearance prior to beginning general demolition, recycling, disposal, or salvage activities.
- B. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator currently permitted to authorities having jurisdiction.
  - 1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
  - 2. Remove and transport debris in a manner that will prevent spillage.
- C. Burning: Do not burn waste materials.
- D. Disposal: Transport waste materials off Owner's property and legally dispose of them at a permitted landfill.

END OF SECTION

## **SECTION 01700 - EXECUTION REQUIREMENTS**

### **PART 1 - GENERAL**

#### **1.01 SUMMARY**

- A. This Section includes general procedural requirements governing execution of the Work including the following:
  - 1. Construction layout. Field engineering and surveying.
- B. Related Sections
  - 1. SECTION 01770 - CLOSEOUT PROCEDURES.

#### **1.02 SUBMITTALS**

- A. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.

#### **1.03 NOTIFICATION**

- A. Contact the Contracting Officer and the Project Contact Person at least 3 working days prior to starting any onsite work.

#### **1.04 PROJECT AND SITE CONDITIONS**

- A. Project Contract Limits (Contract Zone Limits) indicate only in general the limits of the work involved. Perform necessary and incidental work, which may fall outside of these demarcation lines. Confine construction activities within the Project Contract Limits and do not spread equipment and materials indiscriminately about the area.
- B. Disruption of Utility Services: There should be no disruption of service to any other building.

#### **1.05 QUALITY ASSURANCE**

- A. Land Surveyor Qualifications: A professional land surveyor with a license to practice in Hawaii.
- B. Professional Engineer Qualifications: A professional engineer with a license to practice in Hawaii.

### **PART 2 - PRODUCTS (Not Used)**

### **PART 3 - EXECUTION**

#### **3.01 EXAMINING THE SITE**

- A. Contractor and Subcontractors are expected to visit the site and make due allowances for difficulties and contingencies to be encountered. Compare contract documents with work in place. Become familiar, with existing conditions, the conditions to be encountered in performing the Work, and the requirements of the drawings and specifications.

- B. Verify construction lines, grades, dimensions and elevations indicated on the drawings before any clearing, excavation or construction begins. Bring any discrepancy to the attention of the Contracting Officer, and make any change in accordance with the Contracting Officer instruction.
- C. Obtain all field measurements required for the accurate fabrication and installation of the Work included in this Contract. Verify governing dimensions and examine adjoining work on which the Contractor or Subcontractor's work is in any way dependent. Submit differences discovered during the verification work to the Contracting Officer for interpretations before proceeding with the associated work. Exact measurements are the Contractor's responsibility.
- D. Furnish or obtain templates, patterns, and setting instructions as required for the installation of all Work. Verify dimensions in the field.
- E. Contractor shall accept the site and the existing building in the condition that exists at the time access is granted to begin the Work. Verify existing conditions and dimensions shown and other dimensions not indicated but necessary to accomplish the Work.
- F. Locate all general reference points and take action to prevent their destruction. Lay out work and be responsible for lines, elevations and measurements and the work executed. Exercise precautions to verify figures and conditions shown on drawings before layout of work.

### **3.02 SITE UTILITIES AND TONING**

- A. Cooperate, coordinate and schedule work to maintain construction progress, and accommodate the operations and work of the owners of underground or overhead utility lines or other property in removing or altering the lines or providing new services.
- B. Contact all the various utility companies before the start of the work to ascertain any existing utilities and to develop a full understanding of the utility requirements with respect to this Project. Furnish the Contracting Officer with evidence that the utility companies were contacted.
- C. Should the Contractor discover the existence and location of utilities in the contract drawings are not correct, do not disturb the utilities and immediately notify the Contracting Officer.
- D. Do not disturb or modify any utilities encountered, whether shown or not on the Contract Drawings, unless otherwise instructed in the drawings and specifications or as directed by the Contracting Officer. Repair and restore to pre-damaged condition any utilities or any other property damaged by construction activities that are not in the scope of work to be cut and plugged.
- E. Transfer to "Field Posted As-Built" drawings the location(s) and depth(s) of existing utilities that differ from the Contract Drawings. Locate by azimuth and distance and depth(s) from fixed referenced points.



- F. Toning: Prior to the start of grading, or excavation or trenching work verify and confirm the presence, location and depth of existing underground utility lines in the area affected by the project, by “toning” or by other appropriate means acceptable to the Contracting Officer. The intent of this advanced toning is to afford the Contracting Officer an opportunity to identify utility lines that may or may not be shown on the drawings and issue a directive to address the existing conditions.
  - 1. Perform toning using instruments specifically developed and designed for the detection of underground pipes and cable utilities.
  - 2. Notify the Contracting Officer 48 hours in advance before toning operations. Provide information on the proposed toning method and other pertinent information.
- G. Recording Toning Information: Upon completion of the toning operation, submit drawings that show the location and approximate depth of the existing and newly discovered utility lines. Identify the type of utility lines. Also, identify where utility lines indicated on the drawings are not shown in their approximate location or where new utility lines are found or pointed out in the field.
- H. After ascertaining the exact location and depth of utilities within the project area, mark and protect the locations.
  - 1. Acquaint personnel working near utilities with the type, size, location, depth of the utilities, and the consequences that might result from disturbances.
  - 2. Do not start trenching or start similar operations until reasonable and appropriate precautions to protect the utilities are taken.
- I. For newly identified utility lines, if directed by the Contracting Officer, manually excavate within 2-feet of the utility line to avoid damage. Under this directive, manual excavation is considered additional work.
- J. Existing Irrigation Systems: Where work is located in areas with existing irrigation systems, Contractor shall test the existing systems and document all deficiencies prior to any work that may damage the existing systems.

### **3.03 FIELD MEASUREMENTS**

- A. Take field measurements to fit and install the Work properly. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress.
- B. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- C. Review of Contract Documents and Field Conditions: Submit a Request For Information (RFI) immediately upon discovery of the need for clarification of the Contract Documents. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents.

### **3.04 CONSTRUCTION LAYOUT**

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to <the property survey and existing benchmarks> <existing conditions>. If discrepancies are discovered, notify the Contracting Officer promptly.
- B. General: Engage a licensed land surveyor to lay out the Work using accepted surveying practices.
  - 1. Establish benchmarks, control points, lines and levels at each story or level of construction and elsewhere as needed to locate each element of Project.
  - 2. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
  - 3. Inform installers of lines and levels to which they must comply.
  - 4. Check the location, level and plumb, of every major element as the Work progresses.
  - 5. Notify the Contracting Officer when deviations from required lines and levels exceed allowable tolerances.
  - 6. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.
- C. Site Work: Locate and lay out the utilities, outline of structures to be demolished, locate any ponding areas.
- D. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by the Contracting Officer.

### **3.05 FIELD ENGINEERING**

- A. Reference Points: Locate existing permanent or temporary benchmarks, control points and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
  - 1. Provide three permanent benchmarks for future use.

### **3.06 CLEANING**

- A. General: Clean the Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.
  - 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
  - 2. Do not hold waste more than 7 days unless approved otherwise by the Contracting Officer.

3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
- B. Site: Maintain Project site free of waste materials and debris.
  - C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
    1. Remove liquid spills promptly.
    2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
  - D. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.

END OF SECTION

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

**PART 1 - GENERAL**

**1.01 SUMMARY**

- A. This section includes the results of the State's surveys for Asbestos, Lead, and Other Hazardous Regulated Materials and is provided for the Contractor's information. The Contractor is responsible for reviewing the surveying report and field-verifying all information and quantities before submitting a bid.
- B. Related Sections include the following:
  - 1. SECTION 13200 - ABOVE GROUND STORAGE TANK REMOVAL for requirements of all work involving the demolition of the oil-water separator. Also, refer to the drawings.
  - 2. SECTION 13281 - ASBESTOS ABATEMENT for requirements of all work which disturbs ACM. Also, refer to the drawings.
  - 3. SECTION 13282 - LEAD-CONTAINING PAINT CONTROL MEASURES for requirements of all work which disturbs LCP. Also, refer to the drawings.
  - 4. SECTION 13283 - OTHER HAZARDOUS REGULATED MATERIALS for requirements of all work which disturbs PCB, mercury and ozone depleting substances. Also, refer to the drawings.
  - 5. SECTION 13288 - TESTING AND AIR MONITORING for requirements of all work which disturbs ACM. Also, refer to the drawings.
  - 6. HIARNG Environmental Contractor Requirements

**1.02 ASBESTOS**

- A. The structure or structures to be demolished under this contract were surveyed for the presence of asbestos containing building materials (ACBM), using AHERA requirements. A copy of the initial survey report, as well as any subsequent supplemental survey report(s), if performed, are included in this Section.
  - 1. If suspect ACBM that has not been sampled is found, notify the Engineer immediately.
  - 2. Contractor shall review the attached report(s) for the basis on which the negative ACBM finding was made for particular materials..
  - 3. If there is ACBM outside of the area in which work will be performed, this ACBM shall not be disturbed in any way.
- B. If applicable, notify employees, subcontractors and all other persons engaged on the project of the presence of asbestos in 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 building or buildings on the site other than the one(s) designated within this project scope, request copies of the asbestos survey report(s) for such building(s) from the DOD/Engineer. Based on the information contained in the additional survey(s), notify affected personnel per paragraph 1.02.

### **1.03 PAINT WITH LEAD**

- A. Inform employees, subcontractors and all other persons engaged in the project that paint with lead, including both lead-based paint (LBP) and lead containing paints (LCP) is present in the existing building and at the job site. Follow the requirements of Title 12 (Department of Labor and Industrial Relations), Subtitle 8 (Division of Occupational Safety and Health), Chapter 148 (Lead Exposure in Construction), Hawaii Administrative Rules, and all other applicable laws, regulations, and other requirements.
- B. Review the attached lead testing data materials confirmed to contain lead. Lead testing was for design purposes only, and the results do not satisfy any of the requirements of Chapter 12-148. All untested paints encountered shall be assumed LBP.

### **1.04 POLYCHLORINATED BIPHENYLS (PCBs), MERCURY, OZONE DEPLETING SUBSTANCES (ODSs), CHLORDANE**

- A. Inform employees, Subcontractors, and all other persons engaged in this project that PCBs, mercury, and ODSs are present in various building components at the project site. Inform employees, Subcontractors, and all other persons engaged in this project that chlordane and lead has been detected in the surface soil surrounding the buildings.

## **PART 2 - PRODUCTS (Not Used)**

## **PART 3 - EXECUTION**

### **3.01 HAZMAT REPORT (Attached)**

- A. Hazardous and Recyclable Materials Survey Report, HIARNG CSMS-1 Building 304 Complex and CERFP Building 301, TMK Number (1) 3-1-042:006 (Por.), Fort Ruger, Honolulu, Hawaii, 540 pages, dated September 2015, prepared by AECOM Technical Services. This report also provides information that may be useful for recycling construction waste or otherwise diverting it from the landfill.

### **3.02 HIARNG ENVIRONMENTAL CONTRACTOR REQUIREMENTS**

- A. Sample Emergency Contacts Sign
- B. Hazardous Material Inventory Log Form
- C. Monthly Waste Generation Report Form
- D. HIARNG Spill Incident Form
- E. Waste Collection Log

END OF SECTION



**FINAL HAZARDOUS AND RECYCLABLE  
MATERIALS SURVEY REPORT  
HIARNG CSMS-1 BUILDING 304 COMPLEX  
AND CERFP BUILDING 301  
TMK NUMBER: (1) 3-1-042:006 (POR.)  
FORT RUGER, HONOLULU, HAWAII**

**Prepared for:**

**State of Hawaii  
Department of Defense  
3949 Diamond Head Road  
Honolulu, Hawaii, 96816**

September 2015



**FINAL HAZARDOUS AND RECYCLABLE  
MATERIALS SURVEY REPORT  
HIARNG CSMS-1 BUILDING 304 COMPLEX  
AND CERFP BUILDING 301  
TMK NUMBER: (1) 3-1-042:006 (POR.)  
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**Prepared for:**

**State of Hawaii**  
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September 2015





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- B Summary of Sampling
- C Laboratory Results
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## ACRONYMS AND ABBREVIATIONS

%	percent
ACM	asbestos-containing material
AECOM	AECOM Technical Services, Inc.
C&D	construction and demolition
CERFP	Chemical, Biological, Radiological, Nuclear and Explosive Enhanced Response Force Package
CFR	Code of Federal Regulations
COC	chain-of-custody
CSMS-1	Combined Support Maintenance Shop Number 1
DLNR	Department of Land and Natural Resources
DRO	diesel range organics
DU	decision unit
EAL	Environmental Action Level
EPA	Environmental Protection Agency, United States
ft	foot/feet
ft <sup>2</sup>	square foot/feet
g	gram
GRO	gasoline range organics
HAR	Hawaii Administrative Rules
HDOD	Department of Defense, State of Hawaii
HDOH	Department of Health, State of Hawaii
HIARNG	Hawaii Army National Guard
HID	high intensity discharge
HVAC	heating, ventilation, and air conditioning
LBP	lead-based paint
LCP	lead-containing paint
lb	pound
lf	linear foot
MDL	method detection limit
m	meter
mg/kg	milligram per kilogram
NVL	NVL Labs
ODS	ozone depleting substance
PAH	polynuclear aromatic hydrocarbon
PCB	polychlorinated biphenyl
RCRA-7	seven Resource Conservation and Recovery Act
RL	reportable limit
RRO	residual range organics
TCLP	Toxicity Characteristic Leaching Procedure
TMK	Tax Map Key
TPH	total petroleum hydrocarbons
TSI	thermal surface insulation
U.S.	United States
UIC	underground injection control
VOC	volatile organic compound



## 1.0 INTRODUCTION

The State of Hawaii, Department of Defense (HDOD) retained AECOM Technical Services, Inc. (AECOM) to conduct a hazardous building materials survey, recyclable materials survey, and limited surface soil and oil-water separator sampling at the Hawaii Army National Guard (HIARNG), Building 301 Chemical, Biological, Radiological, Nuclear and Explosive Enhanced Response Force Package (CERFP) and Building 304 Combined Support Maintenance Shop Number 1 (CSMS-1) complex at Fort Ruger in Diamond Head Crater, Honolulu, Oahu, Hawaii (the "property") (Figure 1).

### 1.1 PROPERTY DESCRIPTION

The CERFP Building 301 and CSMS-1 Building 304 complex are located on a portion of a 303 acre parcel identified by Tax Map Key (TMK) (1) 3-1-042: Parcel 006 (Figure 1, Photograph 1). The parcel encompasses the majority of Diamond Head, extending from the south and west rim of the crater to the eastern and northern exterior slopes and Diamond Head Road to the north. The parcel is owned by the State of Hawaii and carries restricted preservation (P-1) and general preservation (P-2) zoning designations, which generally exclude residential development (CCH 2015). The entire parcel is on the ocean side, or makai, of the State of Hawaii, Department of Health (HDOH) established underground injection control line (UIC), indicating that the aquifer underlying the parcel is not considered a potential drinking water resource.

HDOD's plans for the property include returning the site to pre-construction condition, and transferring the property to the Department of Land and Natural Resources (DLNR), which may construct trails, comfort stations, and a visitor's center for the park.

The CERFP Building 301 covers approximately 15,041 square feet (ft<sup>2</sup>) (0.35 acres) on the north end of the crater floor. The T-shaped building is oriented in a roughly northwest-southeast direction, with an open hall on its northwest wing, currently used for storage of equipment and a series of office and storage rooms on its southeast end. Front entry and parking for the building is from the southeast (Figure 2, Photograph 2).

The area along the northeast side of the building is paved with asphalt and serves as a staging area for CERFP vehicles. The northwest, southwest, and southeast sides of the building are surrounded by an open grassy area. Beyond the grassy area, to the southeast, is a parking lot. The CERFP Building 301 site covers approximately 3.13 acres (136,200 ft<sup>2</sup>) and is defined by a fence along its southwest and northwest borders and a parking lot to the southeast (Figure 2). There is no fence present on the northeast side of the site, and its border is defined by the termination of the landscaped grassy area. The CSMS-1 Building 304 Complex is located adjacent to the CERFP, to the southwest and downgradient.

Building 304 covers approximately 12,818 ft<sup>2</sup> and is also a T-shaped building oriented in a roughly northwest-southeast direction (Photograph 3). Unlike Building 301, Building 304 is no longer in use. The northwest wing of the building contains heavy equipment maintenance bays and two large paint booths. The southeast wing of the building was used primarily for office space. Main entry to the building is from the southeast. Other structures at the complex include a lunch shelter (Building 304F, Photograph 4); a single story, approximately 1,550 ft<sup>2</sup> Carpenter Shop (Building 304D), located in the western corner of the complex (Photograph 5); an oil-water separator on the northwest end of Building 304 (Building 304B, Photograph 6); a Canvas Repair Shop (Building 304A) and Battery Shop (Building 304E) on the north end of the complex (Photograph 7); a shipping container with a modified roof on the northeast end (Photograph 8); and a vehicle shelter (Building 304G), located on the north side of the complex (Photograph 9). The CSMS-1 complex is fenced and covers approximately 2.32 acres (101,200 ft<sup>2</sup>) (Figure 16).

Most of the property is paved with concrete and asphalt. However, the pavement does not extend to the fence line of the complex, and strips of open, grass-covered ground surround it on all sides.



Downgradient of the site, approximately 145 feet (ft) to the southwest, is the DLNR Diamond Head Crater trail visitor's center and trailhead.

## 1.2 SCOPE OF WORK

AECOM has accomplished the following scope of work:

- Conducted a hazardous materials survey of the buildings identified above, including visually identifying and quantifying potentially hazardous building materials, such as asbestos-containing material (ACM), and lead-based paint (LBP). The buildings were also visually inspected for polychlorinated biphenyls (PCBs), mercury, radioactive materials, and ozone depleting substances (ODSs); however, none of these items were sampled or analyzed.
- Sampled and analyzed suspect ACM and paint samples for asbestos and lead content.
- Conducted a recyclable materials survey of the buildings identified above, visually identifying and quantifying recyclable materials, such as steel, aluminum, copper, concrete, and asphalt.
- Researched recycling options for the material identified.
- Collected surface soil samples using incremental sampling methodology from unpaved areas surrounding CERFP Building 301, the CSMS-1 Building 304, and the CSMS-1 Carpenter Shop. The samples were analyzed for total lead content and chlordane.
- Collected samples of water and sediment (sludge) from the oil-water interceptor system located at the CSMS-1 Building 304 complex. The samples were analyzed for volatile organic compounds (VOCs), total petroleum hydrocarbons (TPH)–gasoline range organics (GRO), TPH–diesel range organics (DRO), TPH–residual range organics (RRO), polynuclear aromatic hydrocarbons (PAHs), seven Resource Conservation and Recovery Act ("RCRA-7") total metals (arsenic, barium, cadmium, chromium, lead, selenium, and silver), and mercury.
- Prepared this report summarizing the findings of the survey and analyses.

Figure 1 through Figure 39 provide diagrams of the property location, building floor plans, and the sampling locations within and around the buildings. Hand-drawn design drawings of the CERFP Building 301, dated April 7, 1961, and of the CSMS-1 Building 304 complex, dated April 8, 1963, were provided by the HDOD. Dimensions shown in the figures are based upon those provided by these as-built drawings; AECOM makes no representations to the accuracy of the dimensions and quantities taken from the hand-drawn building plans.

## 1.3 BUILDINGS AND SITE DESCRIPTION

### 1.3.1 CERFP Building 301

According to building plans provided by the HDOD, the CERFP Building 301 was originally known as the One-Unit Armory, built for the Hawaii National Guard in the early 1960s. The structure is primarily constructed of steel-reinforced hollow tile and concrete walls on a concrete slab on grade. The T-shaped, single-story structure is oriented in a northwest to southeast direction, with its main entrance along the southeast side. The building is fronted by approximately 60 ft of grass to the southeast, beyond which is an asphalt parking lot. Offices, restrooms, lockers, storage rooms, and a vault occupy the approximately 8,850 ft<sup>2</sup> southeast end of the building, while the northeast end is a large hall, approximately 6,220 ft<sup>2</sup> in size that was being used for equipment and supply storage at the time of the survey. Building materials within the southeast portion of the building include hollow tile and concrete exterior and interior walls, exposed wood ceilings, ceramic tile in the bathrooms, acid-stained concrete floors in the hallways, 9"x9" vinyl floor tile and 12"x12" vinyl floor tile in the office spaces, drywall partition walls, aluminum framed windows, and 12"x12" acoustic ceiling tiles

over furring in select office spaces. Building materials in the hall space include hollow tile and concrete exterior walls with exposed steel I-beam support columns, an acid-stained concrete floor, plywood partition walls for the segregation of three interior rooms, a steel rolling door and cementitious wood fiber ceiling tiles. The building features an asphalt roll roofing system, applied directly to timber sheathing on the southeast end and directly onto the cementitious wood fiber ceiling tiles over the hall on the northwest end.

Topographically, the CERFP is situated at the foot of the Diamond Head Crater's north rim, resulting in a noticeable gradient from north to south. Building 301 is situated upon an escarpment, with fall-offs to the northwest and south. A swale runs the length of the escarpment along the base, terminating in a storm drain approximately 20 ft to the south of the building. No other permanent structures were observed at the CERFP at the time of the survey. However, a 20-ft shipping container with unknown contents was observed in the parking lot to the south of Building 301. Because this structure is considered by AECOM to be movable and temporary, it was excluded from the survey. Approximately 7,500 ft<sup>2</sup> on the northwest side of Building 301 is paved with asphalt. This rectangular area is being used as a staging area for CERFP equipment and vehicles. An asphalt access path leads from the staging area to the parking lot on the southeast side of the site.

At the time of the survey, the CERFP was still occupied and in use by HIARNG.

### 1.3.2 CSMS-1 Building 304 Complex

According to hand-drawn building plans provided by the Department of Defense (DAGS 1963), the CSMS-1, originally known as the Combined Field Maintenance Shop, was constructed in the early 1960s, after construction of the CERFP Building 301. The CSMS-1 complex site is mostly paved, with a combination of asphalt and concrete over the approximately 1.30 acres surrounding Building 304. The topography of the site is virtually flat, though crowned to allow for storm water to run off the edges of the pavement. At the time of the survey, permanent structures at the complex included the approximately 24,760-ft<sup>2</sup> Building 304, an approximately 1,550-ft<sup>2</sup> Carpenter Shop (Building 304D), an approximately 440-ft<sup>2</sup> Canvas Repair Shop (Building 304A) and Battery Shop (Building 304E), a 40-ft. shipping container with a modified roof, a grease rack (Building 304B), and two metal shelters (lunch shelter [Building 304F] and carport [Building 304G]).

Building 304, similar to Building 301, is an upside-down T-shaped building oriented in a northwest to southeast direction. Main entry into the building is through the 8,130-ft<sup>2</sup> southeast wing. This wing is occupied by a series of maintenance bays, office spaces, a locker room, a kitchen, and a welding shop. Building materials observed include steel-reinforced hollow tile and concrete walls, acid-stained concrete floors, drywall partition walls, aluminum framed windows, metal roll-up doors, 12"x12" acoustic ceiling tile on asbestos panels, 9"x9" vinyl floor tile, and ceramic tile in the restrooms and kitchen. The 16,630-ft<sup>2</sup> northeast wing is a large warehouse-like structure, with work bays, two paint boots, parts storage and supply room, and an office. Building materials in this wing include steel-reinforced concrete walls, metal siding interior partition walls and exterior walls supported by steel I-beams, concrete flooring, metal roll-up doors, aluminum-framed windows, drywall partition walls, 2-ft x 4-ft acoustic ceiling tiles, carpet tiles, and aluminum frame laminate partitioning walls. The building features a metal siding roof with a polymer membrane coating.

The Carpenter Shop (Building 304D), located in the west corner of the complex, is constructed of metal siding on steel frame supports with a built-up mineral surface polymer coating over foam insulation. The Canvas Repair Shop (Building 304A) is constructed of metal side on steel frame supports and features a painted metal roof. Finally, the modified roof of the 40-ft shipping container was composed of a polymer membrane on a plywood sheath.

Beyond the paved grounds of the complex, grassy areas extend to the fence line, generally 8-ft-wide on the northwest and northeast sides, and approximately 20-ft-wide on the southwest side. The southeast wing of the building is fronted by approximately 15 ft of grassy landscaped area and a

parking lot. Past the fence line to the southwest is the DLNR Diamond Head Crater trailhead and visitors center.

At the time of the survey, the CSMS-1 complex was no longer in use by HIARNG.

## **2.0 REVIEW OF PREVIOUS REPORTS**

No previous environmental reports were provided to AECOM. Hard copies of hand-drawn design drawings for the CERFP Building 301, dated 1961 (DAGS 1961), and for the CSMS-1 Building 304 complex (DAGS 1963) were made available to AECOM by the client. Sampling diagrams in this report, and all dimensions and related quantities, are based upon these design drawings.

## **3.0 HAZARDOUS MATERIALS SURVEY**

### **3.1 AREAS NOT EVALUATED**

The following areas were not evaluated at the time of the survey:

- No mechanical equipment was dismantled for sampling purposes and only suspect materials that were readily accessible (exterior housings, mastics, and vacuum hoses) were sampled.
- Electrical and other utility components and conduits, as well as other structures or site features not described in this report, were not surveyed.
- The northwest wall of the CERFP Building 301 was inaccessible and not sampled at the time of the survey as a result of equipment storage.
- A 20-ft shipping container located in the parking lot to the south of CERFP Building 301 was not included in the survey.
- The flammable storage locker and metal cabinets on the northwest end of the CSMS-1 Building 304 complex were not included in the survey.

Additional limitations of the survey are discussed in Section 8.0.

### **3.2 ASBESTOS SURVEY**

This asbestos survey was conducted in accordance with United States (U.S.) Environmental Protection Agency (EPA) guidance (40 Code of Federal Regulations [CFR] Part 763), and State of Hawaii, Hawaii Administrative Rules (HAR) guidelines (11 HAR Chapter 501 [DOH 2001]), in anticipation of the complete demolition of the indicated buildings. ACM is defined by the EPA and HDOH as any material or product that contains more than 1 percent (%) asbestos (40 CFR Part 763; Title 11 HAR Chapter 501). The EPA's National Emissions Standards for Hazardous Air Pollutants regulations require the identification of all ACM prior to the renovation or demolition of any commercial or industrial structure (40 CFR Chapter 61, Subpart M).

#### **3.2.1 Asbestos Sampling and Analysis**

Suspect ACM is any material that is suspected of potentially containing asbestos (based on appearance, usage, age, or other characteristics), but has not been proven conclusively to be ACM (based on sampling and analysis, documentation, building records, or other sources). Prior to sampling, each suspect ACM was identified and categorized as surfacing, thermal surface insulation (TSI), or miscellaneous material, then its homogeneous area was determined. A homogeneous area is defined as an area of surfacing, TSI, or miscellaneous material that is uniform in color and texture, and which does not extend to other floors or buildings (Title 11 HAR Chapter 501). A total of 43 homogeneous areas of suspect ACM were identified in the CERFP Building 301, and a total of 78 homogeneous areas of suspected ACM were identified in the CSMS-1 Building 304 complex. The homogeneous areas were either sampled or assumed to contain asbestos. In Appendix B, Table B-1 and Table B-2 summarize the location, type, condition, properties, and approximate extent of the

homogenous areas of suspect ACM. Field sampling forms that contain additional information about the nature and conditions of the materials comprising the homogeneous areas are included in Appendix A.

Each of the accessible suspect ACM were sampled following EPA and HAR ACM bulk sampling protocol, regulations, and recommendations (40 CFR Part 763; Title 11 HAR Chapter 501) by a licensed asbestos building inspector (Appendix D). In accordance with applicable guidance, the number of samples collected varied with the size of the homogeneous area; a minimum of three samples were collected from each homogeneous area.

All samples were delivered under chain-of-custody (COC) to NVL Labs (NVL) in Seattle, Washington for analysis by polarized light microscopy, in accordance with EPA *Method for the Determination of Asbestos in Bulk Building Materials* (EPA/600/R-93/116) (EPA 1993). If an asbestos bulk sample consisted of two or more distinct layers of materials, each layer was analyzed separately, and the results were reported for each layer. NVL is accredited for bulk asbestos analysis through the National Voluntary Laboratory Accreditation Program (accreditation #102063) and by the HDOH (Appendix D).

Figure 2 through Figure 37 display the sampling locations and summarize the laboratory findings. Tables in Appendix B summarize the location, type, condition, properties, approximate extent and quantities, and asbestos content of the homogeneous areas of suspect ACM. The NVL laboratory report is provided in Appendix C.1.

### 3.2.2 Asbestos-Containing Material

Based on the asbestos bulk sampling results, the following materials were found to contain asbestos:

**Table 3-1: CERFP Building 301: Sampled Materials Confirmed to Contain Asbestos**

Material Description	Friability	Laboratory Results	Material Extent <sup>1</sup>	Approximate Quantity	Figure	Photo
Gray interior window caulking	Nonfriable	2% chrysotile	Gray caulking found on the window pane perimeters in Rooms 1, 2, 3, and 15	490 lf	4, 13, 5	10
Brown 9"x9" VFT and black mastic under Brown 12"x12" VFT	Nonfriable	VFT: 3% chrysotile Mastic: 2% chrysotile	Room 11	720 ft <sup>2</sup>	9	11
Pink and blue 9"x9" VFT	Nonfriable	4-5% chrysotile	Rooms 7, 8, 9, 10, and 13	1,500 ft <sup>2</sup>	7, 8, 11	12
Beige 9"x9" VFT under blue 12"x12" VFT	Nonfriable	4-5% chrysotile	Room 14	490 ft <sup>2</sup>	12	13

lf linear foot

VFT vinyl floor tile

<sup>1</sup> ACM is assumed to extend below, above, into, and around walls and interior partitions and other areas, as appropriate.

**Table 3-2: CSMS-1 Building 304 Complex: Sampled Materials Confirmed to Contain Asbestos**

Material Description	Friability	Laboratory Results	Material Extent <sup>1</sup>	Approximate Quantity	Figure	Photo
Interior window and door frame caulking	Nonfriable	3% chrysotile	All windows and doors in concrete walls on the southeast wing of Building 304.	890 lf	20, 24	15
Black asphaltic mastic	Nonfriable	3% chrysotile	Room 3, beneath Tan and brown 9"x9" VFT	640 ft <sup>2</sup>	19	16

Material Description	Friability	Laboratory Results	Material Extent <sup>1</sup>	Approximate Quantity	Figure	Photo
Dark brown 9"x9" VFT and black mastic	Nonfriable	VFT: 2% chrysotile Mastic: 2% chrysotile	Rooms 4, 6, and 7	950 ft <sup>2</sup>	19, 22	17
Interior window frame caulking	Nonfriable	2% chrysotile	Safety glass window frames in Rooms 5 and 6	140 lf	20, 22	18
ACT backer board	Friable	25% chrysotile	Rooms 4, 5, 6, 7, 9, 13, and 20 (paint booth)	2,200 ft <sup>2</sup>	19, 21, 22	19, 20
Sink insulation	Friable	3% chrysotile	Room 11 (kitchen)	6 ft <sup>2</sup>	24	21
Gray exterior window caulking	Friable	3% chrysotile	Gray caulking found on the window pane perimeters throughout Building 304	1,760 lf	17, 23, 24	22
Exterior window and door frame caulking	Nonfriable	2% chrysotile	All windows and doors in concrete walls on the southeast wing of Building 304.	890 lf	19, 20, 23	23
Gray exterior window caulking	Friable	2% chrysotile	Gray caulking found on the window pane perimeters of the windows on the Carpenter Shed	290 lf	34	24
Silver roofing paint	Friable	2% chrysotile	Silver paint on the metal roof substrate beneath polymer membrane roof over all of Building 304	27,700 ft <sup>2</sup>	37	25

<sup>1</sup> ACM is assumed to extend below, above, into and around walls and interior partitions and other areas, as appropriate.

### 3.2.3 Presumed Asbestos-Containing Material

The survey also identified several suspect ACMs that were inaccessible at the time of the survey. Therefore, the following materials are presumed to be ACM and must be properly handled, transported, and disposed of prior to demolition of the buildings:

- Mastic assumed to be located behind the mirrors in the men's and women's restrooms in the CERFP Building 301 (six total), shall be assumed to contain asbestos (Figure 6, Photograph 14). Each mirror is approximately 2 ft x 3 ft in size.
- Door insulation, assumed to be within two metal doors at the CERFP Building 301, 18 metal doors at the CSMS-1 Building 304, two metal doors at the Carpenter Shop at the CSMS-1 Building 304 complex, and two metal doors at the Flammable Storage Shed at the CSMS-1 Building 304 complex, shall be assumed to contain asbestos (Photograph 26). Each of the doors is approximately 26.5 ft<sup>2</sup> in size.
- Door insulation, assumed to be within the vault doors at both the CERFP Building 301 (one door) and the CSMS-1 Building 304 (two doors), shall be assumed to contain asbestos (Photograph 27). Each of the doors is approximately 22 ft<sup>2</sup> in size.
- In addition, electrical and other utility conduits, switchboxes, and related items were not inspected due to safety concerns, and are presumed to contain asbestos.

Optionally, these materials may be sampled prior to demolition by a State of Hawaii-licensed asbestos building inspector and analyzed by a certified laboratory to quantitatively determine asbestos content. These materials must be assumed to contain asbestos and should be treated accordingly, unless sampling and analyses proves that their asbestos content is less than 1%.

### 3.3 PAINT WITH LEAD

This lead paint survey and report were conducted in accordance with EPA guidance (40 CFR Part 745) and HDOH guidelines (11 HAR Chapter 41) by a licensed lead paint inspector (Appendix D). LBP is defined as paint or other surface coating that contains lead equal to or in excess of 1 milligram per square centimeter, or at a concentration greater than or equal to 0.5% by weight. For the purposes of this survey, the Occupational Safety and Health Administration definition of lead-containing paint (LCP) is used (29 CFR 1926.62), in which paint or other surface coating containing any detectable levels of lead, but at concentrations less than 0.5% by weight, is considered LCP. The term “paint with lead” includes both LCP and LBP. Non-detectable amounts of lead may be reported in laboratory reports as a “less than reportable limit” value for the analytical method; such results do not indicate paint with lead.

#### 3.3.1 Paint Sampling and Analysis

Prior to sample collection, painted surfaces were categorized into distinct areas of homogeneity, substrate or building material, distinct paint type, and apparent time of paint application. Paint chip samples were collected in general accordance with ASTM International E1729-05, *Standard Practice for Field Collection of Dried Paint Samples for Subsequent Lead Determination* (ASTM 2005). The samples were delivered under COC to NVL for analysis by inductively coupled plasma-atomic emission spectrometry (EPA Method 6010B) (EPA 2007) (Appendix C).

Sample locations are provided in Figure 2 through Figure 37. Field sampling forms that provide additional information about the paints comprising the homogenous areas are included in Appendix A. A total of 45 distinct paints at the CERFP Building 301 and a total of 74 distinct paints at the CSMS-1 Building 304 complex were identified during the inspection and are summarized in tables in Appendix B. The NVL laboratory reports are provided in Appendix C.2.

#### 3.3.2 Lead-Based Paint

Four paint chip samples in the CERFP Building 301 were confirmed to be LBP:

**Table 3-3: CERFP Building 301 Lead-Based Paint Samples**

Sample Number	Material Description	Laboratory Results (% by weight)	Material Extent	Approximate Quantity	Condition	Figure	Photo
DH001P-031	Red paint	0.5800	Red paint on the fire extinguisher frame in the lobby of Building 301	5 ft <sup>2</sup>	Good	8	28
DH001P-035	Yellow paint	5.00	Paint on stairs leading to all entrances to the southeast wing of the building	70 ft <sup>2</sup>	Poor	6	29
DH001P-037	Yellow over orange paint	5.70	Paint on the standing metal pipe frame to the south of Building 301	10 ft <sup>2</sup>	Poor	15	30
DH001P-041	Red over blue paint	1.10	Paint on the north stairs of the southeast wing of the building	70 ft <sup>2</sup>	Fair	11	29

Eighteen paint chip samples in the CSMS-1 Building 304 complex were confirmed to be LBP:

**Table 3-4: CSMS-1 Building 304 Complex Lead-Based Paint Samples**

Sample Number	Material Description	Laboratory Results (% by weight)	Material Extent	Approximate Quantity	Condition	Figure	Photo
DH002P-003	Yellow over green paint	4.900	Yellow paint on the interior and exterior bases of the roll-up doors in Rooms 1, 2, 12, 14, and 16. Also on two of the roll-up doors in Room 17. Extends to two of the metal support pipes of the lunch shelter (Building 304F), and the two bollards protecting the northwest side of the oil-water separator.	300 lf	Poor	29	31
DH002P-015	Beige over dark brown paint	0.6600	Beige/off-white paint on the inside of the doors in Room 3 and 7	40 ft <sup>2</sup>	Poor	19	32
DH002P-016	Dark blue paint	1.400	Dark blue paint on all electrical breaker boxes throughout the complex	60 ft <sup>2</sup>	Good	30	33
DH002P-034	Yellow over black and red paint	20.000	Paint on the railroad rails in the southeast parking lot	160 lf	Poor	37	34
DH002P-038	Silver paint	5.000	Silver paint on the air compressor system on the northwest end of Room 18	180 ft <sup>2</sup>	Good	30	35
DH002P-040	Dark yellow paint	2.400	Dark yellow paint on the overhead crane rails in Room 18	240 ft <sup>2</sup>	Good	30	36
DH002P-041	Sea green over red paint	0.5100	Sea green paint on the overhead crane in Room 18	100 ft <sup>2</sup>	Good	30	37
DH002P-044	Yellow paint	4.300	Yellow paint on the main entry stairs to the southeast wing of Building 304	40 ft <sup>2</sup>	Poor	37	38
DH002P-047	Sand colored paint	1.000	Sand colored paint over exterior exposed I-beams, metal siding, and the Room 12 vent on the exterior of Building 304	6,600 ft <sup>2</sup>	Poor	37	39
DH002P-053	Green	0.500	Green paint on concrete beneath the grease rack (Building 304B) at the northwest end of Building 304	20 ft <sup>2</sup>	Poor	37	40
DH002P-054	Light yellow paint	1.800	Light yellow paint on the grease rack on the northwest end of Building 304	450 ft <sup>2</sup>	Poor	37	41
DH002P-056	Sand colored paint	5.000	Sand colored paint on exterior of the Carpenter Shop (Building 304A)	2,700 ft <sup>2</sup>	Poor	34	42
DH002P-057	Light brown paint	1.300	Paint on the exterior of the Carpenter Shop addition (Building 304A) door	20 ft <sup>2</sup>	Poor	34	43
DH002P-060	Green paint	2.300	Green paint on wood surfaces within the Battery Shop (Building 304E)	15 ft <sup>2</sup>	Poor	35	44

Sample Number	Material Description	Laboratory Results (% by weight)	Material Extent	Approximate Quantity	Condition	Figure	Photo
DH002P-061	Green paint	8.000	Green paint on the metal support pipes of the Battery Shop (Building 304E)	80 ft <sup>2</sup>	Poor	35	44
DH002P-062	Yellow paint	1.9000	Light yellow paint on metal post supporting a control box in the Battery Shop (Building 304E)	15 ft <sup>2</sup>	Poor	35	45
DH002P-065	Off-white paint	1.2000	Off-white paint on the interior of the Canvas Repair Shop (Building 304E)	1,600 ft <sup>2</sup>	Poor	35	46
DH002P-070	Dark brown paint	0.7800	Dark brown paint on the metal support poles of the lunch shelter (Building 304F) and the vehicle shelter (Building 304G)	120 lf	Poor	33	47

LBP extends beyond specific sample locations.

### 3.3.3 Lead-Containing Paint

In addition to the LBP, 28 additional paints samples in the CERFP Building 301 and 43 additional paint samples in the CSMS-1 Building 304 complex had detectable concentrations of lead:

**Table 3-5: CERFP Building 301 Lead-Containing Paint Samples**

Sample Number	Laboratory Results (% by weight)	Sample Location	Color	Substrate	Condition	Figure
DH001P-002	0.1100	Inside door of Room 1	Black on green and yellow	Wood	Fair	3
DH001P-004	0.0044	Lower wall of Room 2	Light blue	Concrete/CMU	Fair	4
DH001P-007	0.0440	Room 2	Light blue	Wood	Fair	4
DH001P-008	0.0100	Room 1	Black	Concrete/CMU	Poor	3
DH001P-009	0.0370	Room 12 door	Beige	Wood	Poor	10
DH001P-010	0.0520	Room 2	Light green	Wood	Poor	4
DH001P-012	0.0540	On door frame between Room 7 and Room 8	Light brown over light blue	Wood	Poor	7
DH001P-013	0.4400	Women's restroom	Light tan	Metal	Poor	6
DH001P-016	0.0061	Men's restroom by left urinal	Pink over green	Concrete	Poor	6
DH001P-017	0.0240	Women's restroom upper pink trim	Pink over light green	Wood	Fair	6
DH001P-020	0.2700	In hallway behind water fountain	Light brown	Concrete	Good	7
DH001P-021	0.0960	Room 12 left side of entrance	Beige over light blue, brown and green	Concrete	Poor	10
DH001P-022	0.0027	Room 12A conduit under sink	Beige	Metal	Poor	10
DH001P-025	0.0110	Vault interior right side of Room 15A	Off-white	Concrete	Good	13
DH001P-026	0.0800	Vault door right side bottom	Dark gray	Metal	Good	13
DH001P-027	0.4400	Vault door right side bottom of frame	Light gray	Metal	Good	13



Sample Number	Laboratory Results (% by weight)	Sample Location	Color	Substrate	Condition	Figure
DH001P-028	0.0081	Room 17 left of middle of warehouse	Dark salmon	Concrete	Fair	14
DH001P-032	0.0230	Room 17 ceiling	Beige	Acoustic Tile	Good	14
DH001P-033	0.0091	Room 17 doors exterior & interior	Dark brown over gray	Metal	Fair	14
DH001P-034	0.0032	Exterior walls Room 17 southwest double doors	Off-white over light green	Concrete	Fair	15
DH001P-036	0.0350	Exterior roof	Tan	Wood	Poor	8
DH001P-038	0.0060	Parking lot white stripe 3rd to last stall	White	Asphalt	Fair	15
DH001P-039	0.0170	Northeast stairs	Black over blue	Concrete	Fair	11
DH001P-040	0.0960	Northeast stairs	Blue	Concrete	Fair	11
DH001P-042	0.4700	Flagpole, post	White	Metal	Poor	15
DH001P-043	0.0030	Gray parking stripe	Gray	Asphalt	Fair	15
DH001P-044	0.0310	Exterior Room 17 north of double doors	Off-white over light green	Metal	Fair	15
DH001P-045	0.1700	Exterior right of entrance under first air conditioner	Off-white	Wood	Poor	9

**Table 3-6: CSMS-1 Building 304 Complex Lead-Containing Paint Samples**

Sample Number	Laboratory Results (% by weight)	Sample Location	Color	Substrate	Condition	Figure
DH002P-001	0.4500	Interior of roll-up door in Room 18	Green	Metal	Poor	30
DH002P-002	0.3700	Door frame of Room 4	Black	Metal	Poor	19
DH002P-004	0.0080	By vault in Room 5	Green	Concrete	Poor	20
DH002P-005	0.0270	Room 1, corner by door	White	Concrete	Poor	17
DH002P-006	0.0140	Wall near door, Room 11	Red over pink and green	Concrete	Poor	24
DH002P-008	0.0026	Pipes in Room 11	White	Metal	Fair	24
DH002P-011	0.1900	Wall of Room 2A	Green	Drywall	Fair	18
DH002P-012	0.1700	Room 3, shared wall with Room 2	White	Drywall	Fair	19
DH002P-013	0.2000	Inside door frame of Room 5	Blue	Metal	Fair	20
DH002P-014	0.0680	Baseboard of Room 2	Green	Wood	Good	18
DH002P-017	0.0140	Room 4 walls by vault door	Light blue	Concrete	Poor	19
DH002P-018	0.0210	Room 7, northeast wall near door	Beige over dark brown	Concrete	Good	22
DH002P-019	0.0100	Room 7, interior door to Room 6	Beige	Wood	Good	22
DH002P-020	0.0030	Room 7, northeast drywall wall	Beige	Drywall	Good	22
DH002P-022	0.1700	Room 7 window	Beige	Glass	Poor	22
DH002P-023	0.0055	Room 6, far door window	White	Glass	Good	22
DH002P-024	0.0250	Outer door of Room 6B	White over green	Wood	Poor	22
DH002P-025	0.0750	Sprinkler system lines outside Room 20	Red	Metal	Good	32

Sample Number	Laboratory Results (% by weight)	Sample Location	Color	Substrate	Condition	Figure
DH002P-026	0.0480	Room 9 shower door	Pink	Wood	Poor	23
DH002P-027	0.0140	Room 9, interior of restroom door	Pink	Metal	Poor	23
DH002P-028	0.0290	Room 9, middle right wall	Pink	Concrete	Good	23
DH002P-031	0.0035	Room 9, wall near sinks	Tan	Tile	Good	23
DH002P-033	0.0510	Room 16, north bay door	Light brown over light green	Metal	Poor	27
DH002P-035	0.0099	Room 18 floor stripe	Yellow	Concrete	Poor	30
DH002P-036	0.1400	Exterior, center column between Room 12 roll up doors	Black over yellow and green	Concrete	Poor	24
DH002P-037	0.1500	Room 17, southeast bay door	Light blue	Metal	Fair	29
DH002P-039	0.0200	Room 18 walls	Bright white	Concrete	Good	30
DH002P-042	0.0320	South exterior corner of Room 12	Sand	Concrete	Poor	24
DH002P-043	0.0570	Southeast exterior of Room 3	Light brown	Concrete	Poor	19
DH002P-045	0.1400	Parking lot stripes, southeast side	White over yellow	Asphalt	Poor	37
DH002P-048	0.0480	Wood doors for storage closet	Light brown	Wood	Poor	22
DH002P-049	0.0880	Exterior wall between Rooms 14 and 18	Peach over green	Concrete	Fair	30
DH002P-050	0.0050	Glass window in doors for Room 15	Light brown	Glass	Poor	26
DH002P-051	0.0420	Exterior of Room 19 roll-up door	Medium brown over light brown and green	Metal	Fair	31
DH002P-052	0.0019	Bollard outside of Room 19	Orange	Metal	Poor	37
DH002P-055	0.4000	Carpenter shop interior, northeast wall window sill (Building 304A)	Gray	Metal	Poor	34
DH002P-059	0.0570	Canvas Repair Shop exterior (Building 304A)	Sand	Metal	Poor	35
DH002P-063	0.0180	Wall of Battery Shop (Building 304E)	Red	Metal	Poor	35
DH002P-064	0.0028	Canvas Repair Shop ramp (Building 304A)	Yellow	Concrete	Poor	35
DH002P-066	0.0470	Canvas Repair Shop, back door (Building 304A)	Light brown	Metal	Poor	35
DH002P-067	0.0510	Canvas Repair Shop foundation (Building 304A)	Light brown	Concrete	Poor	35
DH002P-068	0.0019	Bollards behind shipping container	Yellow	Metal	Poor	36
DH002P-069	0.1600	Interior walls of shipping container	Light blue	Metal	Fair	36

LCP extends beyond specific sample locations.

### 3.4 OTHER POTENTIALLY HAZARDOUS BUILDING MATERIALS

During the inspection, other potentially hazardous building materials were noted, including potential PCB-containing items, mercury-containing items, ODSs, and radioactive sources. While out of scope of this survey, and not sampled or analyzed, observations are summarized in the following subsections.

### 3.4.1 Potential Polychlorinated Biphenyls

PCBs are synthetic chemicals that were manufactured for use in various industrial and commercial applications (including oil in electrical and hydraulic equipment, and plasticizers in paints, plastics, and rubber products), because of their non-flammability, chemical stability, high boiling point, or electrical insulation properties. Until the late 1970s, PCBs were commonly used as insulators in electrical equipment, because they have high tolerance to heat, do not burn easily, and are non-explosive. In 1979, the EPA banned the manufacture and sale of PCBs in most materials in the United States (EPA 1979).

Up to 160 fluorescent (Photograph 48), sodium (Photograph 49), and high intensity discharge (HID) flood lamp fixtures (Photograph 50) were observed in the CERFP Building 301, each assumed to contain at least one ballast (Appendix B, Table B-5). Up to 240 fluorescent, sodium, and HID lamp fixtures were observed at the CSMS-1 Building 304 complex, each assumed to contain at least one ballast (Appendix B, Table B-6). Non-PCB-containing ballasts will be labeled with "No PCBs" or similar. Any ballasts lacking such labelling should be assumed to contain PCBs and managed accordingly, unless analytical testing proves otherwise.

### 3.4.2 Potential Mercury-Containing Materials

Mercury, a naturally occurring element that is present throughout the environment, is toxic, and requires special handling when encountered. In buildings, mercury is often present in thermometers, barometers, switches, thermostats, and fluorescent metal halide, sodium, and HID light bulbs.

In the CERFP Building 301, the survey identified up to 160 light fixtures, containing up to 320 fluorescent bulbs, 10 sodium bulbs, and 6 HID lamps. In the CSMS-1 Building 304 complex, the survey identified up to 240 light fixtures, containing up to 530 fluorescent bulbs, 10 sodium bulbs, and 18 HID lamps (details provided in Appendix B, Table B-5 and B-6). All of these bulbs are assumed to contain mercury and should be removed, handled, disposed of, and managed accordingly.

Other potential mercury-containing building materials were not readily observed in the portions of the building inspected, but could be present (e.g., in electric switches or other utility components).

### 3.4.3 Potential Radioactive Materials

Illuminated building exit signs may contain tritium, the radioactive form of hydrogen. Additionally, smoke detectors often use a radioactive source to detect smoke particles. Therefore, illuminated exit signs and smoke detectors should be assumed to contain radioactive materials, and handled, transported, and disposed of accordingly, prior to demolition of the buildings.

However, no illuminated exits signs or smoke detectors were observed in either the CERFP Building 301 or the CSMS-1 Building 304 complex. If encountered, such materials should be removed, handled, disposed of, and managed appropriately.

### 3.4.4 Potential Ozone Depleting Substances

ODSs are halogen-containing substances that damage the ozone layer in the upper atmosphere. ODSs are commonly used in refrigeration and heating, ventilation, and air conditioning (HVAC) systems. Therefore, during the disposal of appliances, including HVAC units, the potential release of ODSs should be minimized by complying with all applicable laws and regulations, including 40 CFR Part 82 Subpart F (42 U.S.C. 1963).

During the survey, 14 in-window air conditioner units were observed at the CERFP Building 301 (Photograph 51), and 7 in-window and 2 split air conditioner units (Photograph 52 and Photograph 53) were observed at the CSMS Building 304 complex. All of these components are assumed to contain ODSs, and they should be handled, transported, disposed of, and managed accordingly, prior to demolition of the buildings.

## 4.0 SURFACE SOIL SAMPLING

Soil sampling was conducted at the CERFP Building 301 and the CSMS-1 Building 304 complex to determine whether chlordane, a pesticide commonly used between 1948 and 1988 to control termites, was present in the surface soil in the immediate vicinity of either building in concentrations that may be harmful to human health or the environment. Additionally, as a result of the LBP found on the exterior of the Carpenter Shop and the LCP found on the exteriors of Building 301 and Building 304, accessible surface soil surrounding these structures was also analyzed for lead content.

### 4.1 SURFACE SOIL SAMPLING METHODOLOGY

Surface soil samples were collected from three decision units (DUs) at the CERFP Building 301 and the CSMS-1 Building 304 complex in accordance with the incremental soil sampling guidance presented in the *Technical Guidance Manual for the Implementation of the Hawaii State Contingency Plan* (DOH 2009). The boundaries of the DUs were established to cover surface soil fronting the exterior walls of the CERFP Building 301, the CSMS-1 Building 304, and the Carpenter Shop at the CSMS-1 Building 304 complex. Specifically:

- DU03 covers the surface soil in front of the southwest and northwest walls of the Carpenter Shop, no further than 5 ft from the footprint of the structure.
- DU04 covers the surface soil in front of the southeast and southwest walls of the CSMS-1 Building 304, no further than 5 ft from the building foundation.
- DU05 covers the surface soil in front of the southeast, southwest, and northwest walls of the CERFP Building 301.

Approximate DU boundaries are provided on Figure 38 and Figure 39.

Each DU was divided into 30 subunits, from which a 20 gram (g) increment of soil was collected from a random location within the subunit, at a depth of 0 to 6 inches below the ground surface, using a disposable scoop. The increments were combined in a gallon-sized Ziploc bag, which was then labeled, sealed, and placed in a cooler on ice. All samples were logged and delivered to the analytical lab under COC.

Samples were analyzed for total lead content via EPA Method 6010B, for leachable lead via a Toxicity Characteristic Leaching Procedure (TCLP) – lead (EPA Method 1311), and for chlordane via EPA Method 8081A.

## 4.2 SURFACE SOIL SAMPLING RESULTS

### 4.2.1 Screening Criteria

HDOH surface soil screening criteria is dependent upon the following: the location of the site relative to the nearest surface water body; whether the groundwater beneath the site is a potential drinking water source; and the land use category. The nearest surface body of water to the portion of the parcel occupied by the two buildings is the Pacific Ocean, approximately 2,910 ft (887 meters [m]) to the south. The entire parcel is below (makai of) the HDOH UIC line; therefore, the groundwater beneath the site is not considered a potential drinking water source. The parcel is zoned as restricted

and general preservation land (P-1 and P-2, respectively). As a result, the allowed land use for the parcel is limited, and future redevelopment of the site for residential purposes is not expected.

Immediate redevelopment plans for the area call for the expansion of current facilities utilized by visitors of the Diamond Head State Monument and Park, including the construction of new hiking trails, comfort stations, and a visitor's center. Specifically, the area occupied by the CSMS-1 Building 304 complex is considered a possible location for the future visitor's center. Additionally, the master plan for the park proposes the restoration of a wetland pond that was formerly located on the east side of the crater floor, approximately 990 ft (302 m) to the southeast of the CSMS-1 Building 304 complex.

Project screening criteria for surface soil were derived from HDOH Tier 1 Environmental Action Levels (EALs) using two site scenarios:

- *Site Scenario 1: Unrestricted/Residential Use*, in which groundwater is not a drinking water resource, and the distance to nearest surface water body is greater than 150 m.
- *Site Scenario 2: Commercial/Industrial Use*, in which groundwater is not a drinking water resource, and the distance to nearest surface water body is greater than 150 m.

Site Scenario 1 is more stringent and is based upon the goal of having no restrictions on land use upon transfer of the property to the DLNR. Site Scenario 2 is based both upon historical site use (maintenance facilities) and anticipated future site use (non-residential activities).

#### 4.2.2 Surface Soil Sampling Results

The results of the surface soil sampling are summarized in Table 4-1 below:

**Table 4-1: Surface Soil Sampling Results**

Analyte (Method)	Screening Criteria		DU-03	DU-04	DU-05
	Site Scenario 1: Unrestricted/Residential EAL	Site Scenario 2: Commercial/Industrial EAL	CSMS-1 Carpenter Shop	Southeast side of Building 304	SE, SW and NW sides of Building 301
Total Lead (6010B)	200	800	580 B	75 B	73 B
TCLP-Lead (1311)	5.0 mg/L *		ND <sup>a</sup>	ND <sup>a</sup>	ND <sup>a</sup>
Chlordane (8081B)	16	29	0.016 J p	0.031 J	1.2

All units in mg/kg, unless otherwise indicated.

**bold** = concentration exceeds unrestricted/residential Tier 1 EAL

B Compound was found in the blank and sample

J Result is less than the reportable limit (RL) but greater than or equal to the method detection limit (MDL) and the concentration is an approximate value

EAL Environmental action level. Values shown are for sites where groundwater is not a drinking water resource, and the nearest surface water body is greater than 150 m.

ND Non-detect

NW northwest

p The % RPD between the primary and confirmation column/detector is >40%. The lower value has been reported.

mg/kg milligram per kilogram

mg/L milligram per liter

RPD Relative Percent Difference, a measure of the relative distance between two points

SE southeast

SW southwest

\* EPA's "toxicity characteristic" level for disposal (40 CFR 261.24)

<sup>a</sup> Reporting limit: 0.10 mg/L, MDL: 0.040 mg/L

Lead was detected in all three surface soil samples obtained at the sites. The highest concentration of lead was detected in the surface soil sample taken from the area surrounding the Carpenter Shop on the west corner of the CSMS-1 Building 304 complex. The concentration of 580 mg/kg exceeded Tier 1 EAL for unrestricted use, but was below the EAL for commercial/industrial site use. Detected concentrations of lead in the surface soil fronting the southeast end of Building 304 and on the southeast, southwest, and northwest sides of Building 301 were below the EAL for unrestricted use. TCLP-lead analysis found non-detectable concentrations of lead leachate from each sample, indicating that there are not any restrictions, due to lead content, on disposing this soil in a landfill.

Chlordane was also detected in all three surface soil samples. However, all concentrations were well below the Tier 1 EAL for unrestricted site use.

## **5.0 OIL-WATER SEPARATOR SAMPLING**

An oil-water system was utilized at the CSMS-1 Building 304 complex to collect water from vehicle wash downs. The vehicle wash down area was located on a concrete pad on the northeast end of the complex, approximately 18 ft. southeast of the Flammable Storage Shed. Wash water would flow into a drain on the northeast side of the concrete pad, where it was then pumped to a surge pit located north of Building 304. The water from the surge pit was pumped into an aboveground Ultracept oil-water separator and waste oil holding tank unit located against the northwest wall of Building 304. Reportedly, the oil-water separator has been inoperable for a couple of years. At the time of the survey, approximately 1,900 gallons of water were observed in the surge pit, and another 44 gallons observed in the oil-water separator unit. Dark sediment was observed in the bottoms of both the oil-water separator unit and the waste oil holding tank unit (Photograph 54 and Photograph 55). While a sheen was observed on the surface of the water in the surge pit, no collectable oil-phase product was present.

### **5.1 WATER AND SEDIMENT SAMPLING METHODOLOGY**

Because the water in the surge pit presumably contained runoff from the wash down area before it entered the separator, it was assumed to conservatively represent the condition of all of the water in the system. A single water sample was collected from the surge pit using a 0.5-inch diameter bailer and transferred to laboratory-provided glass amber, plastic, and glass volatile organic analysis vials, then labeled, sealed, and placed in a cooler on ice.

A composite sample of sediment was collected from the material that had settled in the oil-water separator unit and the waste oil holding tank. At the time of the sampling, dark sediment was observed to be evenly distributed on the bottoms of both the oil-water separator unit and the waste oil handling tank, approximately 1 to 2 inches thick. Both the oil-water separator unit and the waste oil holding tank contained approximately 2 to 3 inches of water. No waste oil was observed in the waste oil holding tank. The composite sample was composed of two aliquots, one obtained from the bottom of the oil-water separator unit, and the other from the bottom of the waste oil handling tank. The aliquots were obtained by hand via disposable plastic scoops from the bottoms of the unit and the tank. The sediment from each aliquot was then evenly distributed amongst four laboratory-provided 4-ounce glass jars. Excess water was decanted off of the jars, which were then labeled, sealed, and placed in a cooler on ice.

The water and sediment samples were analyzed for TPH-GRO and TPH-DRO/RRO via EPA method 8015B, VOCs via method 8260B, PAHs via method 8310, RCRA-7 total metals via method 6010B, total mercury via method 7470A, pH via method 150.1, and ignitability. A TCLP analysis was also performed on the sediment sample for the RCRA-7 metals and mercury.

## 5.2 WATER AND SEDIMENT SAMPLING RESULTS

### 5.2.1 Regulatory Criteria

In order to determine disposal requirements, laboratory analyses of the water and sediment samples were compared to the EPA's hazardous waste toxicity characteristics levels under RCRA Subtitle C (40 CFR 261), where applicable.

### 5.2.2 Water and Sediment Sampling Results

The results of the water and sediment sampling are presented below in Table 5-1, Table 5-2, and Table 5-3.

**Table 5-1: Oil-Water Separator Water Sample Results**

Analyte (Method)	Concentration (µg/L, except as otherwise indicated)		
	DU-01 Water from surge pit		
	Result	Qualifier	MDL
<b>Volatile Organic Compounds (VOCs) Method 8260B</b>			
1,1,1,2-Tetrachloroethane	ND		0.25
1,1,1-Trichloroethane	ND		0.25
1,1,2,2-Tetrachloroethane	ND		0.25
1,1,2-Trichloroethane	ND		0.25
1,1-Dichloroethane	ND		0.25
1,1-Dichloroethene	ND		0.25
1,1-Dichloropropene	ND		0.25
1,2,3-Trichlorobenzene	ND		0.40
1,2,3-Trichloropropane	ND		0.25
1,2,4-Trichlorobenzene	ND		0.40
1,2,4-Trimethylbenzene	ND		0.25
1,2-Dibromo-3-Chloropropane	ND		0.50
1,2-Dichlorobenzene	ND		0.25
1,2-Dichloroethane	ND		0.25
1,2-Dichloropropane	ND		0.25
1,3,5-Trimethylbenzene	ND		0.25
1,3-Dichlorobenzene	ND		0.25
1,3-Dichloropropane	ND		0.25
1,4-Dichlorobenzene	ND		0.25
2,2-Dichloropropane	ND		0.40
2-Chlorotoluene	ND		0.25
4-Chlorotoluene	ND		0.25
Benzene	ND		0.25
Bromobenzene	ND		0.25
Bromoform	ND		0.40
Bromomethane	ND		0.25
Carbon tetrachloride	ND		0.25
Chlorobenzene	ND		0.25
Chloroethane	ND		0.40
Chloroform	ND		0.25
Chloromethane	ND		0.25

Analyte (Method)	Concentration (µg/L, except as otherwise indicated)		
	DU-01 Water from surge pit		
	Result	Qualifier	MDL
cis-1,2-Dichloroethene	ND		0.25
cis-1,3-Dichloropropene	ND		0.25
Dibromomethane	ND		0.25
Dichlorodifluoromethane	ND		0.25
Ethylbenzene	ND		0.25
Hexachlorobutadiene	ND		0.25
Isopropylbenzene	ND		0.25
m,p-Xylene	ND		0.50
Methylene Chloride	ND		1.1
Naphthalene	ND		0.40
n-Butylbenzene	ND		0.40
N-Propylbenzene	ND		0.25
o-Xylene	ND		0.25
sec-Butylbenzene	ND		0.25
Styrene	ND		0.25
tert-Butylbenzene	ND		0.25
Tetrachloroethene	ND		0.25
Toluene	ND		0.25
trans-1,2-Dichloroethene	ND		0.25
trans-1,3-Dichloropropene	ND		0.25
Trichloroethene	ND		0.25
Trichlorofluoromethane	ND		0.25
Vinyl chloride	ND		0.25
1,2-Dibromoethane (EDB)	ND		0.25
Bromochloromethane	ND		0.25
Bromodichloromethane	ND		0.25
Dibromochloromethane	ND		0.25
p-Isopropyltoluene	ND		0.25

**Total Petroleum Hydrocarbons (TPH) EPA Method 8015B**

Gasoline Range Organics	89		25
C <sub>12</sub> -C <sub>34</sub>	45,000		5,100
Diesel Range Organics	42,000		5,100
Residual Range Organics	5,500	J	5,100

**Polynuclear Aromatic Hydrocarbons (PAHs) EPA Method 8310**

Acenaphthene	ND		0.31
Acenaphthylene	ND		0.69
Anthracene	1.2		0.034
Benzo[a]anthracene	0.068		0.031
Benzo[a]pyrene	0.092		0.017
Benzo[b]fluoranthene	0.40		0.027
Benzo[g,h,i]perylene	0.23		0.030



Analyte (Method)	Concentration (µg/L, except as otherwise indicated)		
	DU-01 Water from surge pit		
	Result	Qualifier	MDL
Benzo[k]fluoranthene	ND		0.020
Chrysene	0.32		0.016
Dibenz(a,h)anthracene	ND		0.042
Fluoranthene	0.42		0.083
Fluorene	0.39		0.092
Indeno[1,2,3-cd]pyrene	ND		0.025
Naphthalene	ND		0.47
Phenanthrene	8.7	E	0.099
Pyrene	1.1		0.047

**Total Metals, EPA Method 6010B, mg/L**

Arsenic	ND		0.0050
Barium	0.090		0.0050
Cadmium	0.032		0.0020
Chromium	0.10		0.0025
Lead	0.080	B	0.0025
Selenium	ND		0.0061
Silver	ND		0.0050

**Mercury, EPA Method 7470A, mg/L**

Mercury	ND		0.00020
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**General Chemistry**

Flashpoint (°F)	>201		50.0
pH (EPA Method 150.1)	8.74		1.00

°F	degrees Fahrenheit
B	Compound was found in the blank sample
E	results exceeded calibration range
J	result is less than RL, but greater than or equal to the method reporting limit and the concentration is an approximate value
MDL	Method Detection Limit
ND	non-detect

VOCs were not detected in the water sample. Detectable levels of gasoline, C<sub>12</sub>-C<sub>34</sub>, diesel, and residual range organic TPHs were found. Several PAHs were detected in the sample, including anthracene, benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[g,h,i]perylene, chrysene, fluoranthene, fluorene, phenanthrene, and pyrene. Metals detected in the water sample included barium, cadmium, chromium, and lead. It is noted that a laboratory qualifier indicates that lead was also detected in the laboratory blank sample, indicating that the presence of lead may be the result of laboratory contamination. However, the four metals detected in the water sample were also detected in the sediment obtained from the oil-water separator and holding tank (Table 5-2), suggesting that the detected lead is not an artifact. The presence of the detected constituents may affect disposal options and costs.

**Table 5-2: Oil-Water Separator Sediment Sample Results**

Analyte (Method)	Concentration (mg/kg)		
	DU-02 Sediment from oil-water separator and holding tank		
	Result	Qualifier	MDL
<b>Volatile Organic Compounds (VOCs) Method 8260B</b>			
1,1,1,2-Tetrachloroethane	ND	*	0.024
1,1,1-Trichloroethane	ND		0.0095
1,1,2,2-Tetrachloroethane	ND	*	0.0095
1,1,2-Trichloroethane	ND	*	0.0095
1,1-Dichloroethane	ND		0.0095
1,1-Dichloroethene	ND		0.024
1,1-Dichloropropene	ND		0.0095
1,2,3-Trichlorobenzene	ND	*	0.024
1,2,3-Trichloropropane	ND	*	0.048
1,2,4-Trichlorobenzene	ND	*	0.024
1,2,4-Trimethylbenzene	ND	*	0.0095
1,2-Dibromo-3-Chloropropane	ND	*	0.024
1,2-Dichlorobenzene	ND	*	0.0095
1,2-Dichloroethane	ND		0.0095
1,2-Dichloropropane	ND	*	0.0095
1,3,5-Trimethylbenzene	ND	*	0.0095
1,3-Dichlorobenzene	ND	*	0.0095
1,3-Dichloropropane	ND	*	0.0095
1,4-Dichlorobenzene	ND		0.0095
2,2-Dichloropropane	ND		0.0095
2-Chlorotoluene	ND	*	0.024
4-Chlorotoluene	ND	*	0.024
Benzene	ND		0.0095
Bromobenzene	ND	*	0.024
Bromoform	ND	*	0.024
Bromomethane	ND		0.024
Carbon tetrachloride	ND		0.024
Chlorobenzene	ND		0.0095
Chloroethane	ND		0.024
Chloroform	ND		0.0095
Chloromethane	ND		0.024
cis-1,2-Dichloroethene	ND		0.0095
cis-1,3-Dichloropropene	ND	*	0.0095
Dibromomethane	ND		0.0095
Dichlorodifluoromethane	ND		0.024
Ethylbenzene	ND	*	0.0095
Hexachlorobutadiene	ND	*	0.024
Isopropylbenzene	ND	*	0.0095
m,p-Xylene	ND	*	0.019
Methylene Chloride	ND		0.095
Naphthalene	ND	*	0.024

Analyte (Method)	Concentration (mg/kg)		
	DU-02 Sediment from oil-water separator and holding tank		
	Result	Qualifier	MDL
n-Butylbenzene	ND	*	0.024
N-Propylbenzene	ND	*	0.0095
o-Xylene	ND	*	0.0095
sec-Butylbenzene	ND	*	0.024
Styrene	ND	*	0.0095
tert-Butylbenzene	ND	*	0.024
Tetrachloroethene	ND	*	0.0095
Toluene	ND	*	0.0095
trans-1,2-Dichloroethene	ND		0.0095
trans-1,3-Dichloropropene	ND	*	0.0095
Trichloroethene	ND		0.0095
Trichlorofluoromethane	ND		0.024
Vinyl chloride	ND		0.024
1,2-Dibromoethane (EDB)	ND	*	0.0095
Bromochloromethane	ND		0.024
Bromodichloromethane	ND		0.0095
Dibromochloromethane	ND	*	0.0095
p-Isopropyltoluene	ND	*	0.0095
<b>Total Petroleum Hydrocarbons (TPH) EPA Method 8015B</b>			
Gasoline Range Organics	89		20
C12-C34	120,000		960
Diesel Range Organics	110,000		960
Residual Range Organics	25,000		960
<b>Polynuclear Aromatic Hydrocarbons (PAHs) EPA Method 8310</b>			
Acenaphthene	ND	F1	0.0050
Acenaphthylene	ND	F1	0.022
Anthracene	0.021	J F2 F1 p	0.0074
Benzo[a]anthracene	ND	F1	0.00069
Benzo[a]pyrene	0.011	J F1 p	0.00076
Benzo[b]fluoranthene	0.13	F1 p	0.00099
Benzo[g,h,i]perylene	0.073	F1	0.0012
Benzo[k]fluoranthene	ND	F1	0.00055
Chrysene	0.082	F1 F2	0.00061
Dibenz(a,h)anthracene	ND	F2	0.00098
Fluoranthene	ND	F1	0.0012
Fluorene	ND	F1	0.00095
Indeno[1,2,3-cd]pyrene	ND	F1	0.00073
Naphthalene	ND		0.0070
Phenanthrene	0.044	J F2 F1 p	0.00063
Pyrene	0.46	E	0.00096

Analyte (Method)	Concentration (mg/kg)		
	DU-02 Sediment from oil-water separator and holding tank		
	Result	Qualifier	MDL
<b>Total Metals, EPA Method 6010B</b>			
Arsenic	ND		1.5
Barium	49		0.74
Cadmium	4.7		0.25
Chromium	73		0.49
Lead	9.0		0.98
Selenium	ND		1.5
Silver	ND		0.74
<b>Mercury, EPA Method 7470A</b>			
Mercury	0.027		0.012

- E results exceed calibration range
- F1 Matrix spike (MS) and /or matrix spike duplicate (MSD) Recovery is outside acceptance limits
- F2 MS/MSD RPD exceeds control limits
- J Result is less than RL but greater than or equal to the MDL and the concentration is an approximate value
- MDL Method Detection Limit
- p The % RPD between the primary and confirmation column/detector is >40%. The lower value has been reported.
- RPD relative percent difference, a measure of the relative difference between two points
- \* internal standard response or retention time outside of acceptable limits

**Table 5-3: Oil-Water Separator Sediment TCLP Results**

Analyte (Method)	Concentration (mg/L, except as otherwise noted)			
	Toxicity Characteristic Levels	DU-02 Sediment from oil-water separator and holding tank		
		Result	Qualifier	MDL
<b>TCLP Metals, EPA Method 6010B</b>				
Arsenic	5	ND		0.070
Barium	100	0.58		0.060
Cadmium	1	ND		0.020
Chromium	5	ND		0.020
Lead	5	ND		0.040
Selenium	1	ND		0.080
Silver	5	ND		0.060
<b>TCLP Mercury, EPA Method 6010B</b>				
Mercury	0.2	ND		0.0010
<b>General Chemistry</b>				
Flashpoint (°F)	140	not ignitable		1.0
pH (EPA Method 150.1)	<2 or >12.5	8.30	H	0.100

- °F degrees Fahrenheit
- H Sample was prepped or analyzed beyond the specified holding time

While the TCLP, ignitability, and corrosivity characteristics criteria were not exceeded, the presence of TPH, PAHs, and metals may affect disposal options and requirements.

## 6.0 RECYCLABLE MATERIALS SURVEY

The CERFP Building 301 and CSMS-1 Building 304 complex were also surveyed to identify and categorize potentially recyclable construction and demolition (C&D) debris that may be generated during the demolition of the site facilities. Generally, potentially recyclable C&D material may include concrete, asphalt, stone, metal, wood, glass, and other building materials. The recycling of these materials may conserve natural resources, reduce air and water pollution associated with materials manufacturing and transportation, and reduce project costs. This section of the report presents the results of the recyclable materials survey, and identifies locally available recycling options.

### 6.1 RECYCLING AND REUSE FACILITIES

Facilities are available on Oahu that accept C&D materials for recycling or reuse. AECOM contacted several of these vendors to evaluate costs and any requirements that they may have for acceptance of the material. The facilities listed in Table 6-1 were contacted.

**Table 6-1: Contacted C&D Recycling Facilities on Oahu**

Facility	Contact Information	Materials Accepted
Island Recycling	91-140 Kaomi Loop Kapolei, HI 96707 808-682-9200	Ferrous and non-ferrous metals
Grace Pacific LLC	949 Kamokila Boulevard, Suite 100 Kapolei, HI 96707 808-836-1751	Concrete, asphalt, rock
Lenox Metals LLC	91-185 Kalaeloa Boulevard Kapolei, HI 96707 808-682-5539	Ferrous and non-ferrous metals
Okuda Metals	1804 Kahai Street Honolulu, HI 96819 808-845-6856	Ferrous and non-ferrous metals
PVT Land Co. Ltd.	87-2020 Farrington Highway Waianae, HI 96796 808-668-4561	Concrete, asphalt, rocks, plastics, metal, wood
Reuse Hawaii	200 Keawe Street Honolulu, HI 96813 808-537-2228	Salvaged building materials
Schnitzer Steel	91-056 Hanua Street Kapolei, HI 96707 808-682-5810	Ferrous and non-ferrous metals
Tajiri Lumber Ltd.	1002 Puuwai Street Honolulu, HI 96819 808-841-2896	Concrete, asphalt, rock
West Oahu Aggregate Co.	855 Umi Street Honolulu, HI 96819 808-668-1950	Concrete, asphalt, rock

With the exception of Reuse Hawaii and Tajiri Lumber, the vendors listed above do not conduct demolition work. Reuse Hawaii markets itself as a “deconstruction” service, which disassembles structures by hand to salvage potentially reusable materials that the company resells in its base yard. The company subcontracts the demolition and disposal of materials that it cannot sell or process by itself (i.e., concrete). Reuse Hawaii generally requires that all hazardous materials be abated from the building prior to deconstruction. Deconstruction costs vary based on the building type, age, and quantities of materials which the company evaluates as reusable. Tajiri Lumber offers

traditional demolition services, where heavy equipment is utilized to perform the demolition, including concrete, asphalt and rock recycling. Similar to Reuse Hawaii, Tajiri Lumber will require the abatement of all hazardous materials prior to demolition.

## 6.2 RECYCLABLE MATERIAL TYPES AND QUANTITIES

Based on a survey of recycling facilities on Oahu, the types of C&D materials that can be recycled locally include concrete, asphalt, stones/rocks, steel, aluminum, copper, wood, and plastic. Although glass beverage container recycling is ubiquitous, window and mirror glass is not currently accepted for recycling on Oahu.

Table 6-2 and Table 6-3 list the types and roughly estimated quantities of recyclable building materials based on the design drawings provided to AECOM for the CERFP Building 301 (DAGS 1961) and CSMS-1 Building 304 (DAGS 1963), respectively. Based on multiple visits to the sites, the buildings were constructed as designed, with no significant deviations observed. The materials and quantities in the tables are presented to provide an example of the quantity of materials that could potentially be diverted for recycling. Because the estimates were roughly quantified from the 1960s design drawings for the two buildings, actual quantities may differ from these estimates, and other recyclable materials not identified in the as-built drawings may also be present.

**Table 6-2: Types and Quantities of Potentially Recyclable Building Materials in Building 301**

Material	Estimated Quantity (tons)		Estimation Assumptions
Concrete	Foundation slabs	2,085.0	East side of building: 4 in thick x 8,850 ft <sup>2</sup> x 150 lb/cf West side of building and southwest paved area: 4.5 in thick x 66,277 ft <sup>2</sup> x 150 lb/cf
	Foundation footings	15.9	53 ea x 4 cf/ea (each footing is 4 ft <sup>2</sup> x 1 ft high) x 150 lb/cf
	Sidewalks	16.6	664 ft <sup>2</sup> x 4 in thick x 150 lb/cf
	Vault ceiling	7.5	200 ft <sup>2</sup> x 6 in thick x 150 lb/cf
Concrete	Gutter splash blocks	0.1	8 ea x 31 lb/ea
	Hollow tile walls	315.6	6 in tile walls: 234 lf x 6 in thick x 13 ft high x 50 lb/cf 8 in tile walls: 509 lf x 8 in thick x 13 ft high x 60 lb/cf 12 in tile walls: 249 lf x 12 in thick x 13 ft high x 90 lb/cf
	Precast parking curbs	1.5	12 ea x 245 lb/ea
<b>Total Concrete: 2,441.0 tons</b>			
Asphalt	Front parking area	115.5	4,778 ft <sup>2</sup> x 4 in thick
	Rear parking area	273.1	11,300 ft <sup>2</sup> x 4 in thick
<b>Total Asphalt: 388.6 tons</b>			
Stone/rocks	Retaining wall	63.7	170 lf x 2 ft high x 2 ft wide x 187.2 lb/cf
	Curb wall	140.0	374 lf x 2 ft high x 2 ft wide x 187.2 lb/cf
	Front buttress	33.7	(12 ft high x 3 ft wide x 5 ft long)/ea x 2 ea x 187.2 lb/cf
<b>Total Rocks: 237.4 tons</b>			
Steel	Foundation rebar	93.3	#10 rebar: 34,800 lf x 4.3 lb/ft #6 rebar: 24,480 lf x 1.5 lb/ft
	Rolling steel doors	0.4	13.75 ft high x 12.2 ft wide x 5 lb/ft <sup>2</sup>
	Roof purlins	3.5	1,727 lf x 4 lb/ft
	Sag rods	0.4	303 lf x 2.67 lb/ft

Material	Estimated Quantity (tons)		Estimation Assumptions
Steel (cont'd)	Piping	1.3	3/4": 260.6 lf x 1.1 lb/ft 1 in diameter: 176.3 lf x 1.7 lb/ft 1.5 in diameter: 51.7 lf x 2.7 lb/ft 2 in diameter: 101.8 lf x 3.7 lb/ft 2.5 in diameter: 79 lf x 5.8 lb/ft 3 in diameter: 66.1 lf x 7.6 lb/ft 4 in diameter: 42.5 lf x 10.8 lb/ft
	Gutter downspouts	0.4	Assume 3 in diameter: (6 ea x 15 lf/ea + 2 ea x 12 lf/ea) x 7.6 lb/ft
	Flag pole	0.1	20 ft x 7.5 lb/ft
	<b>Total Steel: 99.4 tons</b>		
Aluminum	Gutters	0.2	775 lf x 0.38 lb/ft
	Window frames	0.1	30 ea x 5 lb/ea
	<b>Total Aluminum: 0.3 tons</b>		
Wood	Rafters	10.7	4 in x 10 in x 2,209 lf x 35 lb/cf
	Sheathing	2.0	700 sf x 2 in thick x 35 lb/cf
	<b>Total Wood: 12.7 tons</b>		

Total potential tonnage of materials that could be diverted for recycling and reuse: **3,179 tons**

Note: The quantities of materials presented in this table were roughly estimated based on the engineering drawings for the site: One-Unit Armory for the Hawaii National Guard (DAGS 1961). Actual quantities of materials present may differ from these estimates.

cf cubic feet  
ea each  
in inch  
lb pound

**Table 6-3: Types and Quantities of Potentially Recyclable Building Materials in Building 304**

Material	Estimated Quantity (tons)		Estimation Assumptions
Concrete	Foundation slabs	358.8	East side of building: 6 in thick x 8,900 sf x 150 lb/cf West side of building: 8 in thick x 500 sf x 150 lb/cf
	Concrete apron	19.7	500 ft <sup>2</sup> x 7 in thick x 150 lb/cf
	Grease rack	54.0	Slab: 830 ft <sup>2</sup> x 4 in thick x 150 lb/cf Ramps: 120 lf x 3 ft wide x 2 ft thick x 150 lb/cf
	Front sidewalk	3.5	140 ft <sup>2</sup> x 4 in thick x 150 lb/cf
	Vault ceiling	8.4	225 ft <sup>2</sup> x 6 in thick x 150 lb/cf
	Foundation footings	10.5	35 ea x 4 cf/ea (each footing is 4 ft <sup>2</sup> x 1 ft high) x 150 lb/cf
	Gutter splash blocks	0.1	6 ea x 31 lb/ea
	Hollow tile walls	315.6	8 in tile walls: 502 lf x 8 in thick x 13 ft high x 60 lb/cf
	Fire wall in Building B	59.8	92 lf x 8 in thick x 150 lb/cf
	Reinforced concrete pipe	169.3	12 in diameter: 52.8 lf x 93 lb/ft 42 in diameter: 411.5 lf x 811 lb/ft
<b>Total Concrete: 837.2 tons</b>			
Asphalt	Front parking area	352.0	14,570 ft <sup>2</sup> x 4 in thick
	Rear parking area	1,154.0	47,740 ft <sup>2</sup> x 4 in thick
<b>Total Asphalt: 1,506.0 tons</b>			
Stone/rocks	Retaining wall	196.0	410 lf x 2.55 ft high x 2 ft wide x 187.2 lb/cf
<b>Total Rocks: 196.0 tons</b>			

Material	Estimated Quantity (tons)		Estimation Assumptions
Steel	Foundation rebar	50.2	#10 rebar: 23,348 lf x 4.3 lb/ft
	Rolling steel doors	21.0	21 ea x 400 ft <sup>2</sup> /ea x 5 lb/sf
	Structural I-beams	56.3	6 in beams: 1,710 lf x 17.3 lb/ft 12 in beams: 1,550 lf x 50 lb/ft 18 in beams: 75.8 lf x 70 lb/ft
	Fencing	1.3	1,000 lf x 2.65 lb/ft (assume 11 gauge and 6 ft high)
	Steel siding	2.9	5,805 sf x 1.0 lb/sf
	Piping	1.9	¾ in diameter: 471.7 lf x 1.1 lb/ft 1 in diameter: 211.2 lf x 1.7 lb/ft 1.25 in diameter: 267 lf x 2.3 lb/ft 2 in diameter: 147.8 lf x 3.7 lb/ft 2.5 in diameter: 92.3 lf x 5.8 lb/ft 4 in diameter: 112.5 lf x 10.8 lb/ft
	Gutters	0.2	690 lf x 0.5 lb/ft
	Downspouts	0.9	Assume 3 in diameter: 20 ea x 15 lf/ea x 7.6 lb/ft
	Doors	1.3	24/ea x 26.5 ft <sup>2</sup> x 4 lb/ft <sup>2</sup>
	<b>Total Steel: 136 tons</b>		

Total potential tonnage of materials that could be diverted for recycling and reuse: **2,673 tons**

Note: The quantities of materials presented in this table were roughly estimated based on the engineering drawings for the site: One-Unit Armory for the Hawaii National Guard (DAGS 1961). Actual quantities of materials present may differ from these estimates.

cf cubic feet  
ea each  
in inch  
lb pound

### 6.2.1 Concrete, Asphalt, and Rocks

Concrete, asphalt, and rock recycling vendors on Oahu typically crush the material to resell to contractors as aggregate for use in roadway and other construction projects.

#### 6.2.1.1 ACCEPTANCE CRITERIA

Table 6-4 presents the acceptance criteria for concrete, asphalt, and rock for each facility.

**Table 6-4: Concrete, Asphalt, and Rock Acceptance Criteria**

Vendor	Material Accepted	Criteria for Acceptance
Grace Pacific LLC	Concrete and asphalt	Concrete must be free of rebar and any paint must have a lead concentration less than 1 mg/cm <sup>2</sup> or 0.5 % by weight (i.e., LBP). Asphalt and concrete pieces greater than 2'x2'x1' incurs an additional fee.
PVT Land Co. Ltd.	Concrete and rocks	Concrete coated with LBP will not be accepted. Rebar is allowed in concrete. PVT crushes the concrete and removes it for metals recycling.
Tajiri Lumber Ltd.	Concrete	Rebar can be left in concrete. All paint, regardless of lead concentration, must be removed.
West Oahu Aggregate Co.	Concrete, asphalt, rocks	Concrete with rebar is accepted; however, an additional charge may be issued if the load is deemed to contain excessive amounts of rebar. Concrete coated with LBP will not be accepted.

Notes: All facilities were contacted on May 8, 2015.



As shown in Table 6-4, most facilities will accept concrete with some embedded rebar. Depending on the facility, loads evaluated to contain excessive amounts of rebar may be charged an additional handling fee.

All concrete facilities require LBP to be abated from all affected surfaces prior to disposal.

#### 6.2.1.2 ESTIMATED COSTS

Depending on the type of vehicle being used to transport the material (e.g., flatbed truck, tandem, or semi), the disposal fee for recyclable concrete, asphalt, and rock was found to currently vary from \$8 to \$45 per ton.

### 6.2.2 Metals

Scrap metal is the material most likely to provide significant revenue streams. Scrap metal is generally categorized into two categories: ferrous and non-ferrous. Ferrous metals contain iron (i.e., steel), while non-ferrous metals do not (i.e., copper, brass, aluminum, and lead). Most metal recycling vendors on Oahu accept both ferrous and non-ferrous metals.

#### 6.2.2.1 ACCEPTANCE CRITERIA

Table 6-5 presents the acceptance criteria for ferrous and non-ferrous metals for each facility.

**Table 6-5: Scrap Metal Acceptance Criteria**

Vendor	Material Accepted	Criteria for Acceptance	\$/Ton Paid <sup>a</sup>
Island Recycling	Ferrous and non-ferrous metals	All material must be remediated of LBP prior to acceptance. A sort fee will be charged for the disposal of concrete attached to rebar. Commingled scrap metal will be bought for a lower price than source-separated loads.	Information not provided.
Okuda Metals Inc.	Non-ferrous metals	LBP-coated materials are accepted without a price reduction. Materials are preferred to be mostly clean of contaminants (i.e., no nails, screws, or tar) prior to acceptance.	\$0.20/lb – non-magnetic stainless steel \$0.05/lb – sinks \$0.30/lb – aluminum siding \$0.20 – copper
Lenox Metals	Ferrous and non-ferrous metals	— <sup>b</sup>	— <sup>b</sup>
PVT Land Co. Ltd.	Ferrous and non-ferrous metals	Metals do not need to be source-separated prior to drop-off. PVT uses magnetic separators to remove metals during processing of C&D debris.	\$45/ton fee
Schnitzer Steel	Ferrous and non-ferrous metals	LBP coated materials are accepted without a price reduction. Higher prices will be paid for metal that has been pre-processed (i.e., cutting into 3 ft maximum sections). Metal must be source-separated for acceptance.	\$0.02/lb – light iron, unprepared metal (i.e., I-beams, rebar) \$0.03/lb – light iron, prepared (cut into pieces 3 ft and smaller) \$0.35/lb – aluminum, clean without any attachments \$0.05-\$2.20/lb – copper, varies based on grade

Notes: All facilities were contacted on May 7 and 8, 2015.

<sup>a</sup> Revenue can be generated by the sale of metals, with the exception of PVT Land Co.

<sup>b</sup> Lenox Metals did not return requests for additional information.

Unlike other types of C&D materials, most metals recycling facilities will buy scrap metal from generators. In order to maximize the revenue generated from the sale of scrap metal, some

processing of the metal prior to delivery to the recycling facility is recommended. As noted in Table 6-5, the types of processing varies depending on the facility, and includes source-separating different types of metals, removal of LBP, cutting the metal into smaller pieces, and the removal of non-metal contaminants (i.e., concrete and tar). PVT Land Co. Ltd. does not require source-separation of different types of metals; however, PVT charges, rather than pays, for the disposal of metals.

#### 6.2.2.2 ESTIMATED COSTS

In general, scrap metal recyclers in Hawaii broker the metals that they collect to firms on the mainland United States or Asia, which then process the metal into reusable forms. Because the revenues vary, and prices can be volatile, the most economical option would be to choose a mix of vendors at the time of demolition. As of May 7 and 8, 2015, the quoted metals prices were:

- *Steel*: \$0.02-\$0.03/lb
- *Aluminum*: \$0.20-\$0.35/lb
- *Non-magnetic stainless steel*: \$0.20/lb
- *Copper wiring*: \$0.05-\$2.20/lb

#### 6.2.3 Wood and Plastics

Currently, PVT Land Co. Ltd. and Reuse Hawaii are the primary facilities that accept wood and plastic debris from building demolition projects. PVT Land Co. Ltd. uses a mechanical sorting device that grinds and shreds the material into feedstock, which is stored onsite for potential future waste-to-energy gasification projects, but charges a tipping fee for disposal. As discussed in Section 6.1, Reuse Hawaii will dismantle the structure by hand, salvaging materials that may be recycled or reused.

##### 6.2.3.1 ACCEPTANCE CRITERIA

Recyclable materials put through the mechanical sorting device at PVT must be free of LBP and asbestos. Any materials containing LBP and asbestos will be diverted to the landfill prior to passage through the recycling sorter.

Reuse Hawaii will require that any asbestos or LBP be abated prior to acceptance by their facility.

##### 6.2.3.2 ESTIMATED COSTS

PVT currently charges \$45 per ton for the disposal of plastics and wood, which is the same price that it charges for other types of materials (i.e., concrete and asphalt). The tipping fee is the same for materials that contain LBP and asbestos.

Reuse Hawaii will require a pre-demolition inspection of the buildings to evaluate the reusability of the building materials. The cost of the deconstruction services provided by Reuse Hawaii is highly dependent upon the findings of their initial evaluation.

#### 6.3 MATERIAL HANDLING – SOURCE SEPARATION AND HAULING

Recyclable materials are typically managed either commingled or source-separated. Source-separation involves the segregation of different recyclable materials into different containers at the job site, prior to transport offsite to the recycling facility. Commingling involves the storage and transport of all recyclable materials in a single container. Source-separation generally results in higher recycling revenues and lower disposal fees. As discussed previously, most of the contacted recycling facilities prefer materials be separated prior to drop-off and charge lower fees (or pay more) for loads that are source-separated. The disadvantages of source-separation include higher

handling, storage, and transportation costs, because multiple containers need to be rented, managed, and hauled.

Based on the types and quantities of potentially recyclable materials in Building 301, it is anticipated that roll-off containers would be used to store and transport wood debris and the different types of scrap metal that are generated by the project. Due to size and weight limitations, concrete, asphalt, and rocks would be stockpiled on the ground and then transported offsite using a tandem or semi-truck.

Many of the recycling facilities on Oahu are located on the west side of the island in Campbell Industrial Park, Nanakuli, or Waianae. Based on estimates provided by hauling contractors, the cost is anticipated to range from \$300 to \$400 per container for hauling from the Diamond Head area.

## **7.0 CONCLUSIONS AND RECOMMENDATIONS**

### **7.1 HAZARDOUS MATERIALS SURVEY**

Materials assumed, reported, or confirmed to be ACM were found in the buildings surveyed. Therefore, further action with respect to asbestos is required prior to demolition of the building. Additionally, if any building materials are encountered that are suspected to contain asbestos and were not accessible or evaluated in this survey, then those materials must be assumed to contain asbestos and must be handled appropriately, unless determined otherwise by a certified Asbestos Building Inspector. The building must not be demolished until all asbestos has been properly removed and disposed of and final clearance has been accepted.

Paint with lead, including both LBP and LCP, are present on and in the buildings surveyed. The condition of the paint ranged from poor to good. Worker and environmental protection precautions including, but not limited to, proper training, engineering controls, and monitoring is required if any LCP or LBP will be disturbed. Surrounding areas (including exposed soil, if present) must be protected during any activities that disturb paint with lead.

Other potentially hazardous materials, such as unlabeled ballasts assumed to contain PCBs, fluorescent and metal halide lights assumed to contain mercury, a smoke detector and exit signs assumed to contain radioactive sources, and HVAC and refrigeration units assumed to contain ODSs are present at the property. Proper removal, handling, shipping, and disposal of these materials are required prior to demolition of the buildings.

All materials and surfaces potentially extending below interior and exterior walls, or above ceilings and plenums, should be assumed to extend into those spaces, unless proven otherwise. Any untested paints should be assumed to be lead-based.

### **7.2 SURFACE SOIL SAMPLING**

Lead was detected in all three surface soil samples obtained at the site. One of those samples, from the DU fronting the Carpenter Shop at the CSMS-1 Building 304 complex exhibited a total lead concentration of 580 mg/kg, exceeding HDOH Tier 1 EALs for unrestricted land use, but below commercial/industrial action levels. Chlordane was also detected in all three surface soil samples, but below HDOH Tier 1 EALs for unrestricted land use.

Pre-demolition sampling of the soil surrounding buildings with exterior paint containing lead is an industry standard that these results will satisfy. The demolition contractor will be instructed to implement measures to prevent the worsening of the soil conditions are the buildings during demolition. These measures may include covering the unpaved areas with sheets of plastic and the removal of all loose and flaking paint from the exterior sheet metal prior to dismantling the buildings. Post-demolition soil sampling is recommended to demonstrate the effectiveness of the control measures implemented by the demolition contractor.

If the lead concentration in the soil around the Carpenter Shop remains below 800 mg/kg, one option is to leave the soil in place, but under a land use control, i.e., a deed restriction disallowing residential use in the impacted area. If, however, the State wants to leave the land use unrestricted upon completion of the project, a response action should be considered. For example, impacted soil could be excavated and properly disposed of offsite. The HDOH Office of Hazard Evaluation and Emergency Response should be notified of the findings and consulted prior to the finalizing the choice of response action.

AECOM also recommends further sampling of the unpaved area in the vicinity of the Carpenter Shop, past the area that has already been sampled (i.e., along the fence lines and along the edges of the pavement past the Carpenter Shop to the north and east), to confirm there are no impacts to those areas.

No further action is recommended at this time with regards to chlordane at the site.

### **7.3 OIL-WATER SEPARATOR SAMPLING**

TPH-gasoline, DRO and RRO, PAHs, barium, chromium, cadmium, and lead were detected in the water from the surge pit and oil-water separator. The presence of these constituents may affect disposal options and costs.

The sediment sample had detectable levels of TPH, PAHs, and metals, but did not exhibit hazardous waste characteristics, and was within regulatory levels for toxicity, ignitability, and corrosivity. Therefore, the sediment within the separator should be handled and disposed of as non-hazardous petroleum impacted material.

Additional sampling specific to individual disposal companies may be required prior to the acceptance of both the waste water and sediment from the oil-water separator.

### **7.4 RECYCLABLE MATERIALS SURVEY**

AECOM estimates that greater than 4,800 tons of concrete, asphalt, rocks, scrap metal, and wood from the demolition of CERFP Building 301 and the CSMS-1 Building 304 complex could be potentially recycled and diverted from landfilling. The most effective method of recyclable material management is source separation, which can result in lower disposal fees, higher revenues, and higher recycling rates; however, potential savings may be offset or outweighed by the added labor costs.

Based on a survey of local C&D recycling vendors, most facilities require that materials be abated of LBP and asbestos for acceptance, with the exception of LBP and LCP on metal components. Many facilities also require the completion and acceptance of material profile forms prior to dropping off materials, and, therefore, sufficient time should be devoted to planning and coordination prior to starting the demolition project. Although not always a requirement, source-separation of materials is preferred and can result in lower recycling fees (or higher prices for scrap metals) and lower overall project costs.

## **8.0 LIMITATIONS**

This survey was conducted to identify and sample potentially hazardous asbestos and lead building materials, lead and chlordane impacted soil, and water and sediment from the oil-water separator. A visual survey for other regulated hazardous materials was also conducted, but was limited to potential PCB, mercury containing building materials, potentially radioactive building materials, and potential ozone depleting substances (ODSs). Finally, a visual survey of building materials was also conducted as a part of a recyclable materials survey. Identification of materials of potential concern identified in the visual survey is for information only, and do not imply that a comprehensive survey (i.e. sampling) of the materials was conducted.

AECOM has made commercially reasonable efforts to locate and sample all suspect lead and ACMs. However, there are limitations inherent to physical inspections, particularly for materials located behind inaccessible areas, walls, under multiple layers of flooring, above ceilings or plenum spaces, or inside of or behind piping or equipment, electrical conduits, switchboxes, and other electrical and other utility conduits and components. It is possible that materials may exist in the surveyed building that have not been identified or evaluated.

At our client's request, destructive sampling that may compromise the integrity of spaces or structures was not conducted during this survey. This includes, but is not limited to, removing portions of walls to inspect the cavities, sampling inside of ducts, fire doors, or other equipment. In addition, some equipment was located throughout the building and may have obscured portions of the building, rendering inspection of those areas infeasible.

No attempt was made to identify whether potentially hazardous materials were included within materials in or around the buildings that were not part of, nor affixed to, the structures of the surveyed buildings. Any potentially hazardous substances present on site that were not building materials were not evaluated and should be properly analyzed, handled, and disposed of in accordance with applicable regulations if they are to be disturbed.

While AECOM has performed this survey in accordance with the standard of care typical to the trade and the applicable regulations, AECOM cannot warrant that no other potentially hazardous materials are present within the buildings or spaces surveyed. This report should, therefore, not be construed as a final statement that all hazardous materials have been identified.

Should any potentially hazardous building materials be encountered, which were not accessible or evaluated in this survey, they should be assumed to be hazardous and not be disturbed prior to evaluation by a licensed and competent inspector.

Nothing in this report should be construed as recommending for or against any response or other activities or as endorsing any construction methods, techniques, procedures, or safety methods.

No other warranty, expressed or implied, is extended.

## 9.0 CERTIFICATION

This survey was conducted to inspect the indicated buildings for the presence of ACM and paint with lead. Nothing in this report should be construed as recommending for or against any response or other activities or as endorsing any construction methods, techniques, procedures, or safety methods.

Asbestos Building Inspector and Lead Risk Assessor,



Fletcher M. Kimura, Ph.D.

HIASB-3073

PB-0429

## 10.0 REFERENCES

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## FIGURES







Project Location

CERFP Building 301

CSMS-1 Building 304 Complex

Diamond Head State Monument Visitors Center

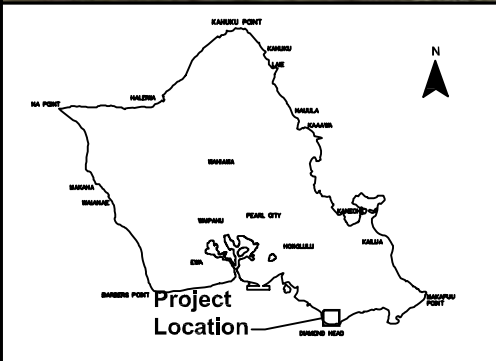
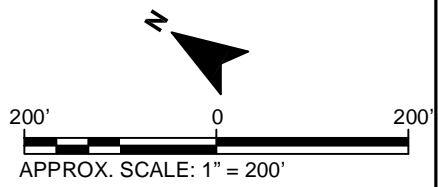


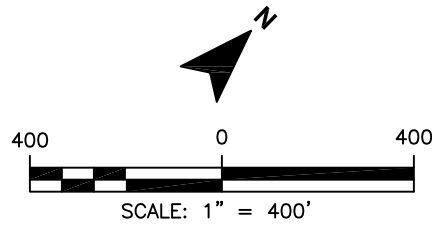
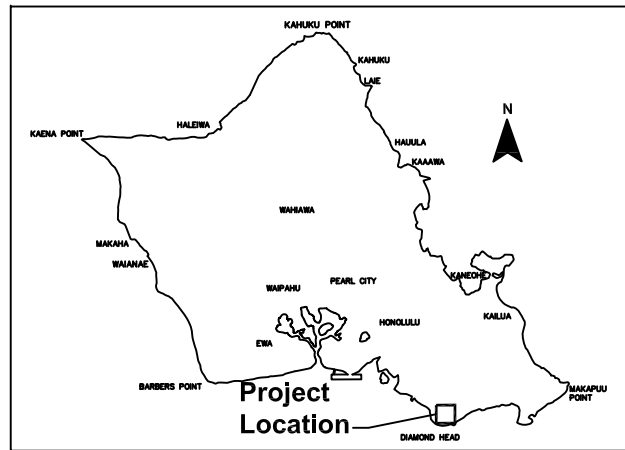
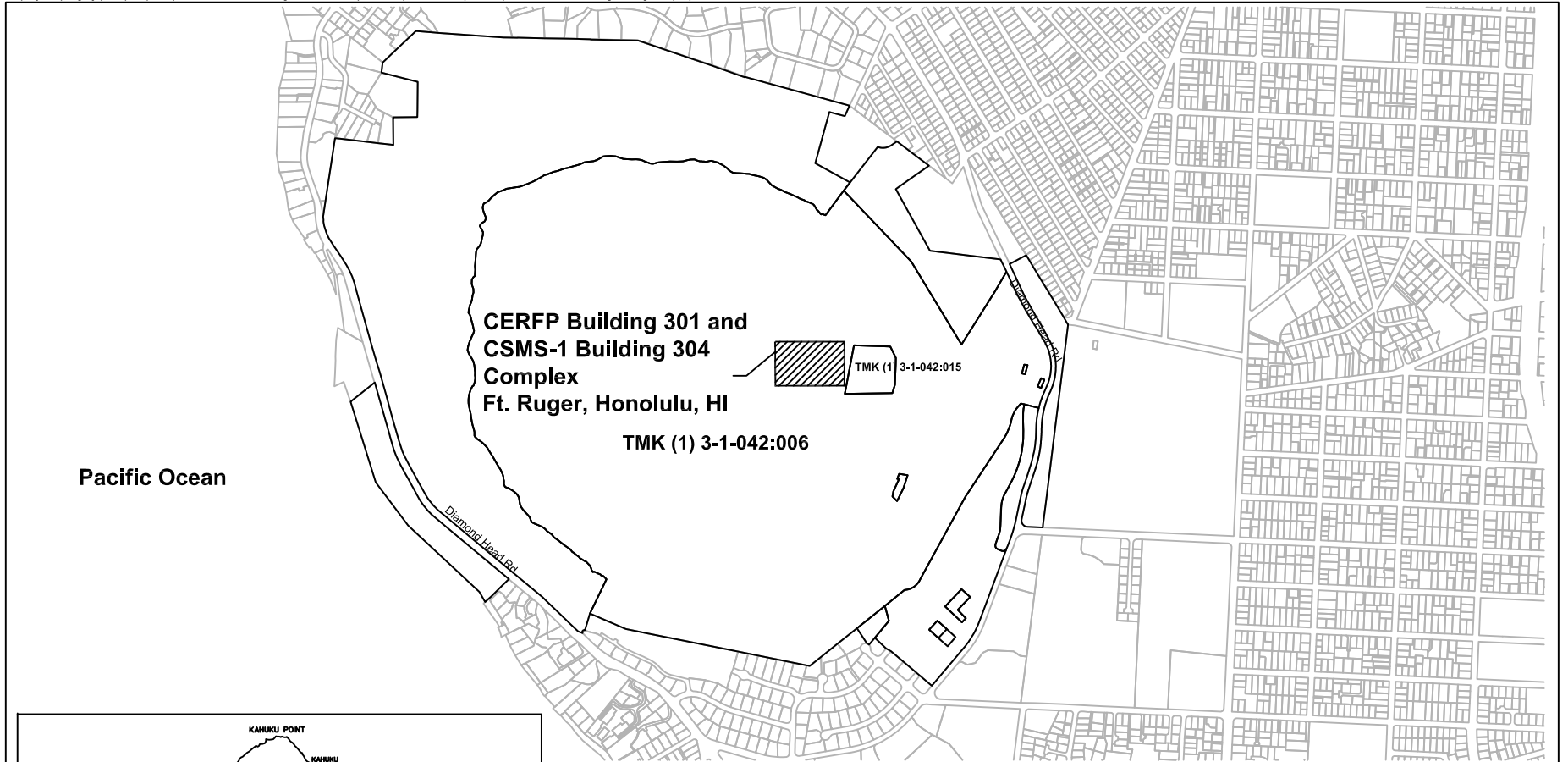
Image Source: Google Earth Pro



**Figure 0  
Site Location**

CERFP Building 301 and  
CSMS-1 Building 304 Complex  
Hazardous Materials Survey  
HIARNG, Ft. Ruger, Honolulu, HI



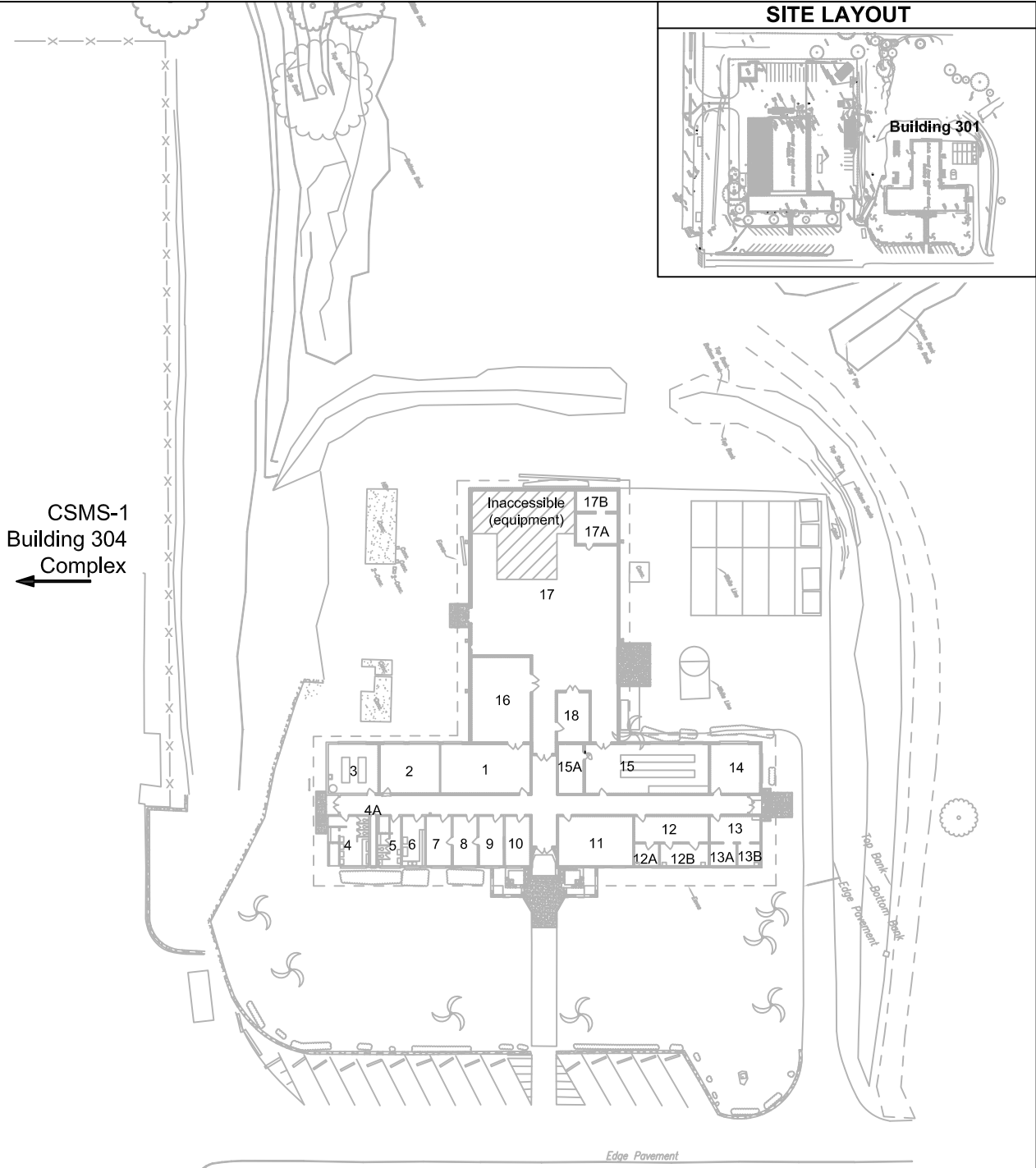


**Figure 1**  
**Site Location Map**

CERFP Building 301 and  
CSMS-1 Building 304 Complex  
Hazardous Materials Survey  
HIARNG, Ft. Ruger, Honolulu, HI



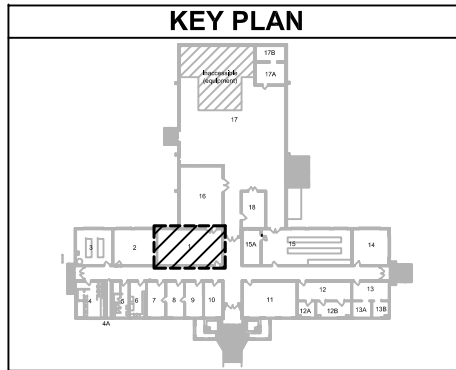
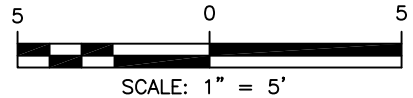
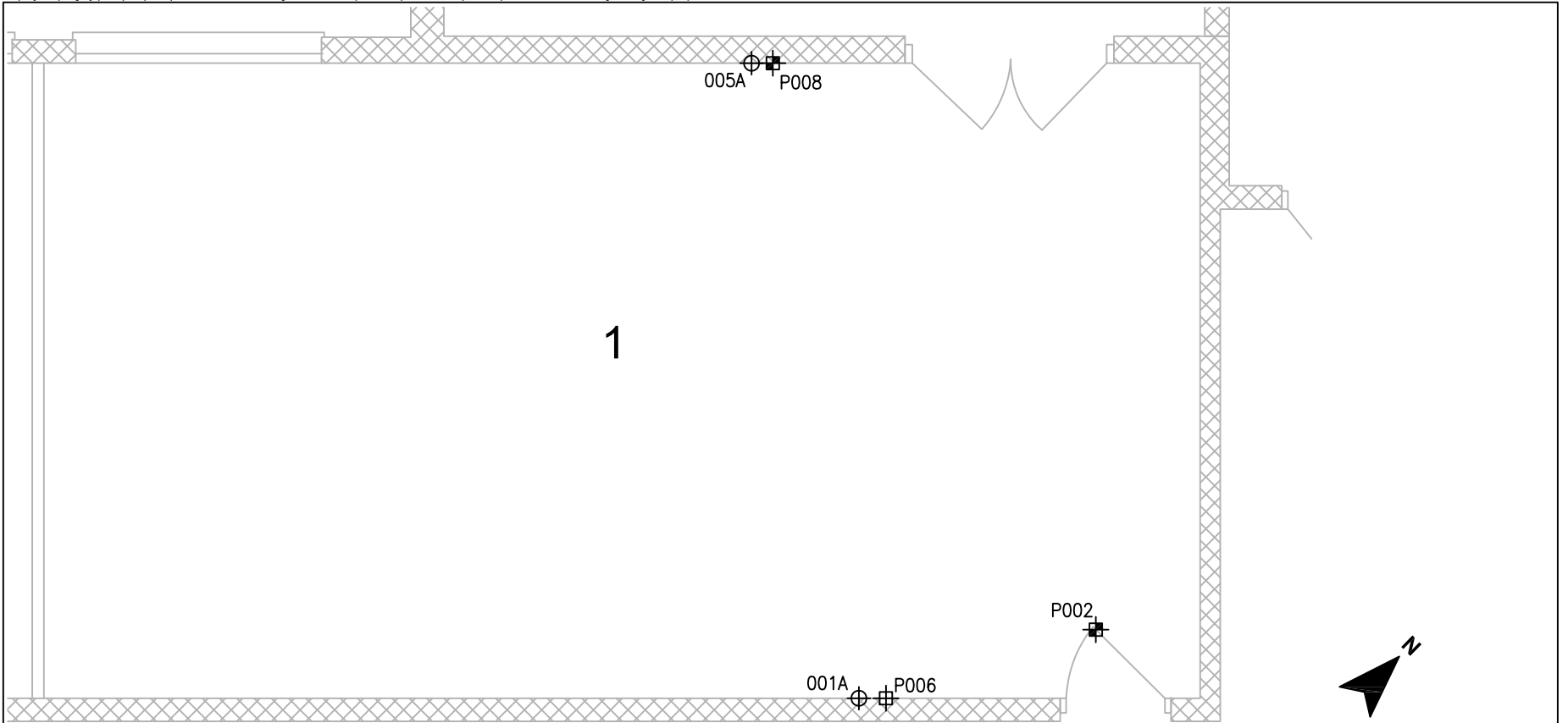
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**Figure 2**  
**Room Number Key**

CERFP Building 301  
Hazardous Materials Survey  
HIARNG, Ft. Ruger, Honolulu, HI



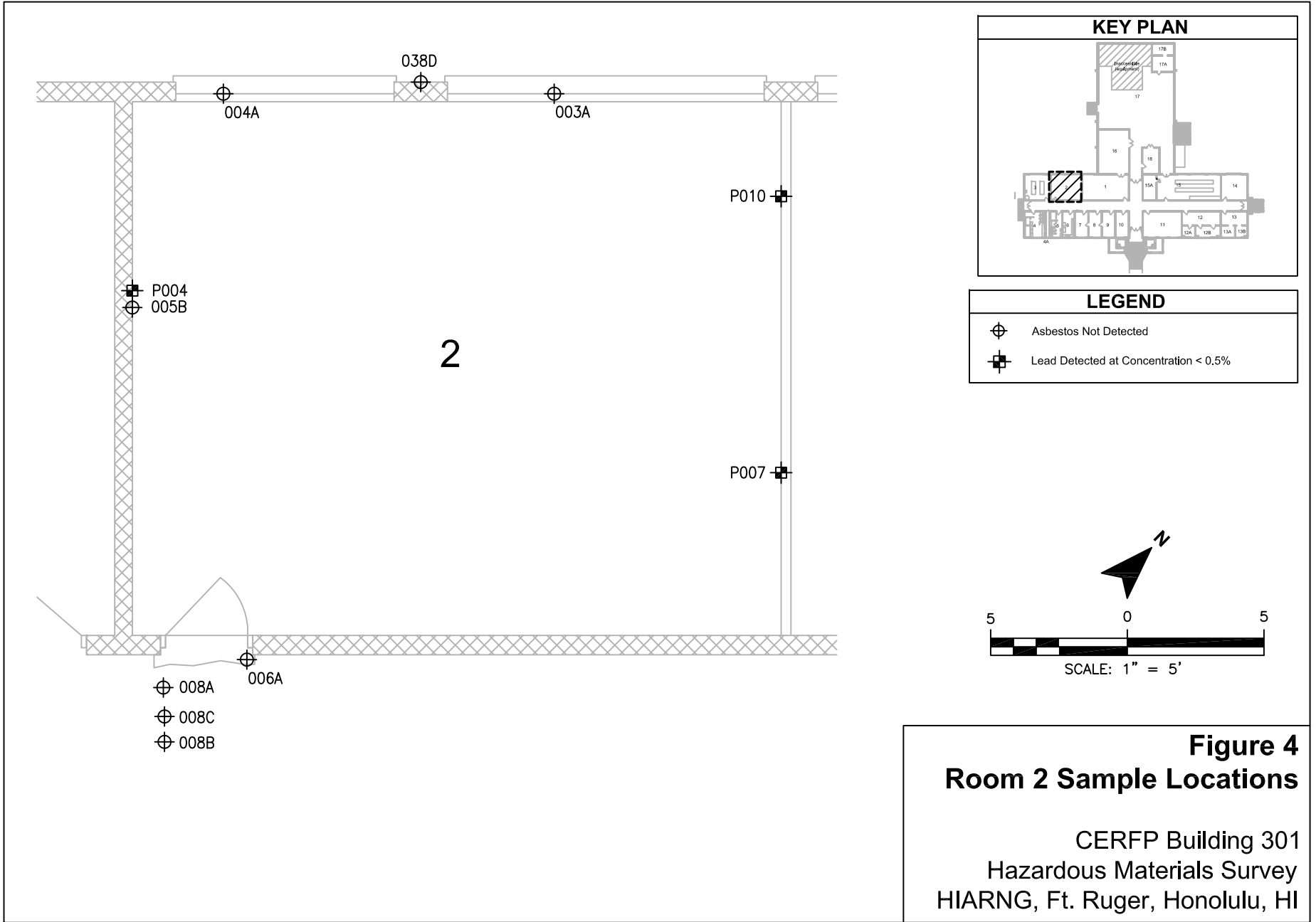


LEGEND	
	Asbestos Not Detected
	Lead Not Detected
	Lead Detected at Concentration < 0.5%

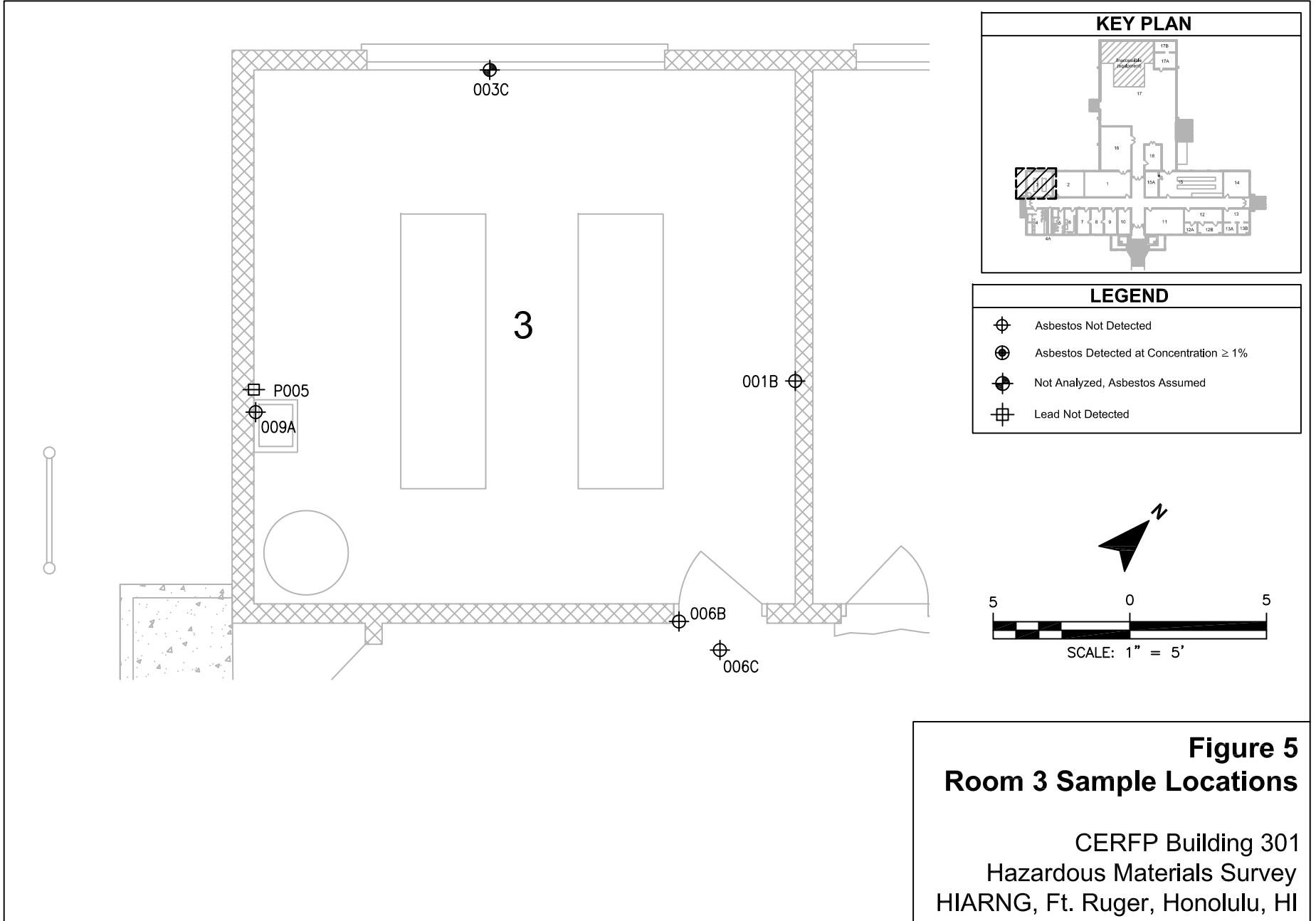
**Figure 3**  
**Room 1 Sample Locations**  
CERFP Building 301  
Hazardous Materials Survey  
HIARNG, Ft. Ruger, Honolulu, HI



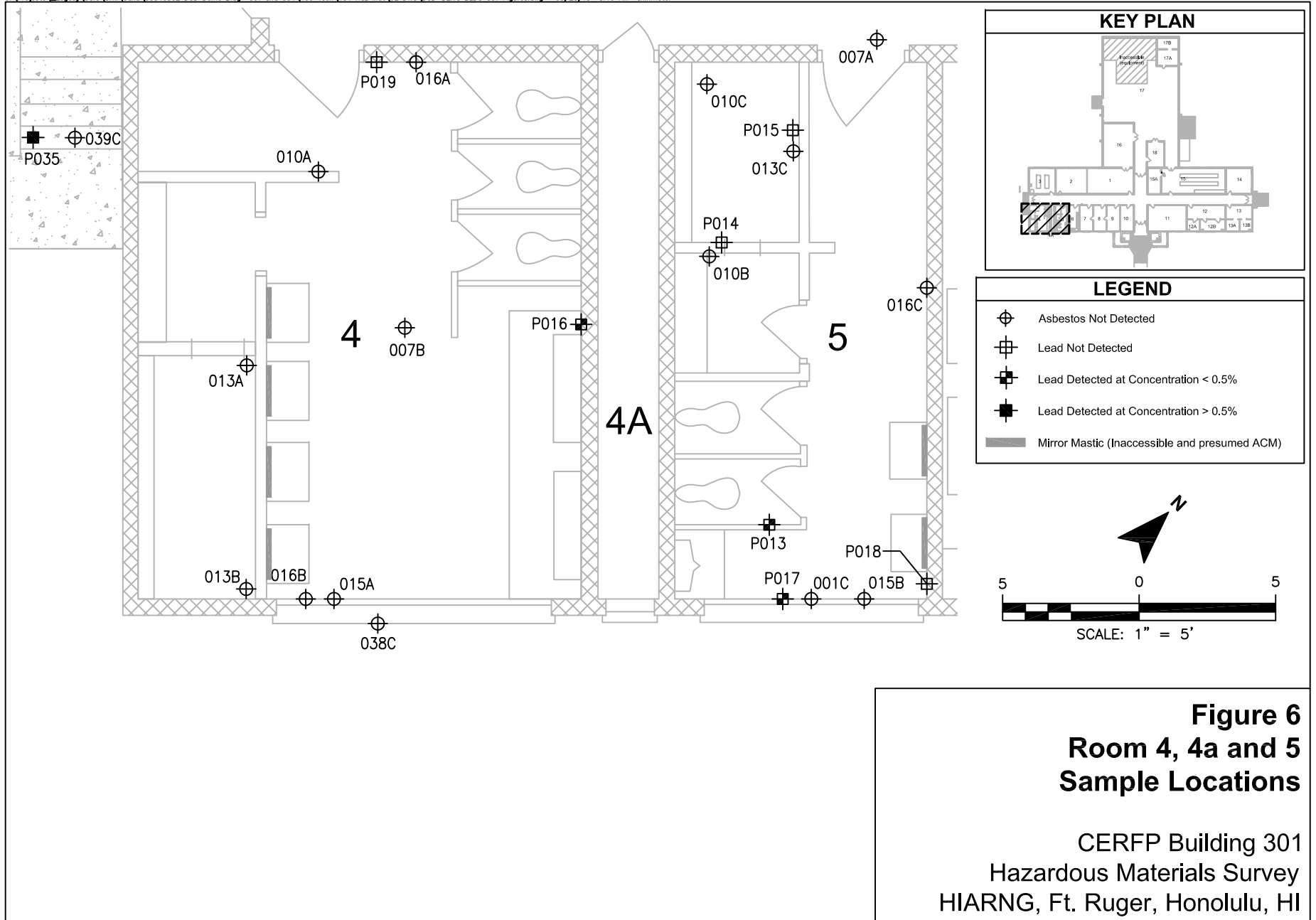




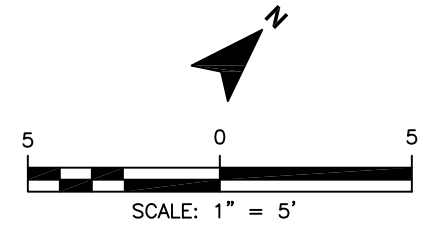
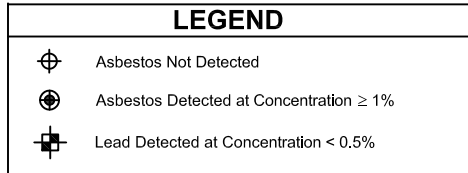
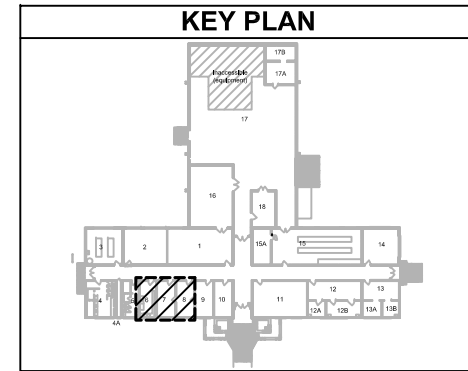
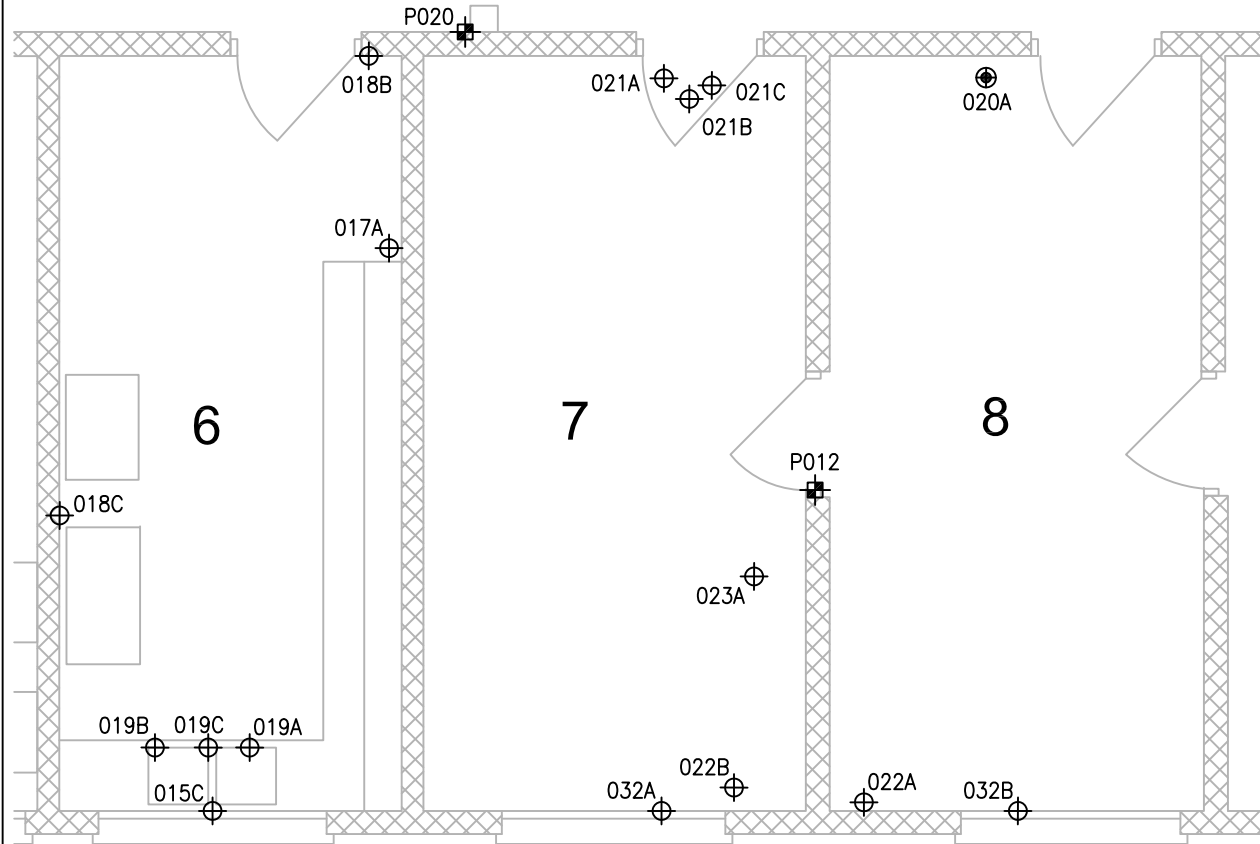








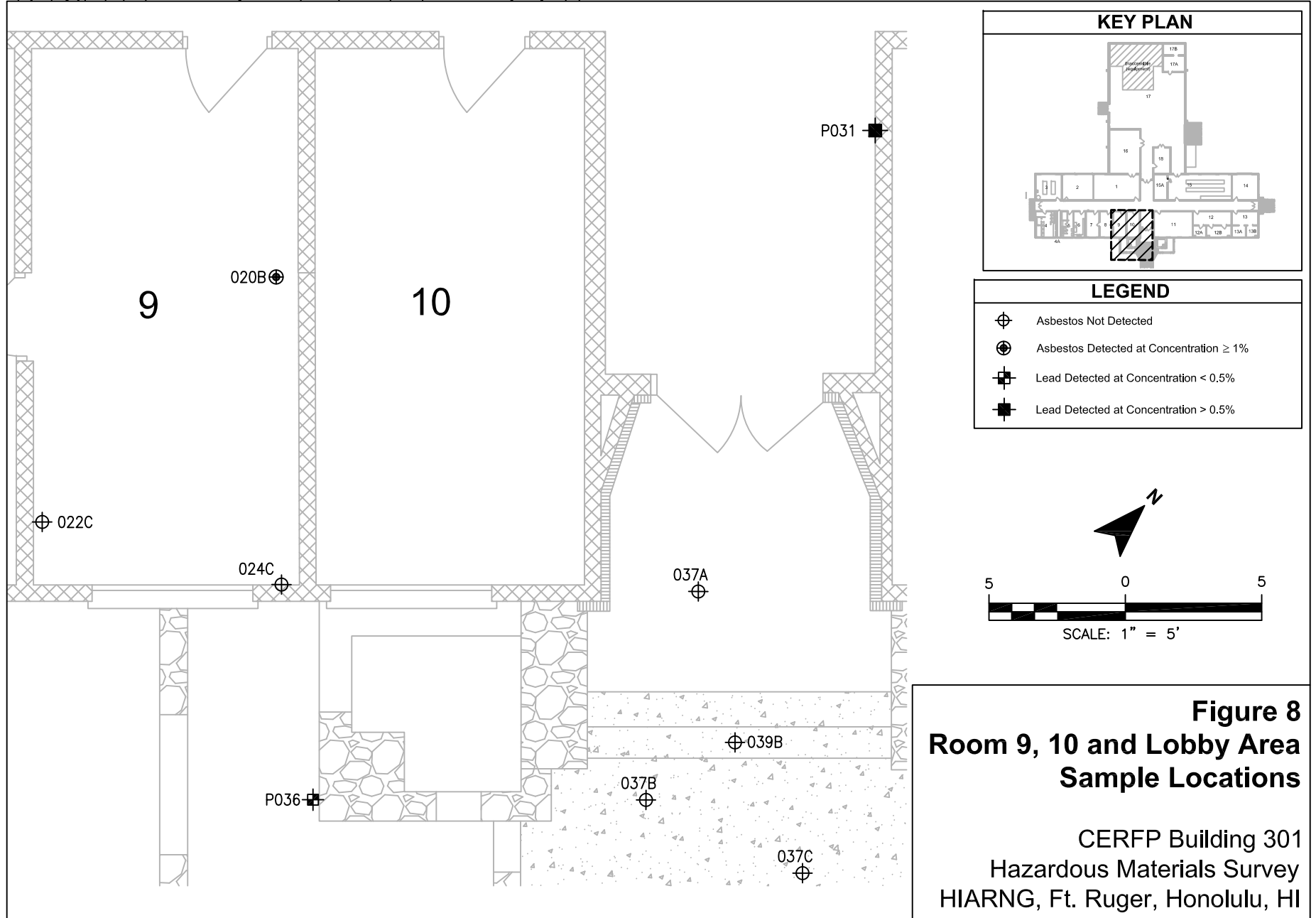




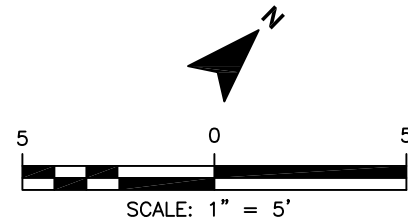
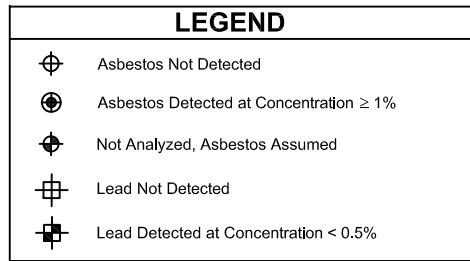
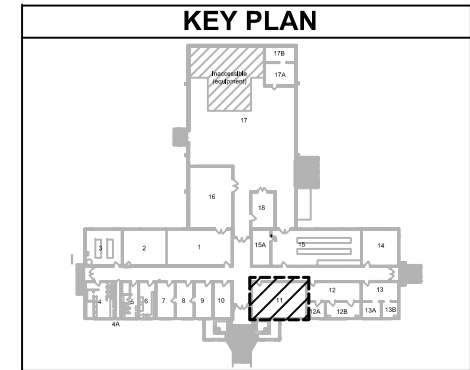
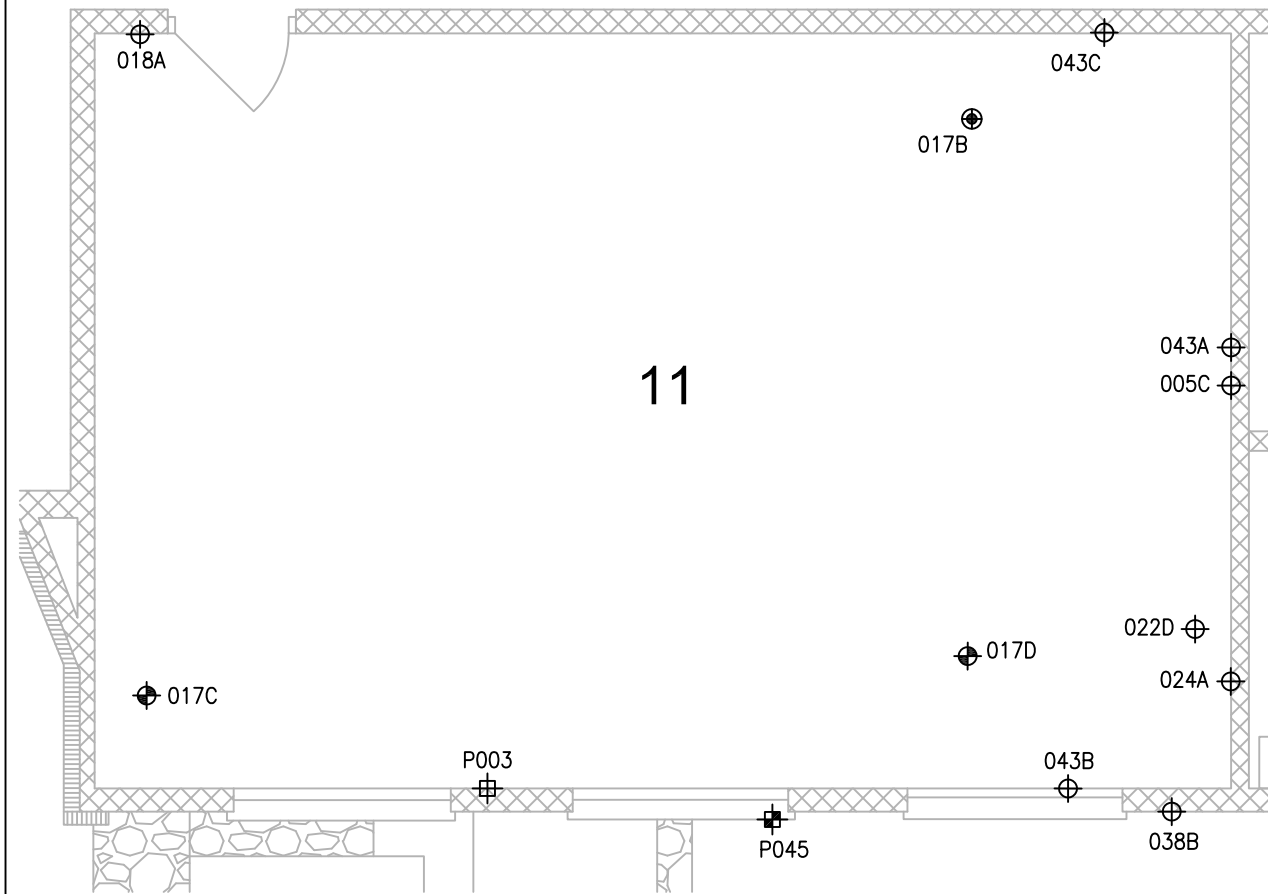
**Figure 7**  
**Room 6, 7 and 8 Sample Locations**  
CERFP Building 301  
Hazardous Materials Survey  
HIARNG, Ft. Ruger, Honolulu, HI







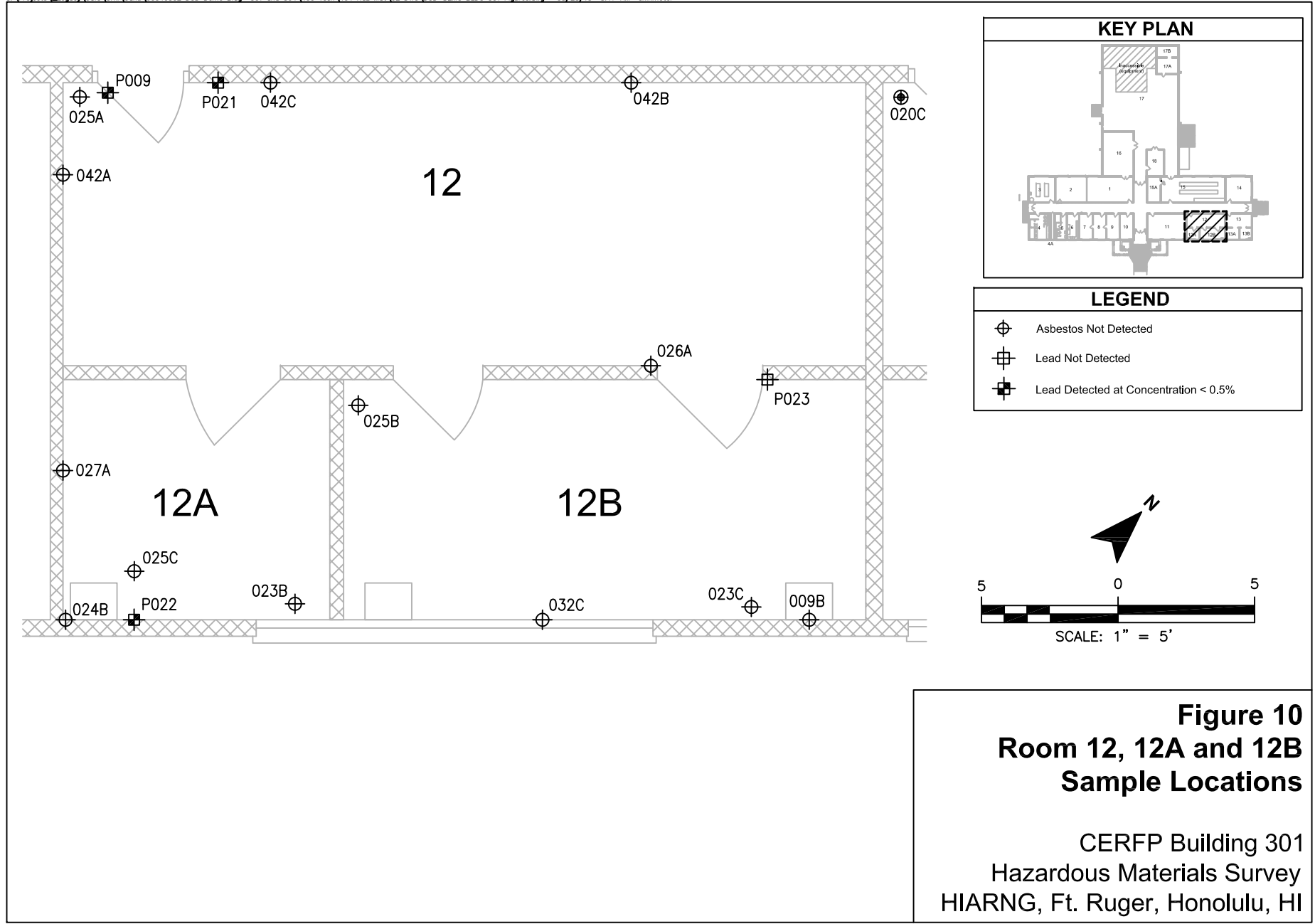




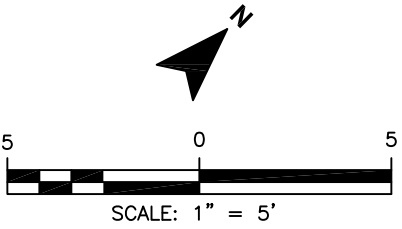
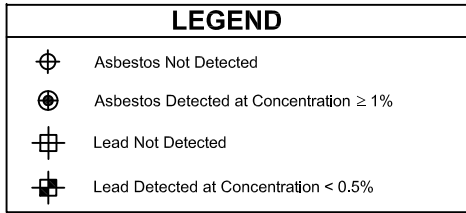
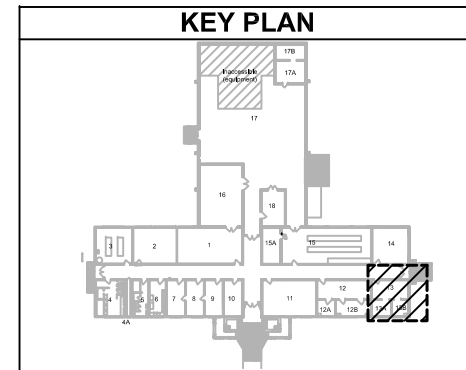
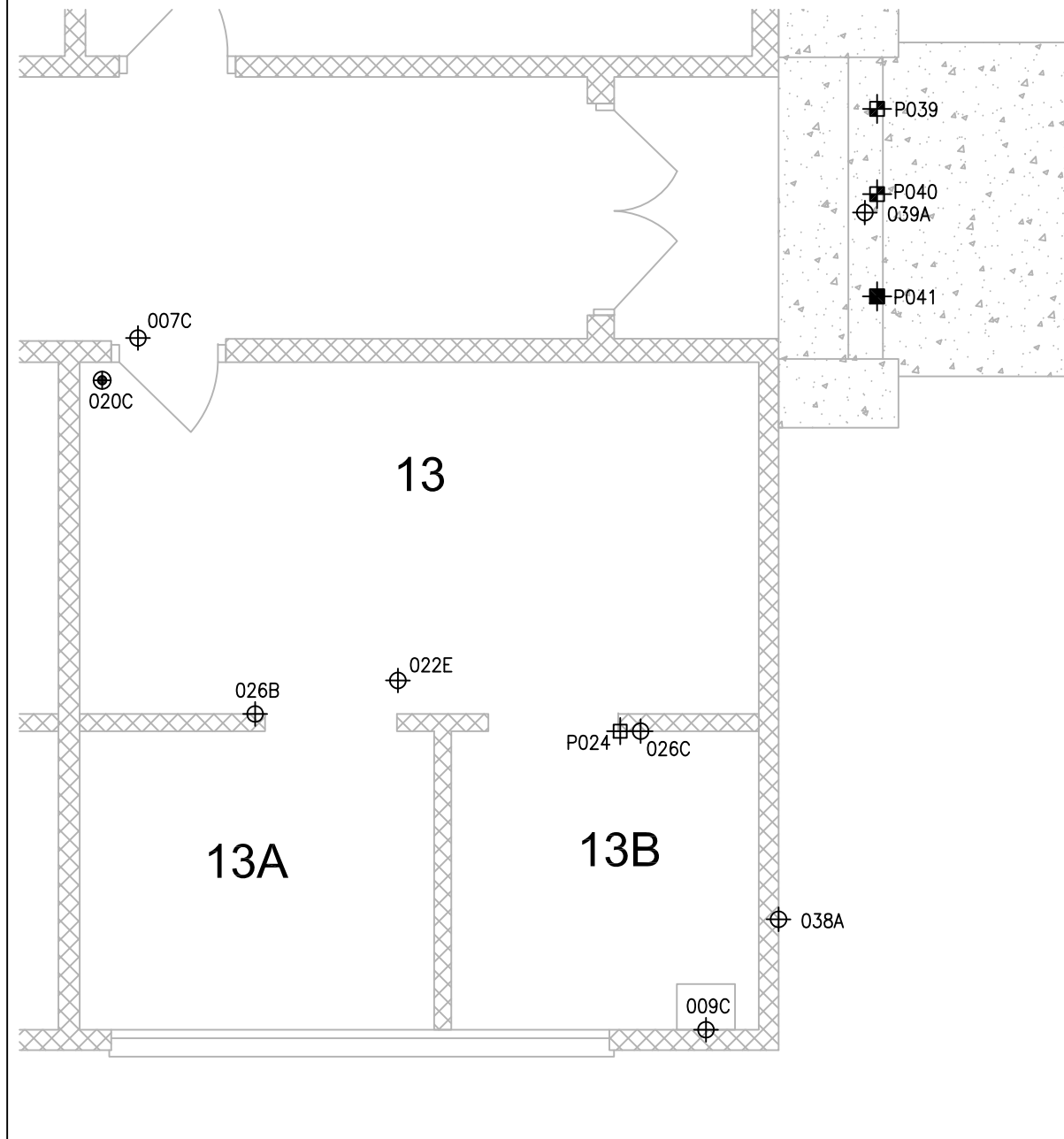
**Figure 9**  
**Room 11 Sample Locations**

CERFP Building 301  
Hazardous Materials Survey  
HIARNG, Ft. Ruger, Honolulu, HI







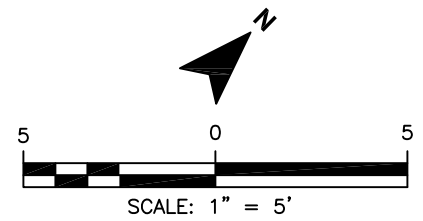
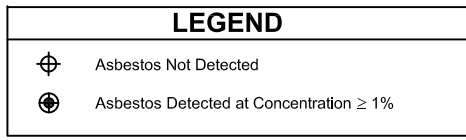
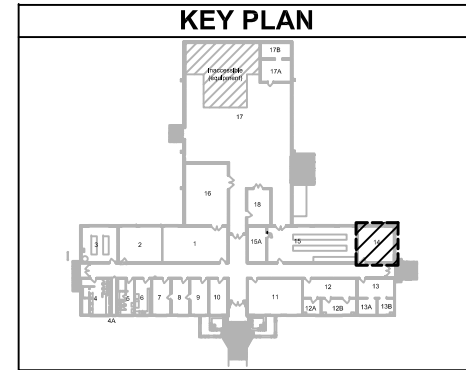
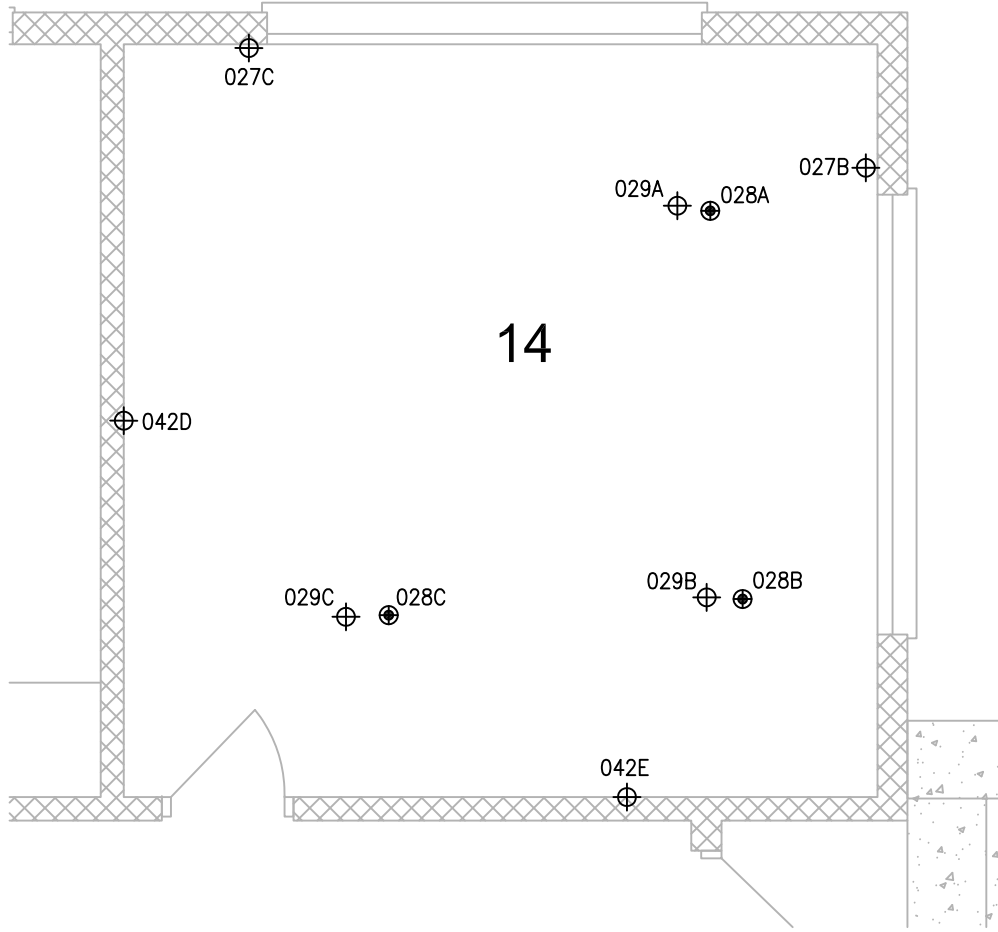


**Figure 11**  
**Room 13, 13A, 13B and**  
**Vestibule B Sample Locations**

CERFP Building 301  
 Hazardous Materials Survey  
 HIARNG, Ft. Ruger, Honolulu, HI

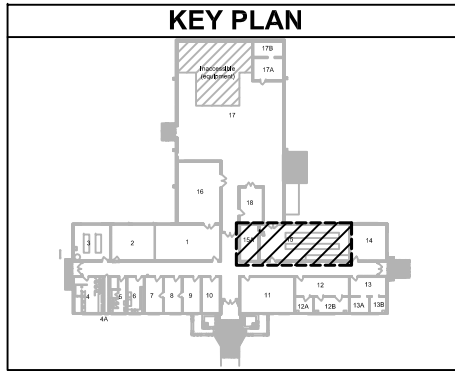
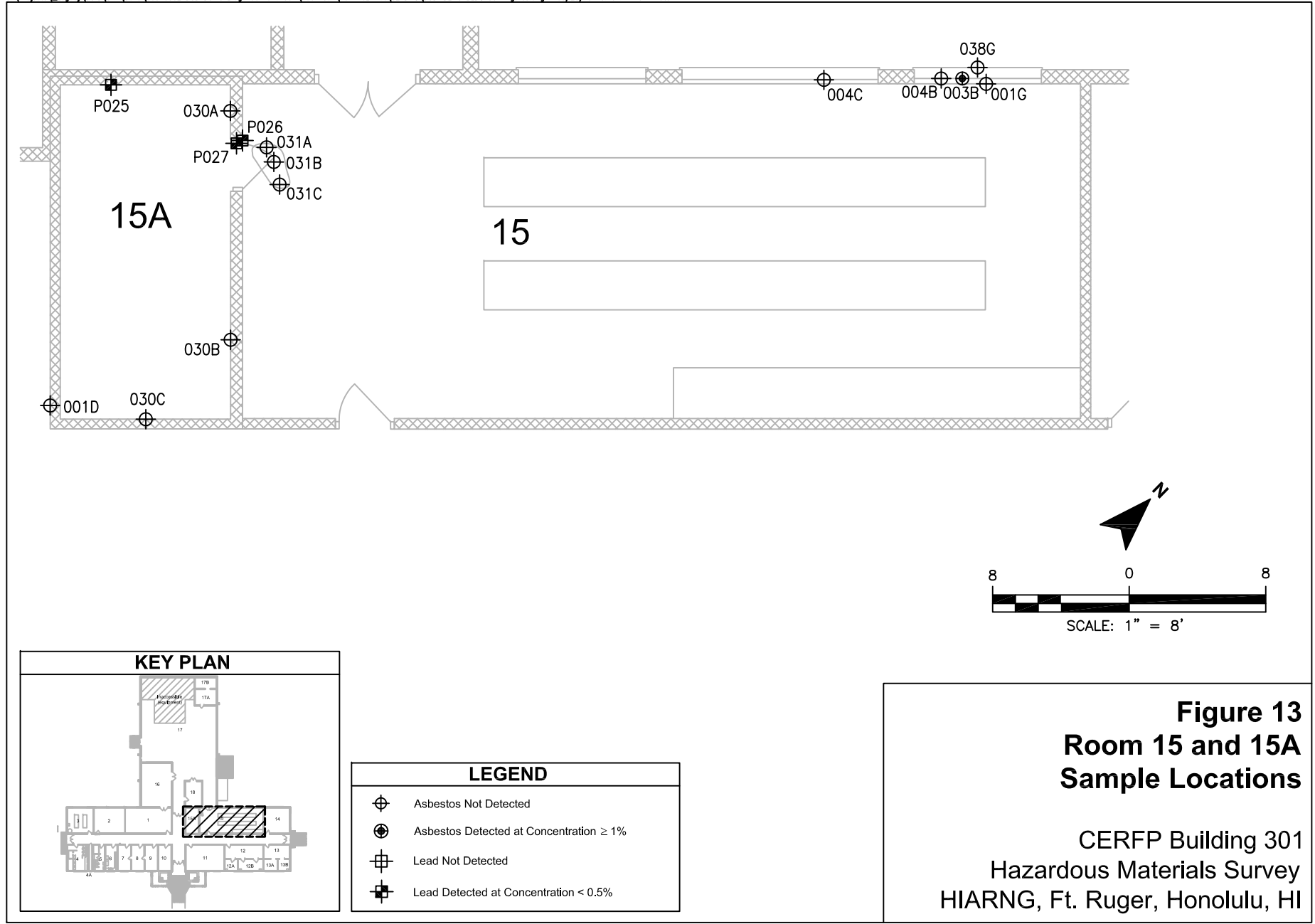






**Figure 12**  
**Room 14 Sample Locations**  
CERFP Building 301  
Hazardous Materials Survey  
HIARNG, Ft. Ruger, Honolulu, HI





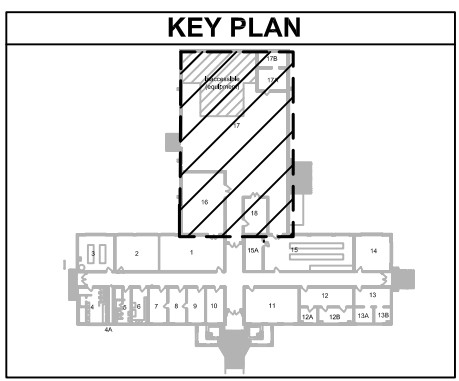
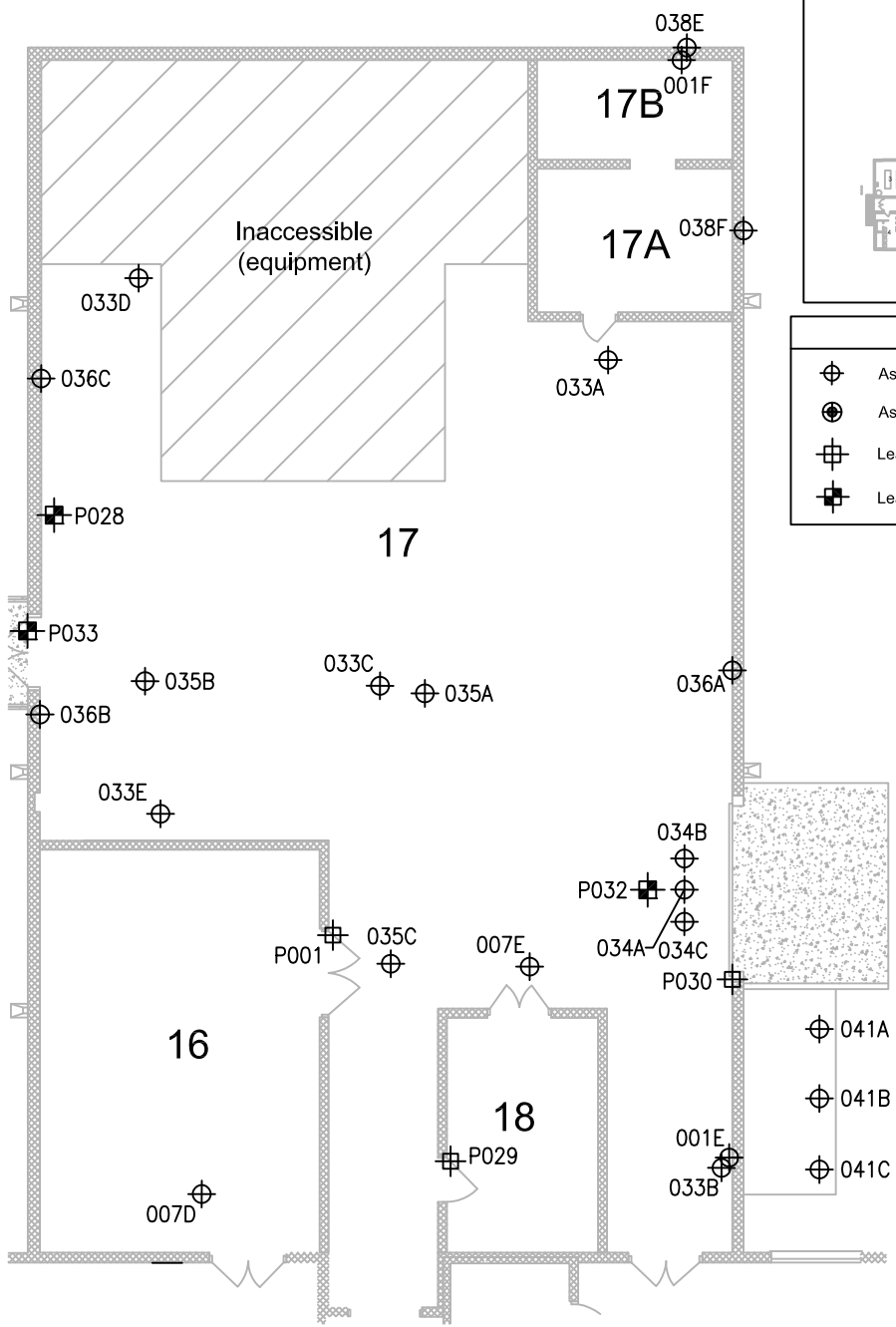
LEGEND	
	Asbestos Not Detected
	Asbestos Detected at Concentration $\geq 1\%$
	Lead Not Detected
	Lead Detected at Concentration $< 0.5\%$

**Figure 13**  
**Room 15 and 15A**  
**Sample Locations**

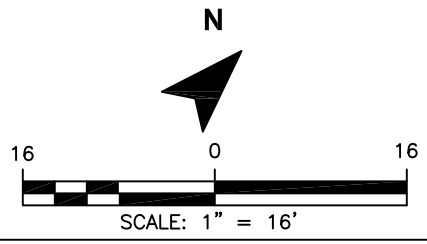
CERFP Building 301  
 Hazardous Materials Survey  
 HIARNG, Ft. Ruger, Honolulu, HI



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LEGEND	
⊕	Asbestos Not Detected
⊗	Asbestos Detected at Concentration ≥ 1%
⊞	Lead Not Detected
⊠	Lead Detected at Concentration < 0.5%

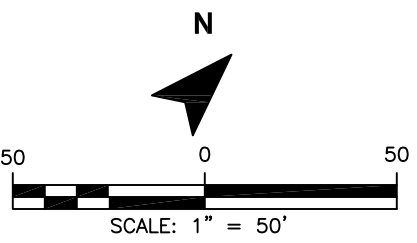
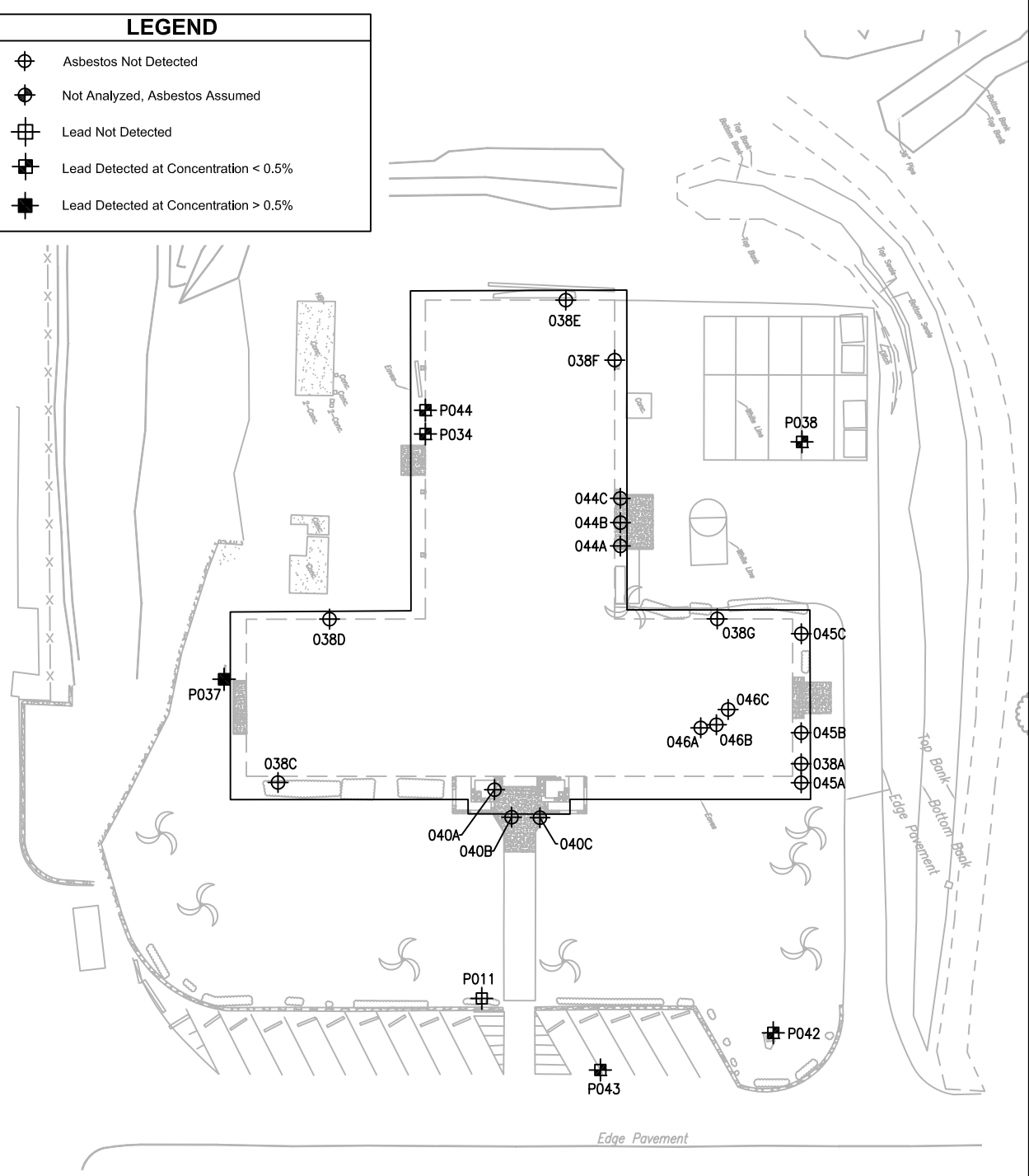


**Figure 14**  
**Room 16, 17, 17A, 17B and 18**  
**Sample Locations**

CERFP Building 301  
Hazardous Materials Survey  
HIARNG, Ft. Ruger, Honolulu, HI



LEGEND	
	Asbestos Not Detected
	Not Analyzed, Asbestos Assumed
	Lead Not Detected
	Lead Detected at Concentration < 0.5%
	Lead Detected at Concentration > 0.5%

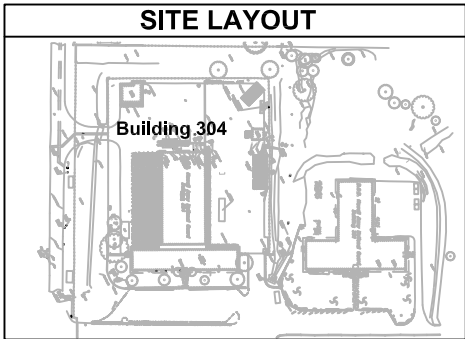
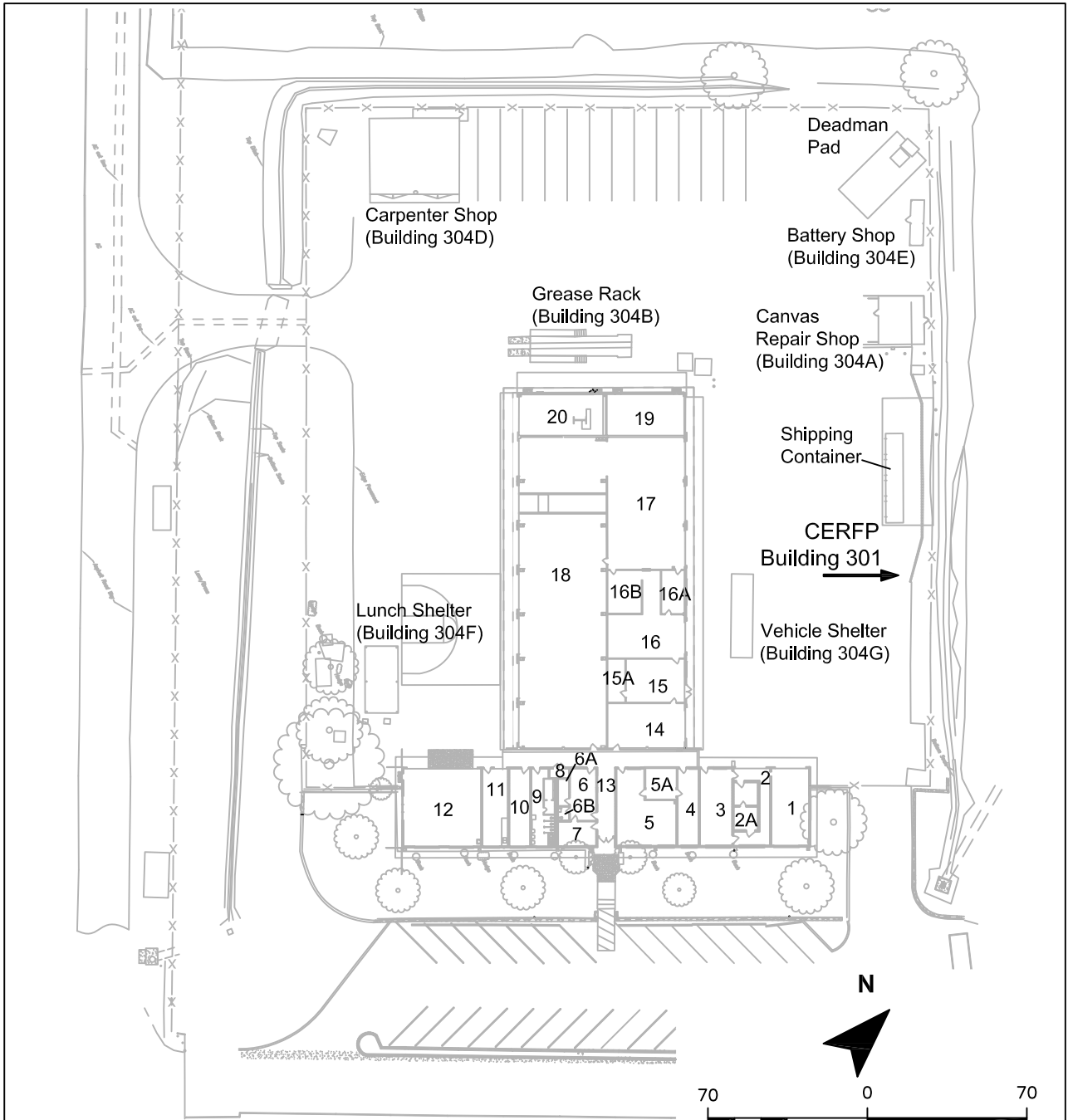


**Figure 15**  
**Roof and Exterior Sample Locations**  
 CERFP Building 301  
 Hazardous Materials Survey  
 HIARNG, Ft. Ruger, Honolulu, HI

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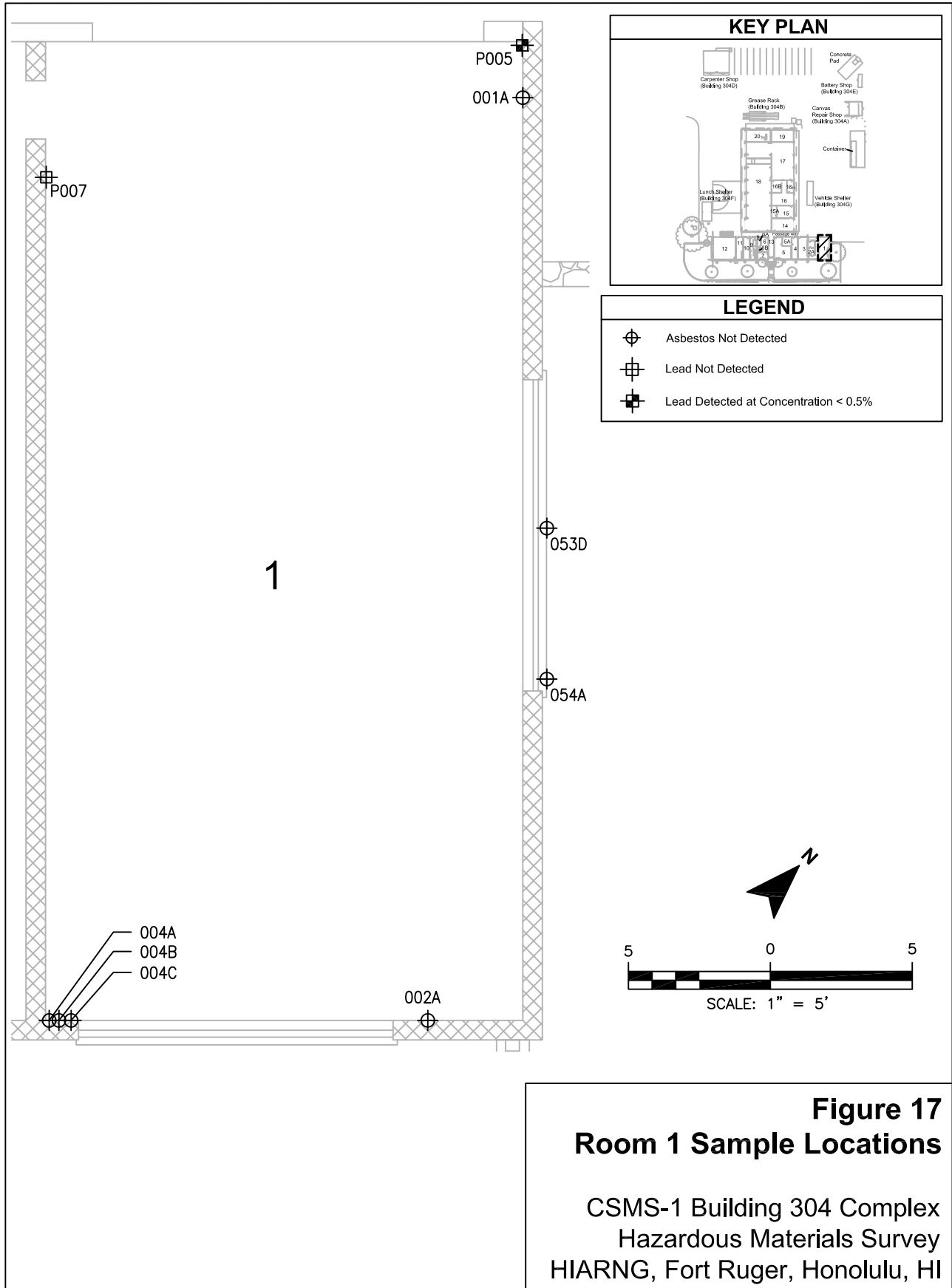




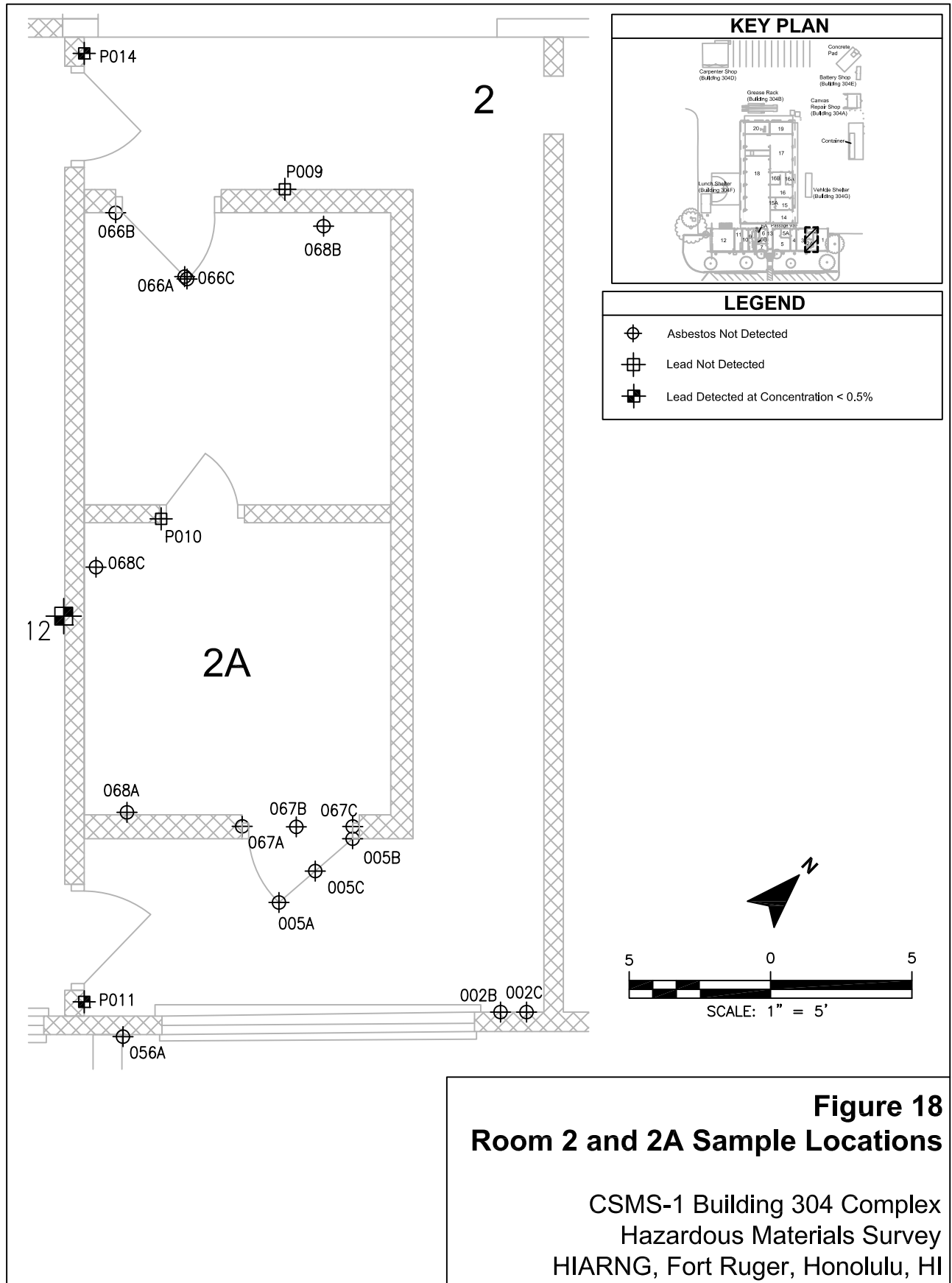


**Figure 16**  
**Room Number Key**  
 CSMS-1 Building 304 Complex  
 Hazardous Materials Survey  
 HIARNG, Fort Ruger, Honolulu, HI

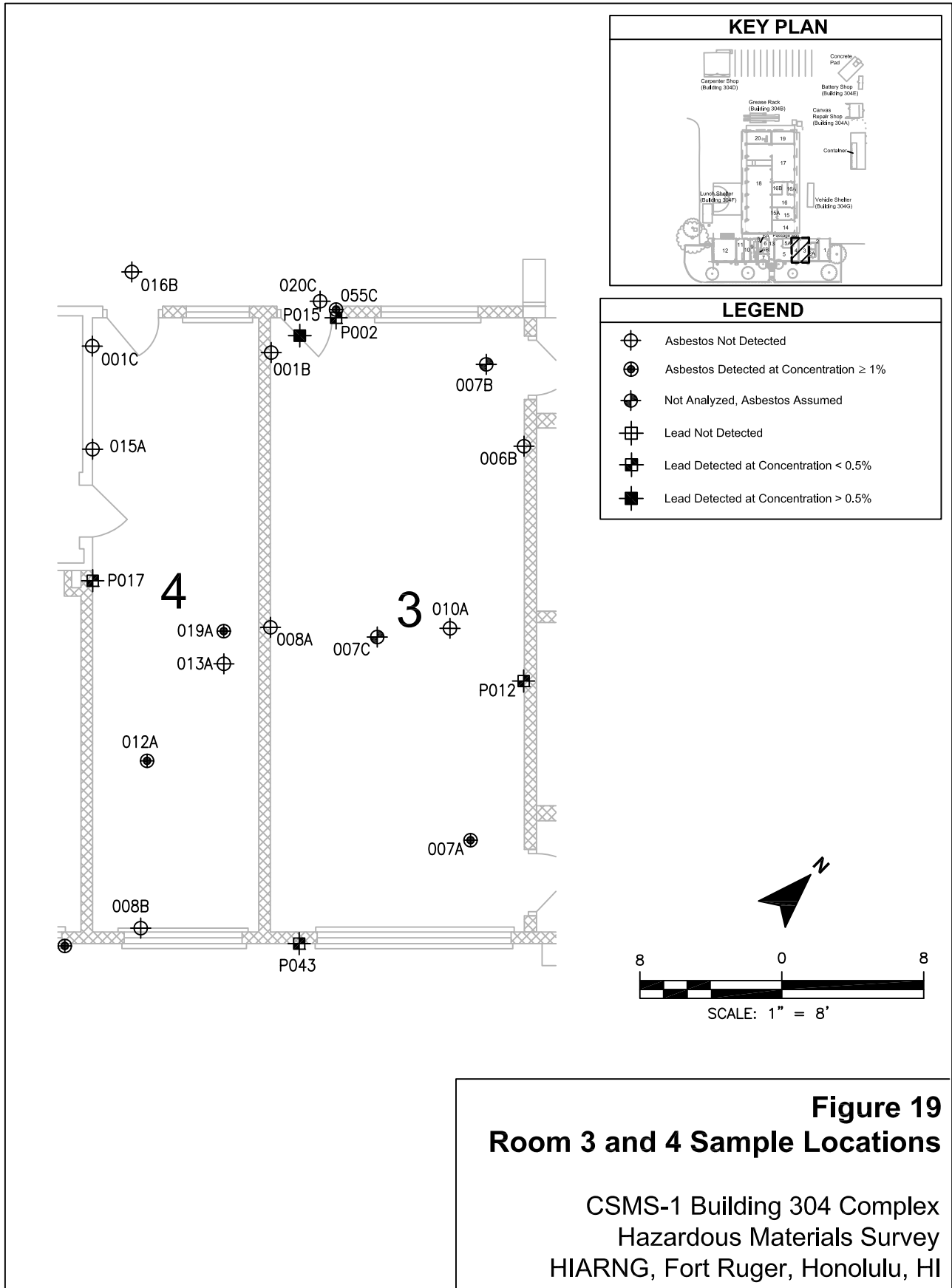






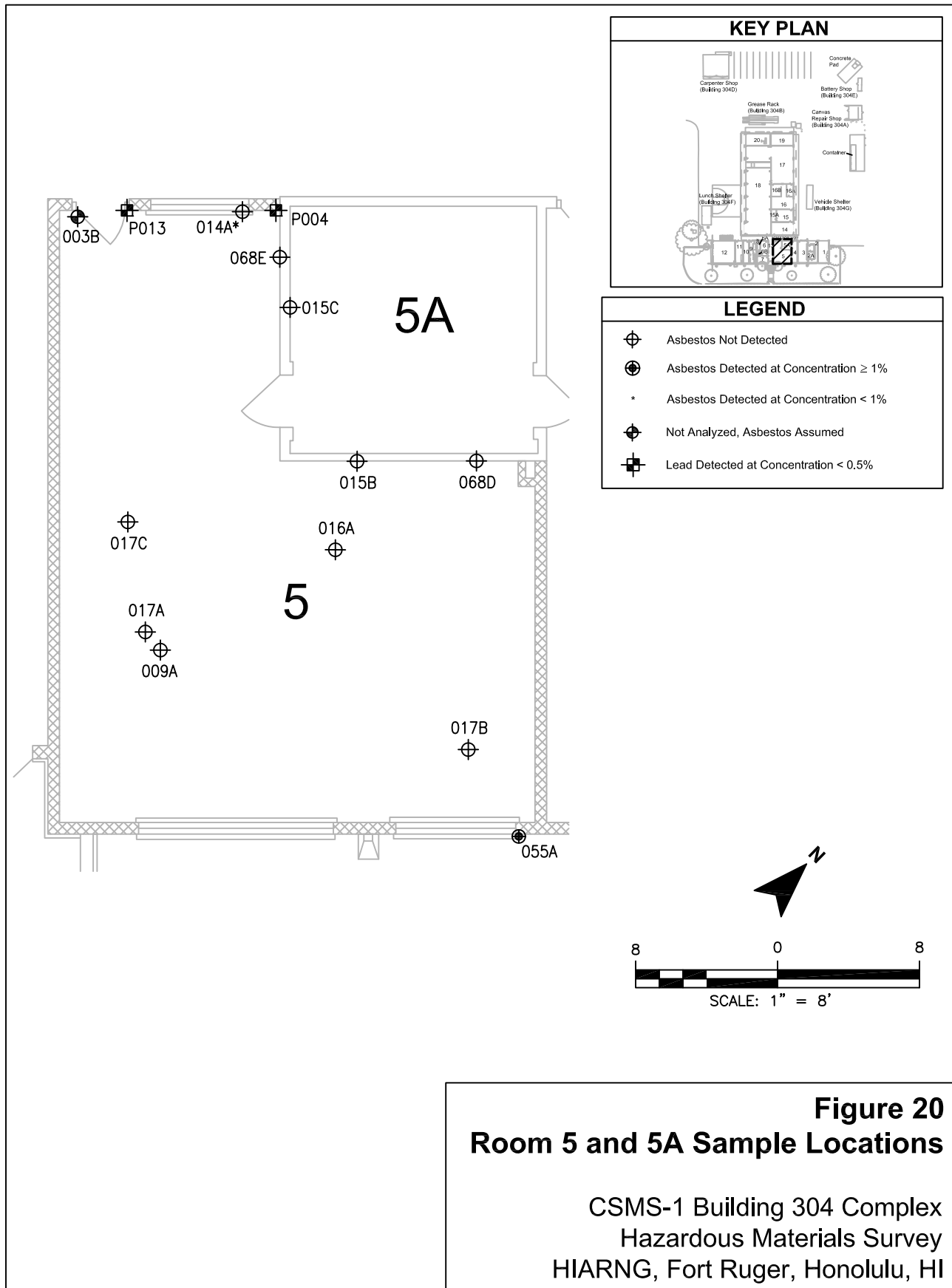




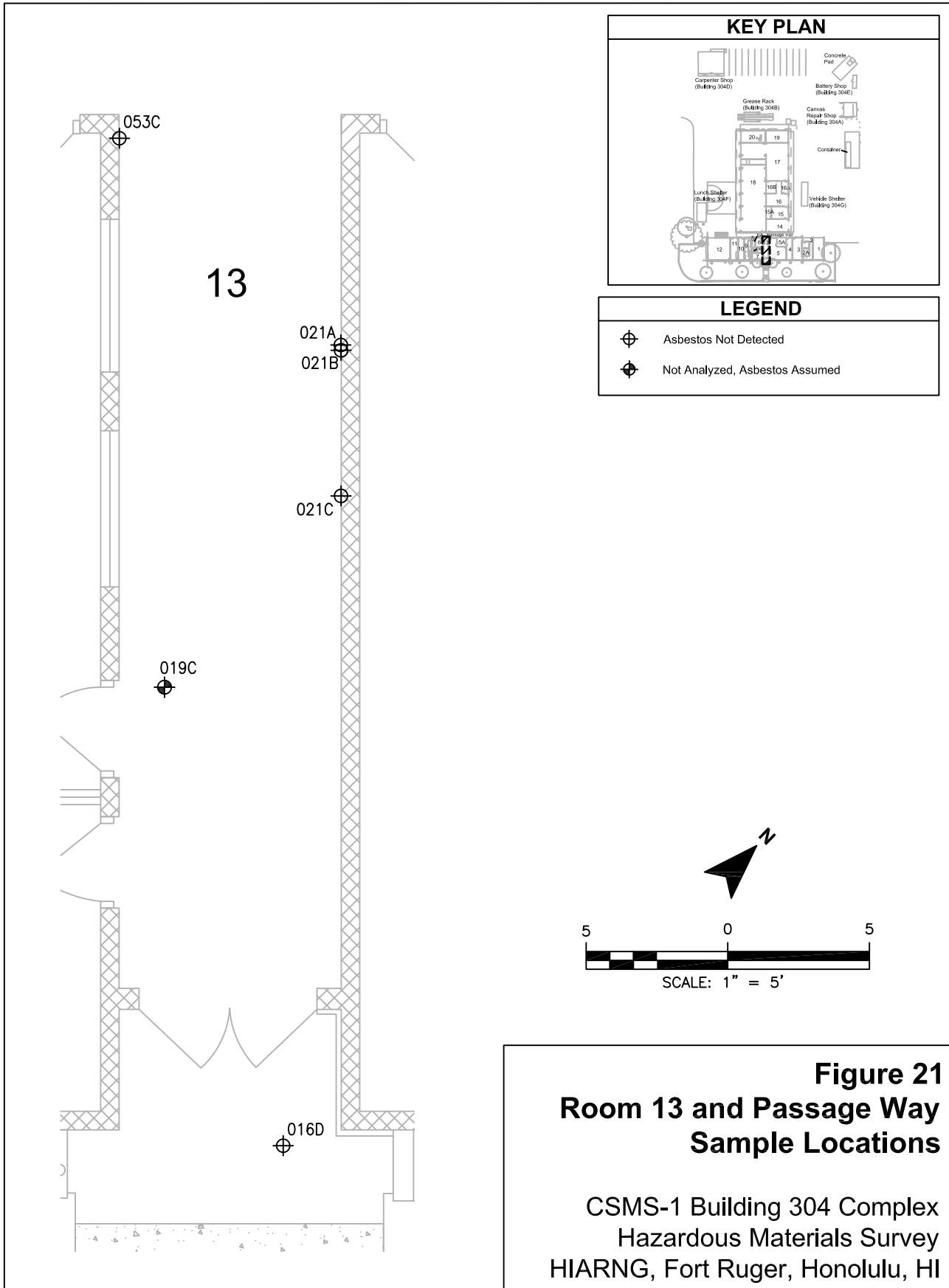




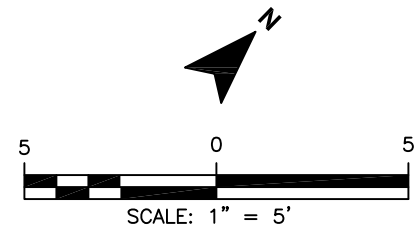
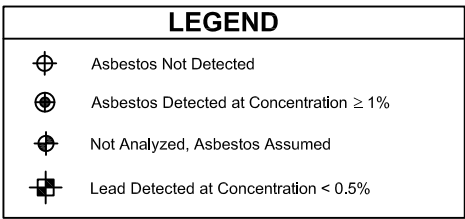
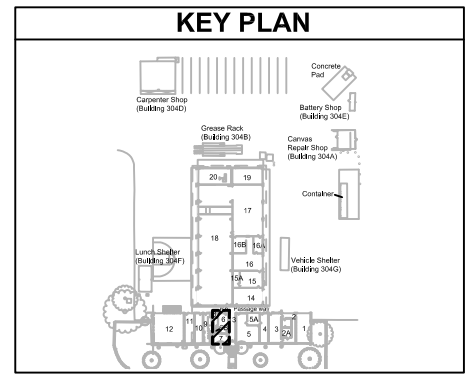
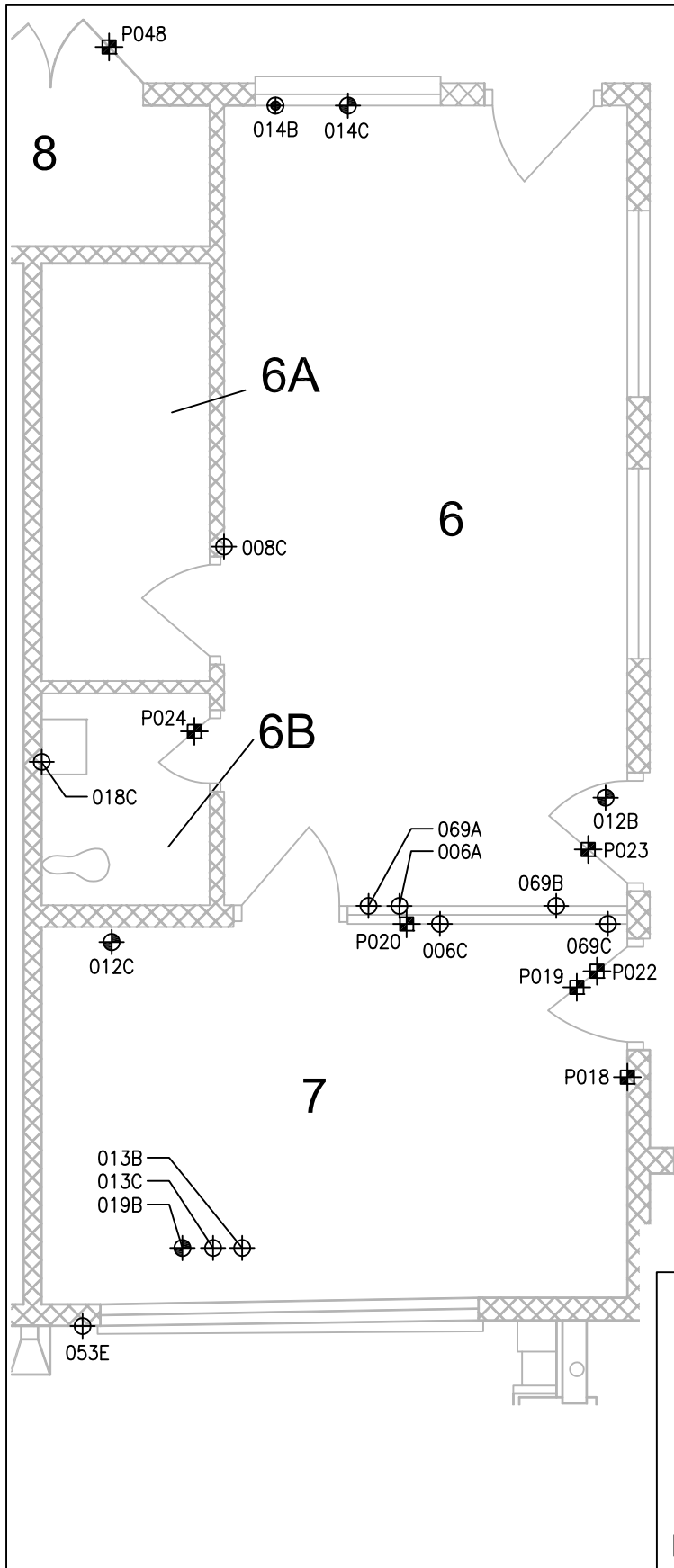








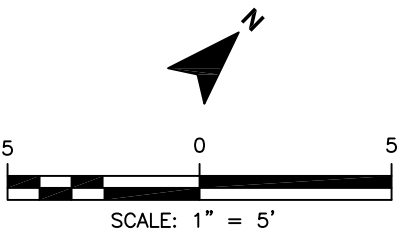
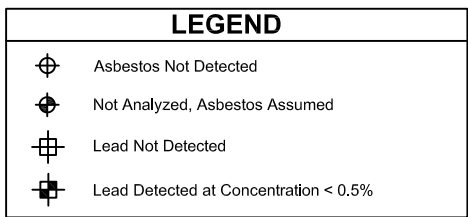
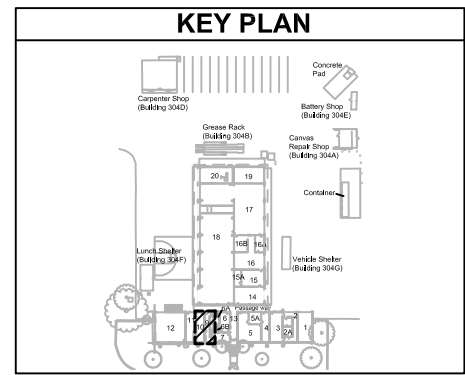
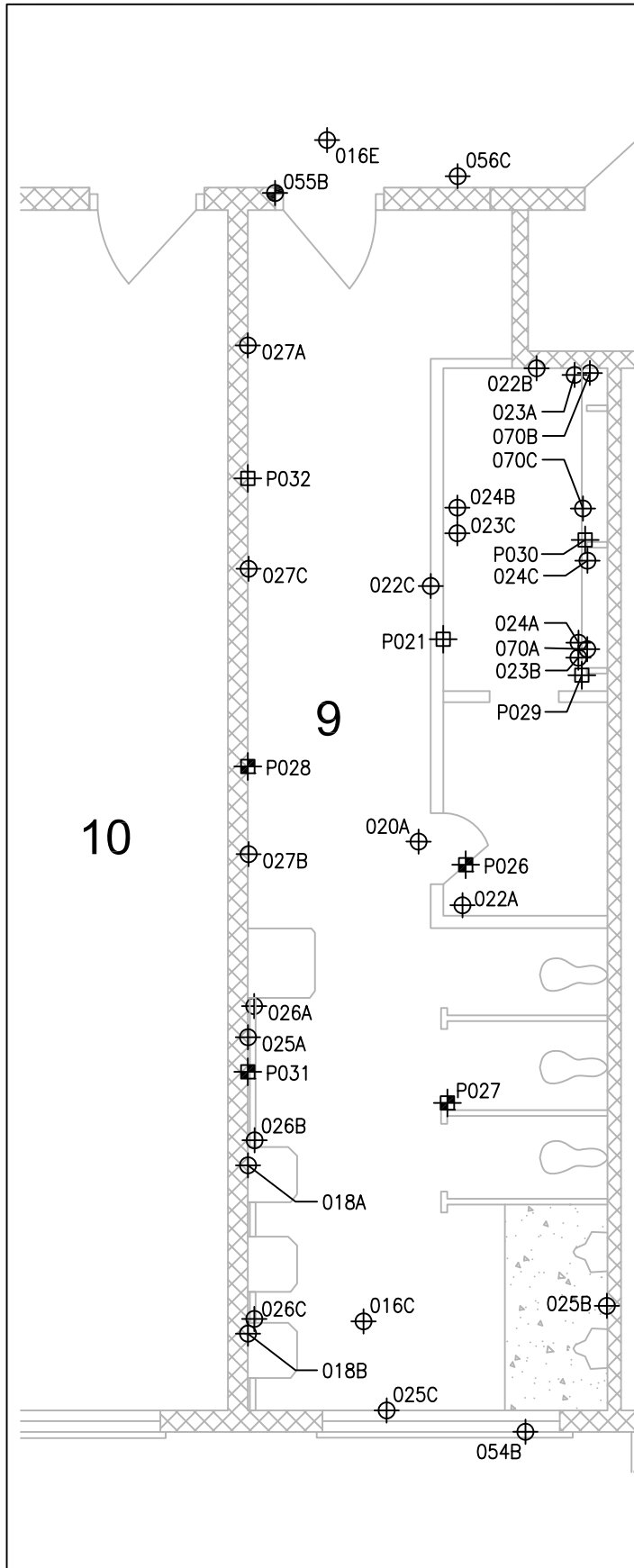




**Figure 22**  
**Room 6, 6A, 6B and 7**  
**Sample Locations**

CSMS-1 Building 304 Complex  
 Hazardous Materials Survey  
 HIARNG, Fort Ruger, Honolulu, HI



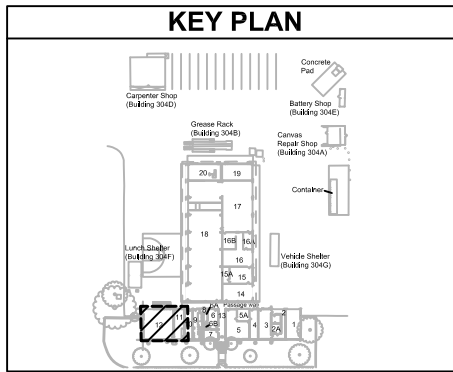
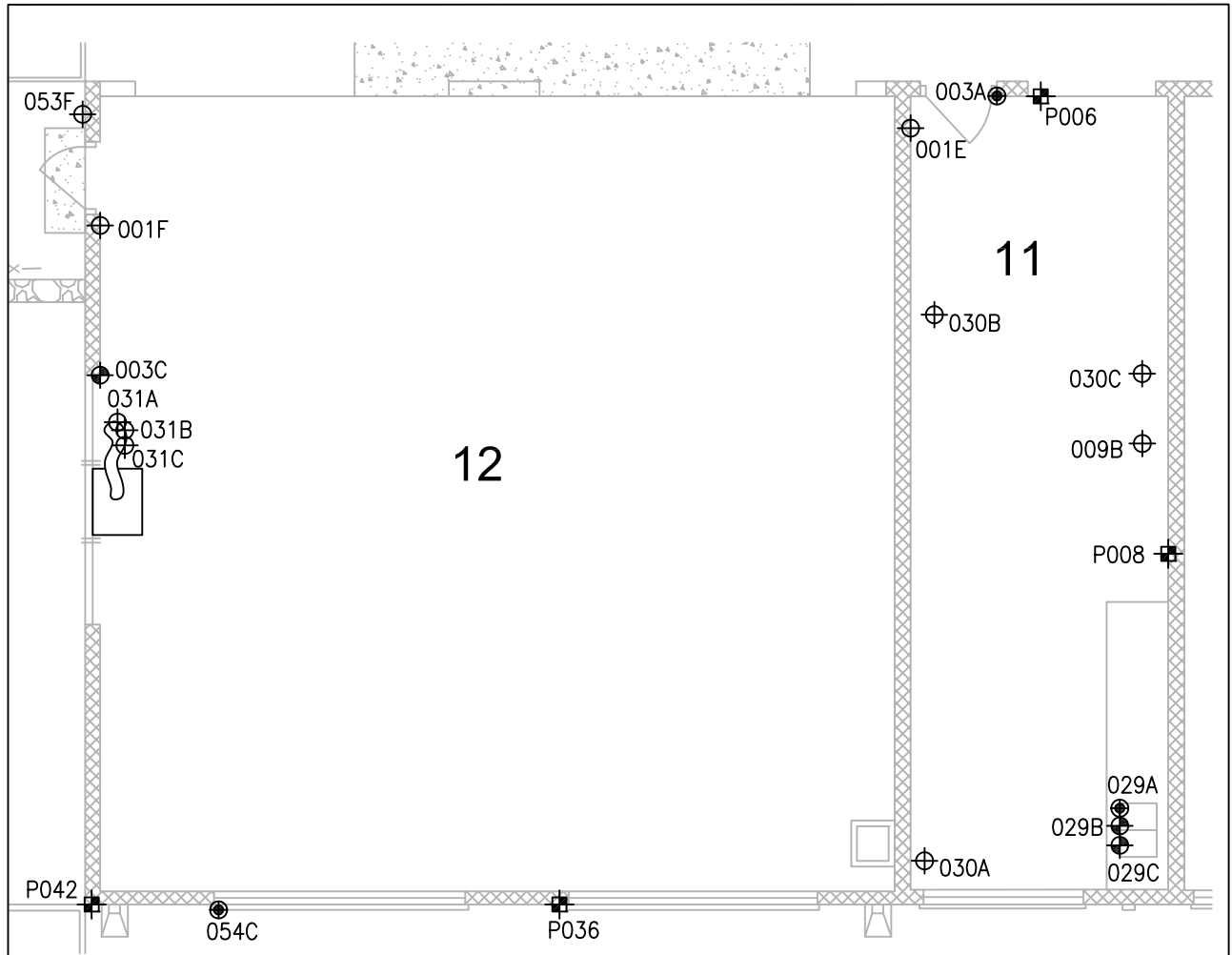


**Figure 23**  
**Room 9 and 10**  
**Sample Locations**

CSMS-1 Building 304 Complex  
 Hazardous Materials Survey  
 HIARNG, Fort Ruger, Honolulu, HI

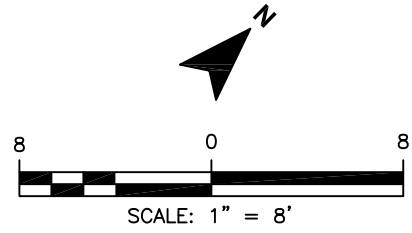






**LEGEND**

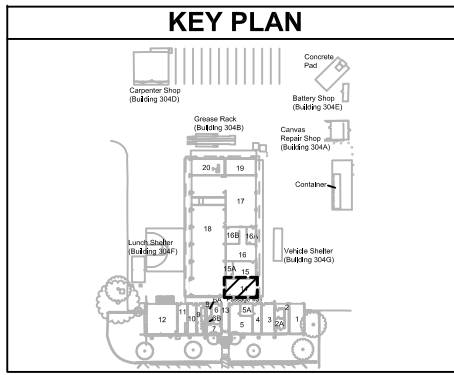
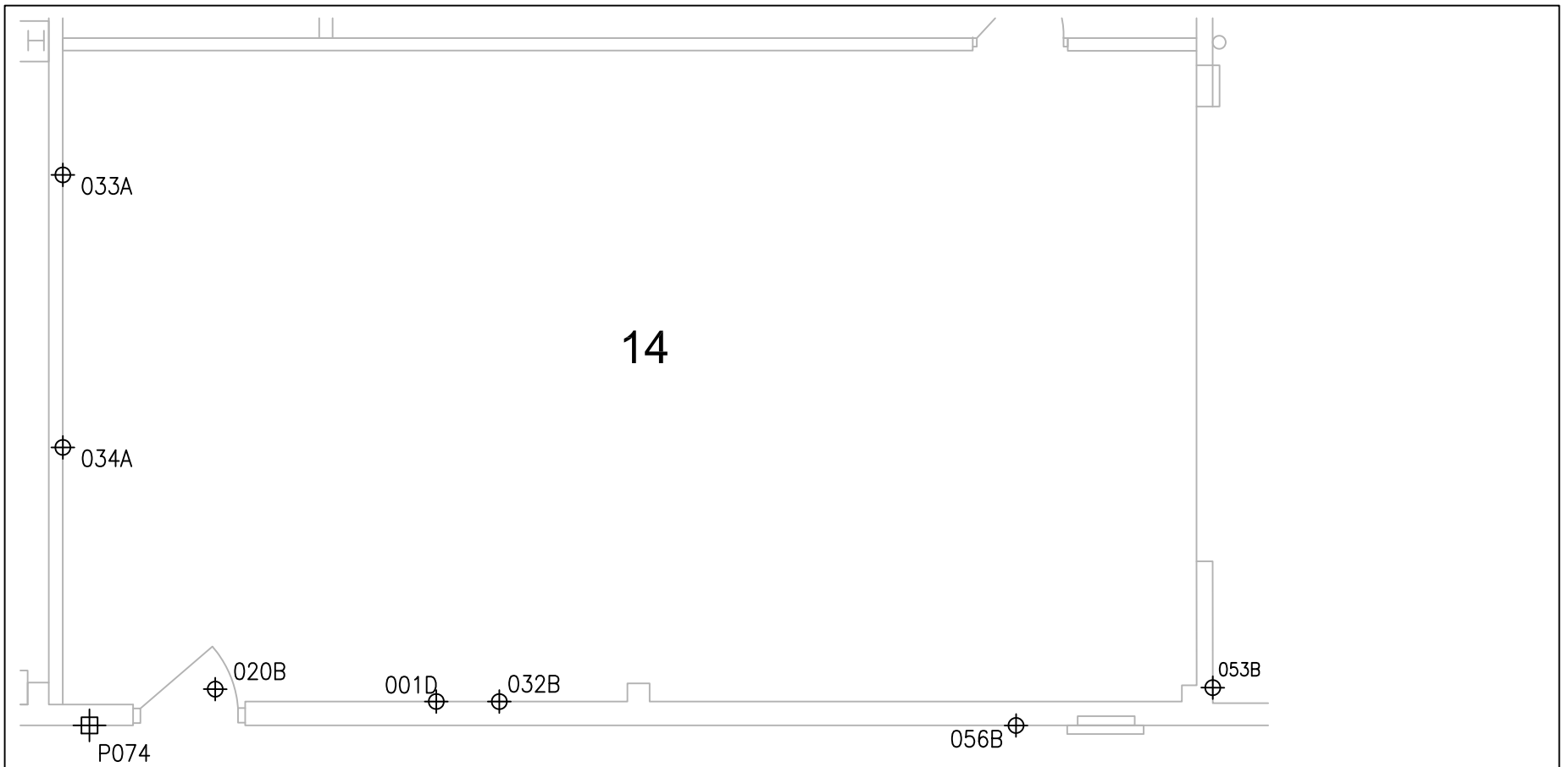
⊕	Asbestos Not Detected
⊙	Asbestos Detected at Concentration $\geq 1\%$
⊕	Not Analyzed, Asbestos Assumed
⊕	Lead Detected at Concentration $< 0.5\%$



**Figure 24**  
**Room 11 and 12**  
**Sample Locations**

CSMS-1 Building 304 Complex  
 Hazardous Materials Survey  
 HIARNG, Fort Ruger, Honolulu, HI



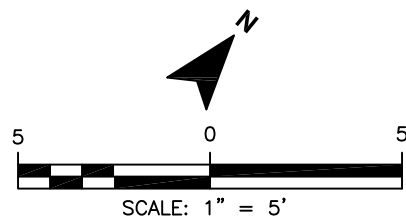
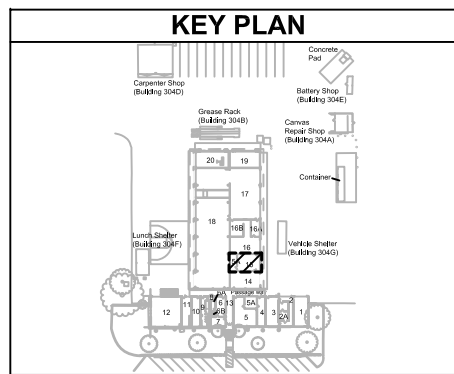
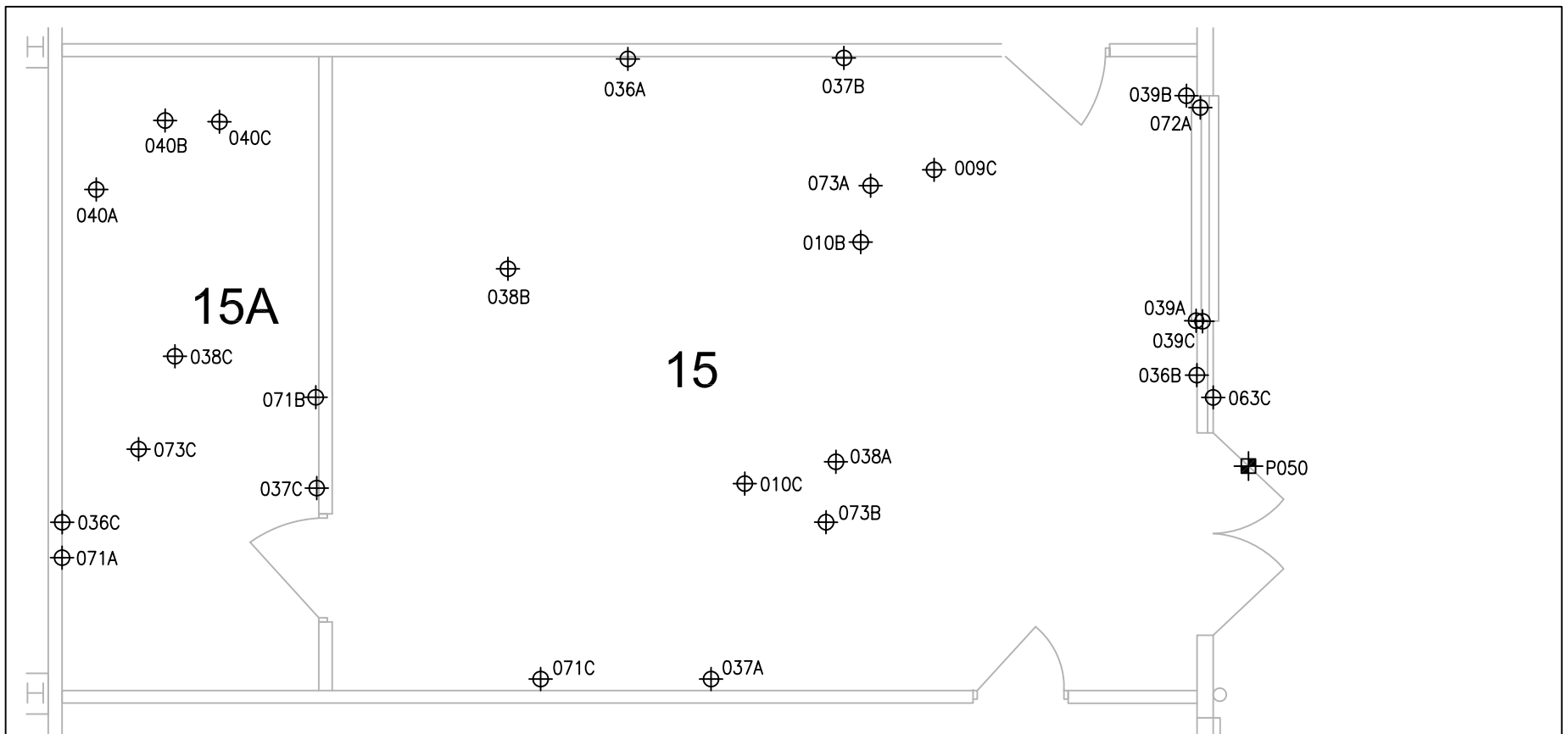


SCALE: 1" = 5'

LEGEND	
⊕	Asbestos Not Detected
⊞	Lead Not Detected

**Figure 25**  
**Room 14 Sample Locations**  
 CSMS-1 Building 304 Complex  
 Hazardous Materials Survey  
 HIARNG, Fort Ruger, Honolulu, HI



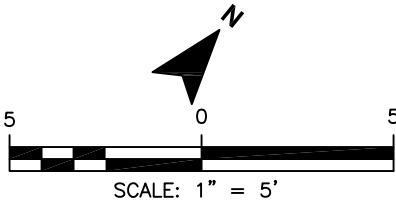
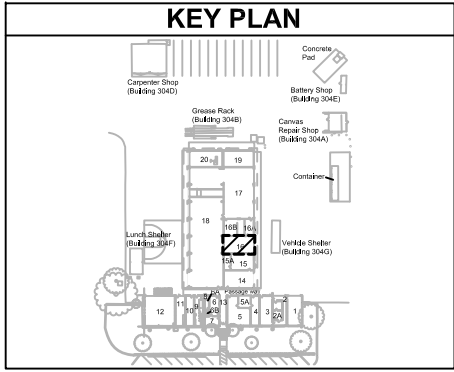
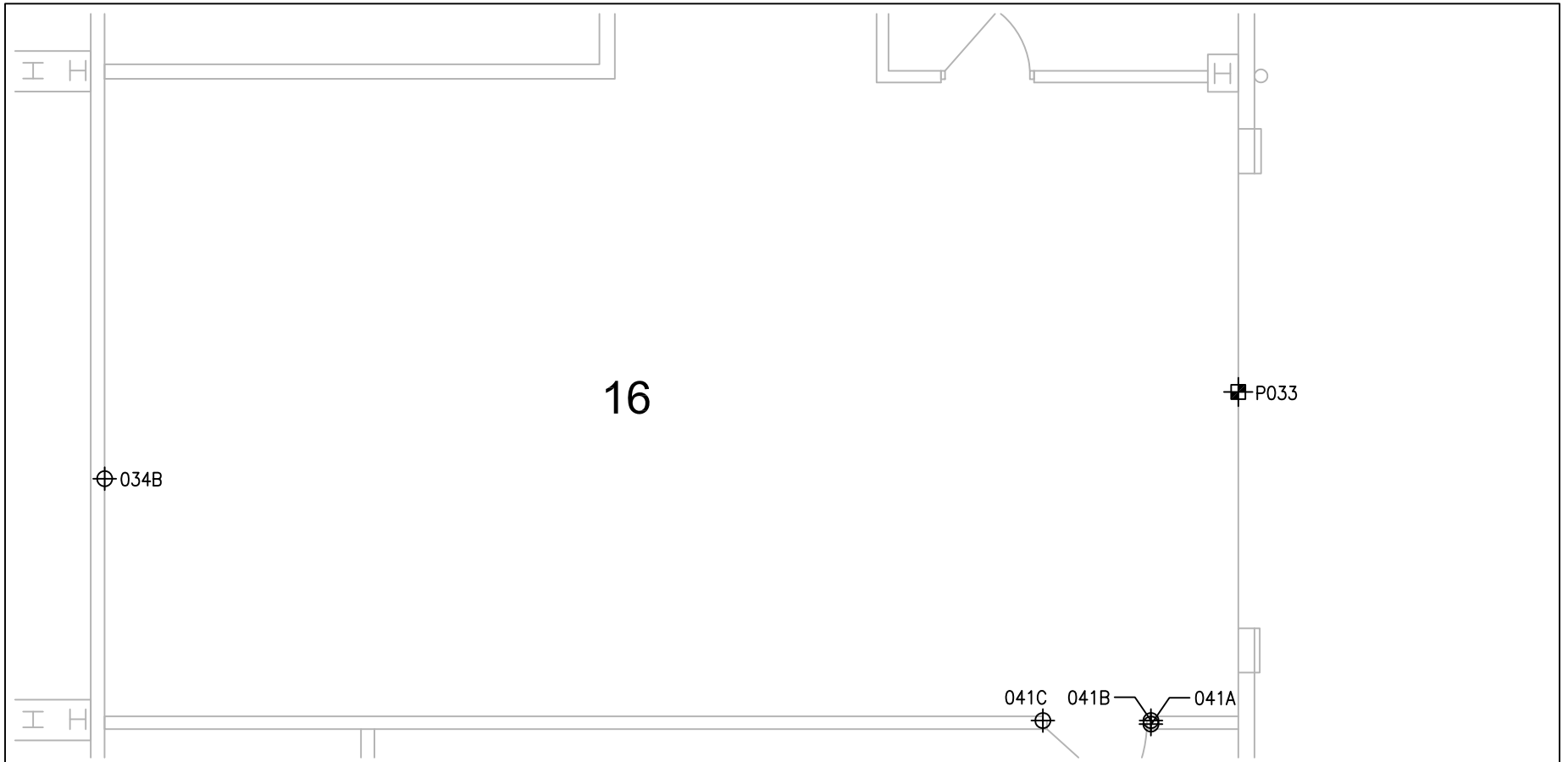


LEGEND	
	Asbestos Not Detected
	Lead Detected at Concentration < 0.5%

**Figure 26**  
**Room 15 and 15A**  
**Sample Locations**

CSMS-1 Building 304 Complex  
 Hazardous Materials Survey  
 HIARNG, Fort Ruger, Honolulu, HI





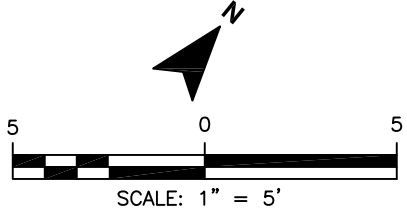
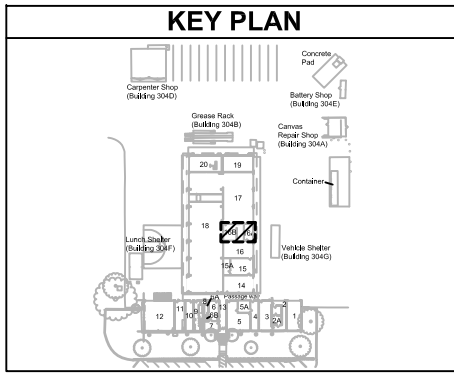
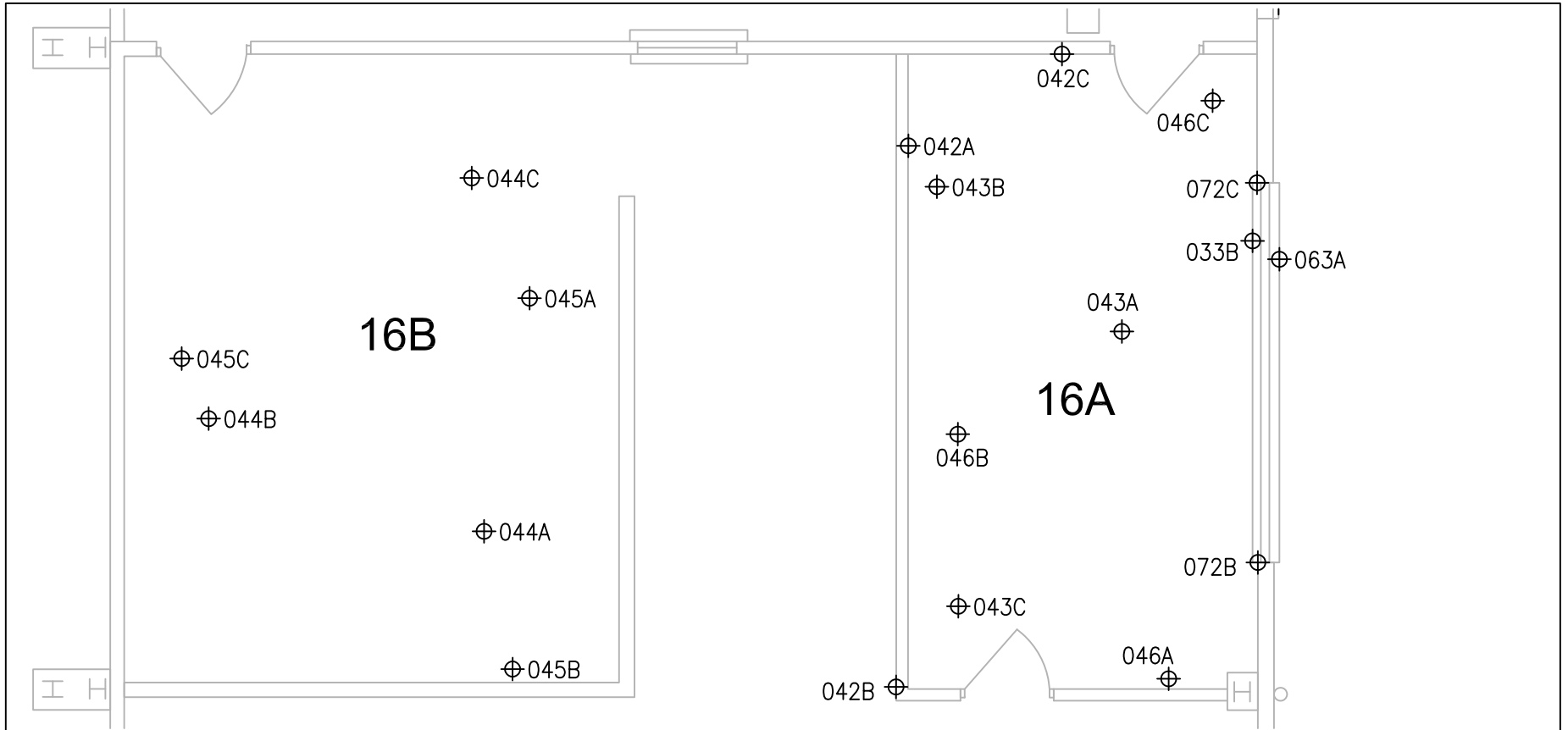
**LEGEND**

	Asbestos Not Detected
	Lead Detected at Concentration < 0.5%

**Figure 27**  
**Room 16 Sample Locations**  
 CSMS-1 Building 304 Complex  
 Hazardous Materials Survey  
 HIARNG, Fort Ruger, Honolulu, HI





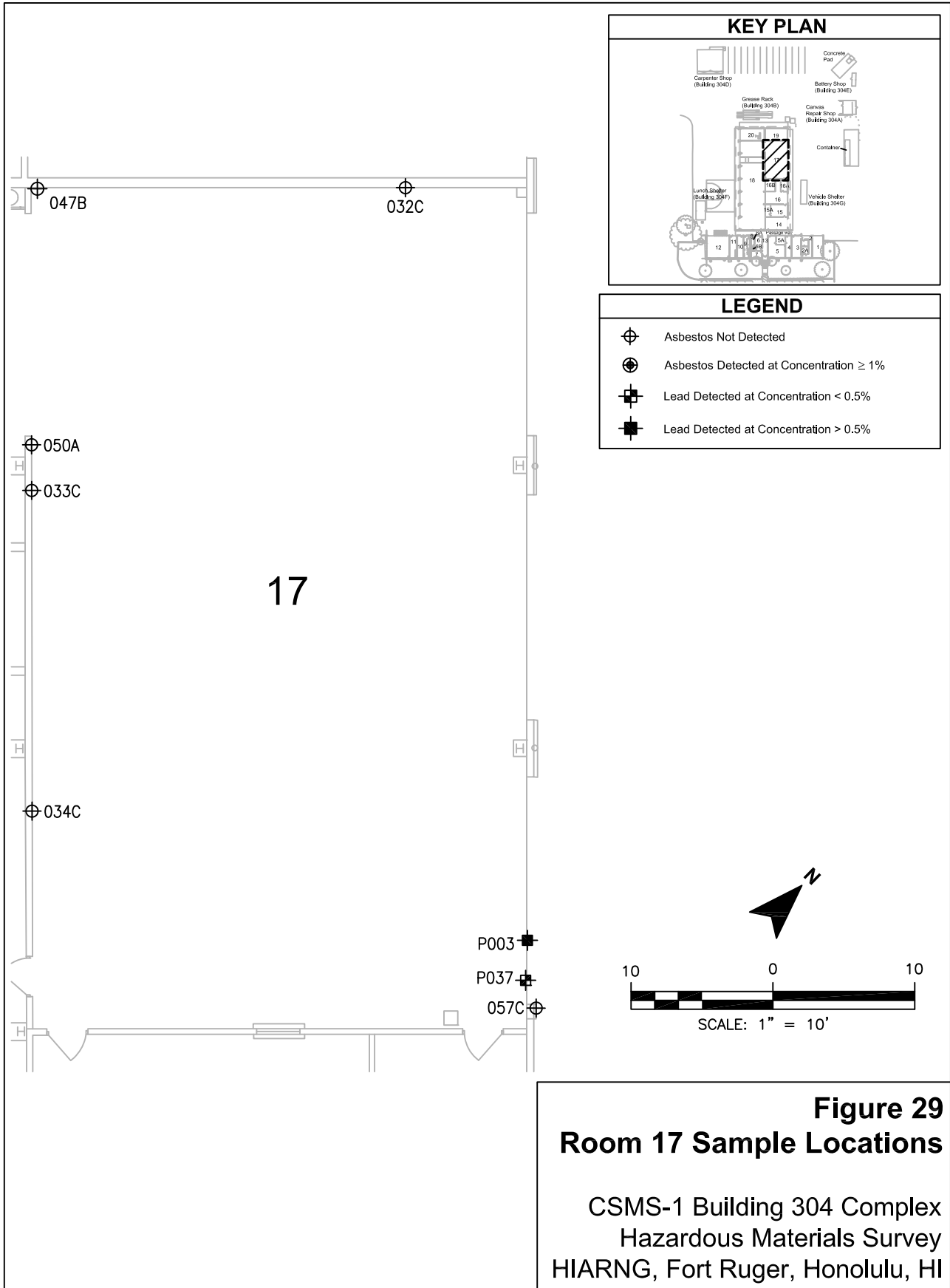


LEGEND	
⊕	Asbestos Not Detected

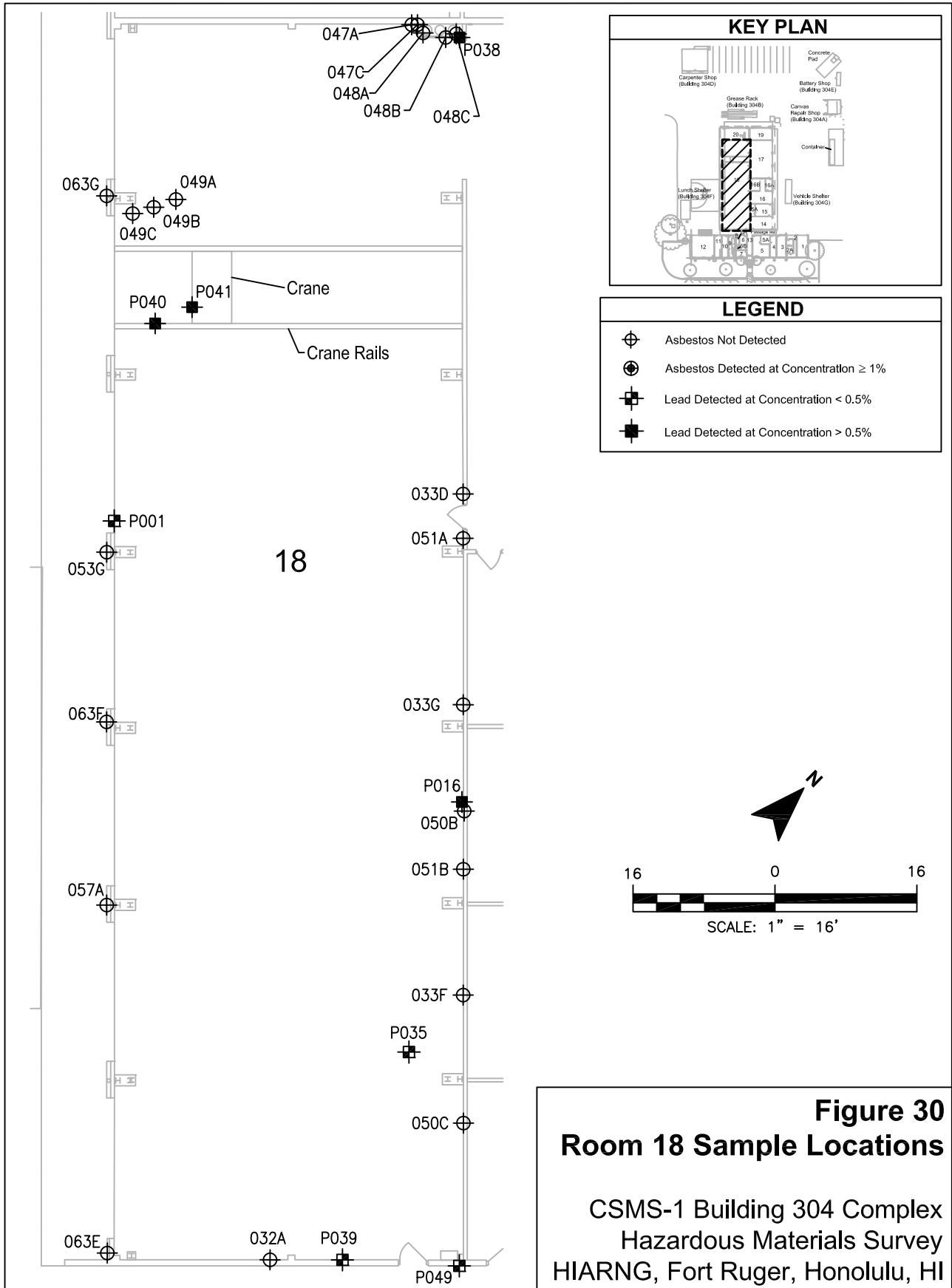
**Figure 28**  
**Room 16A and 16B**  
**Sample Locations**

CSMS-1 Building 304 Complex  
 Hazardous Materials Survey  
 HIARNG, Fort Ruger, Honolulu, HI

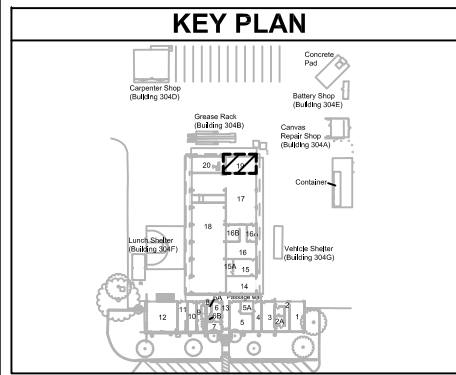
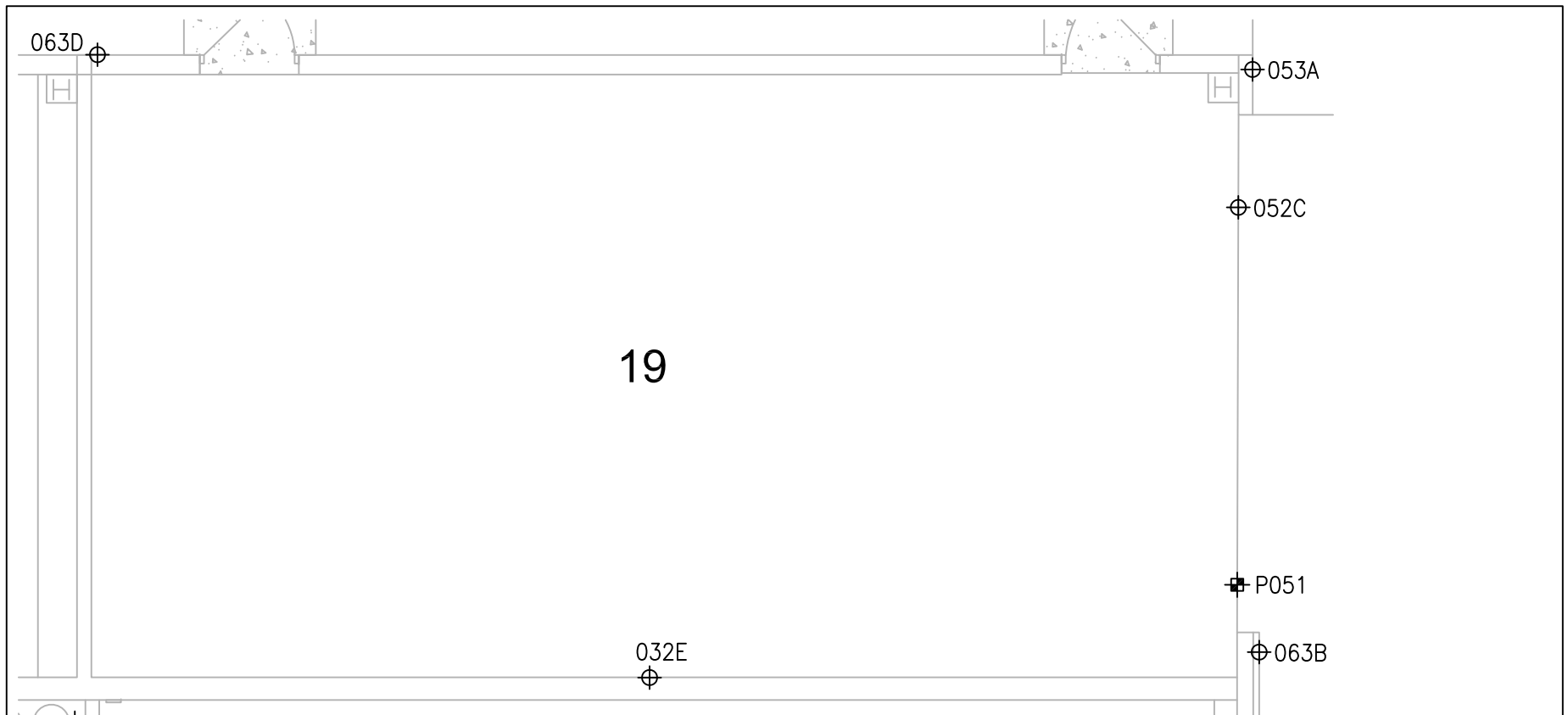












SCALE: 1" = 5'

**LEGEND**

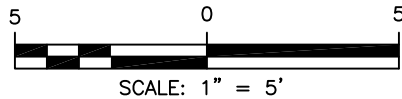
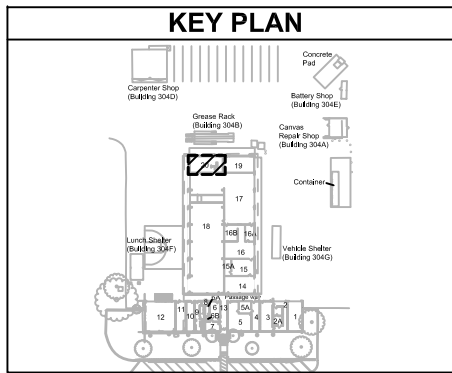
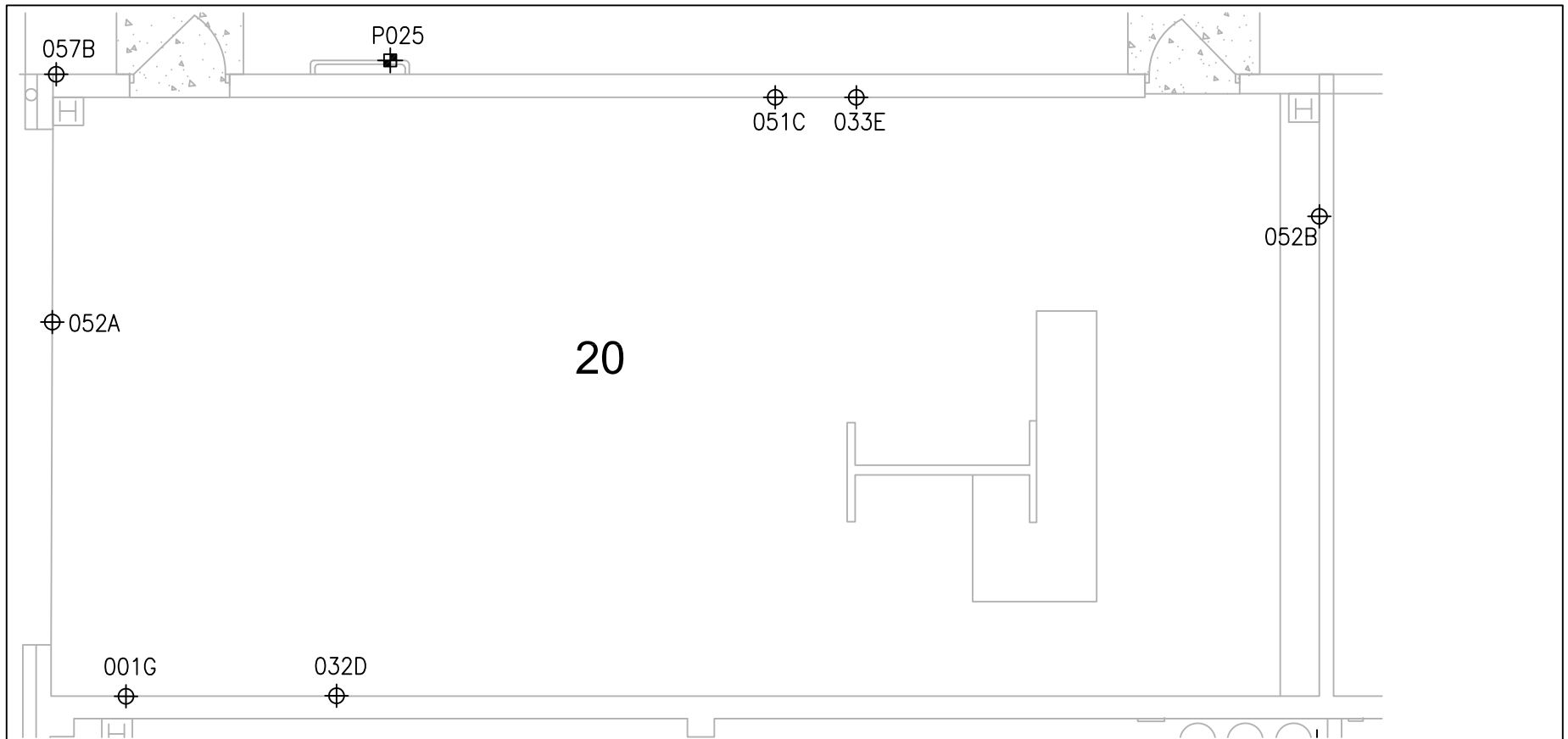
- ⊕ Asbestos Not Detected
- Asbestos Detected at Concentration  $\geq 1\%$
- ⊠ Lead Detected at Concentration  $< 0.5\%$

**Figure 31**  
**Room 19 Sample Locations**

CSMS-1 Building 304 Complex  
Hazardous Materials Survey  
HIARNG, Fort Ruger, Honolulu, HI





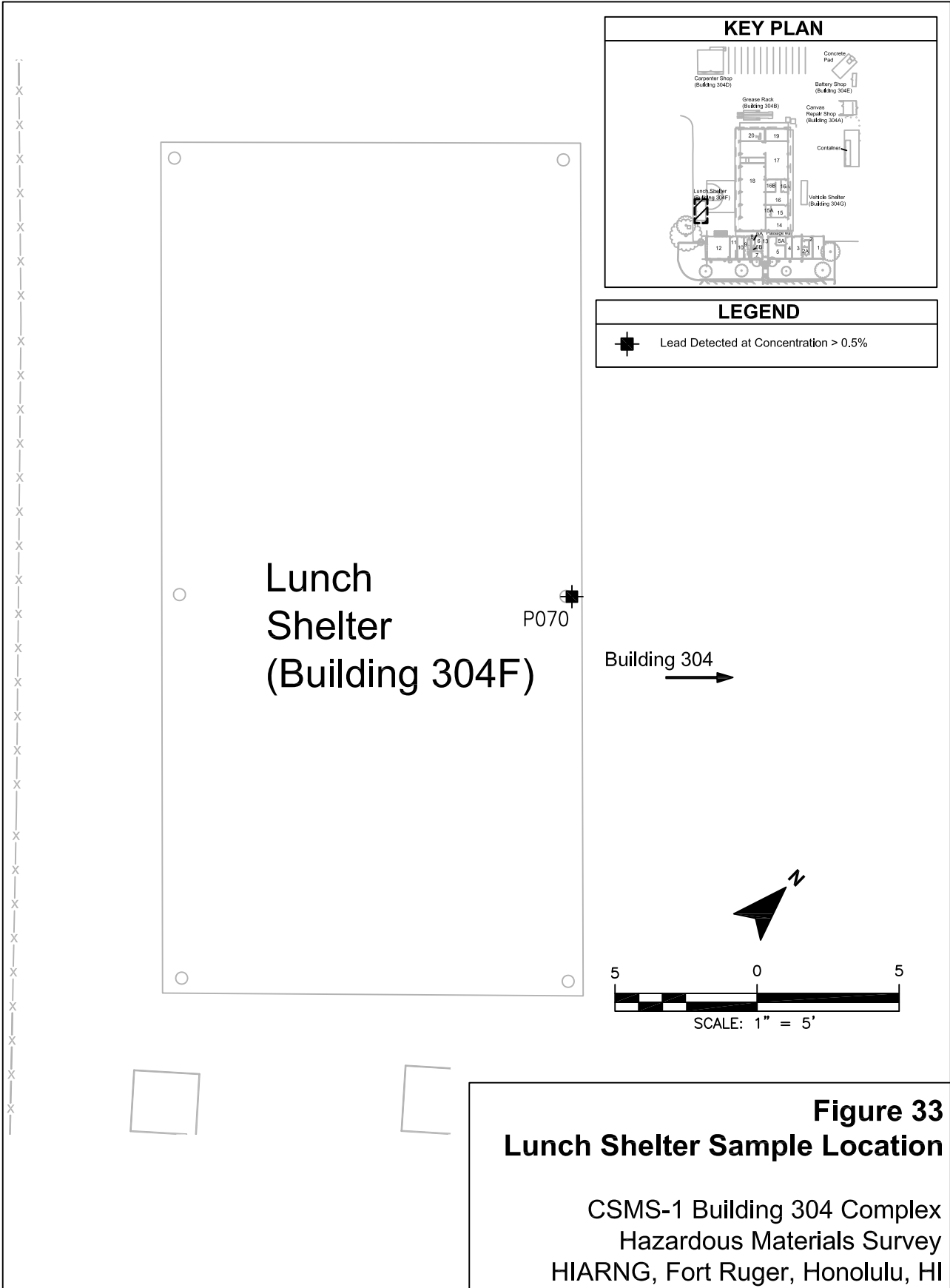


**LEGEND**

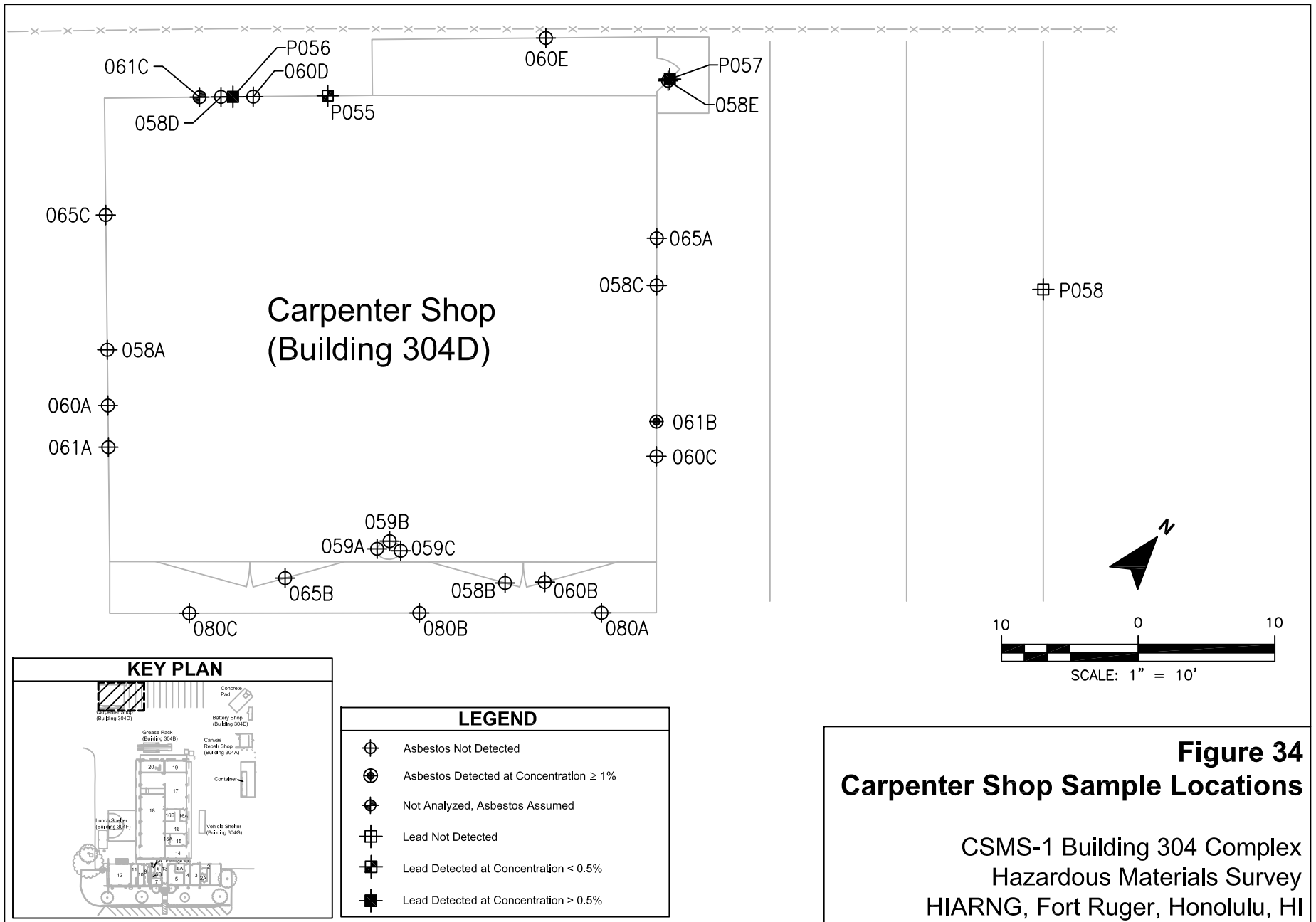
	Asbestos Not Detected
	Asbestos Detected at Concentration $\geq 1\%$
	Lead Detected at Concentration $< 0.5\%$

**Figure 32**  
**Room 20 Sample Locations**  
 CSMS-1 Building 304 Complex  
 Hazardous Materials Survey  
 HIARNG, Fort Ruger, Honolulu, HI

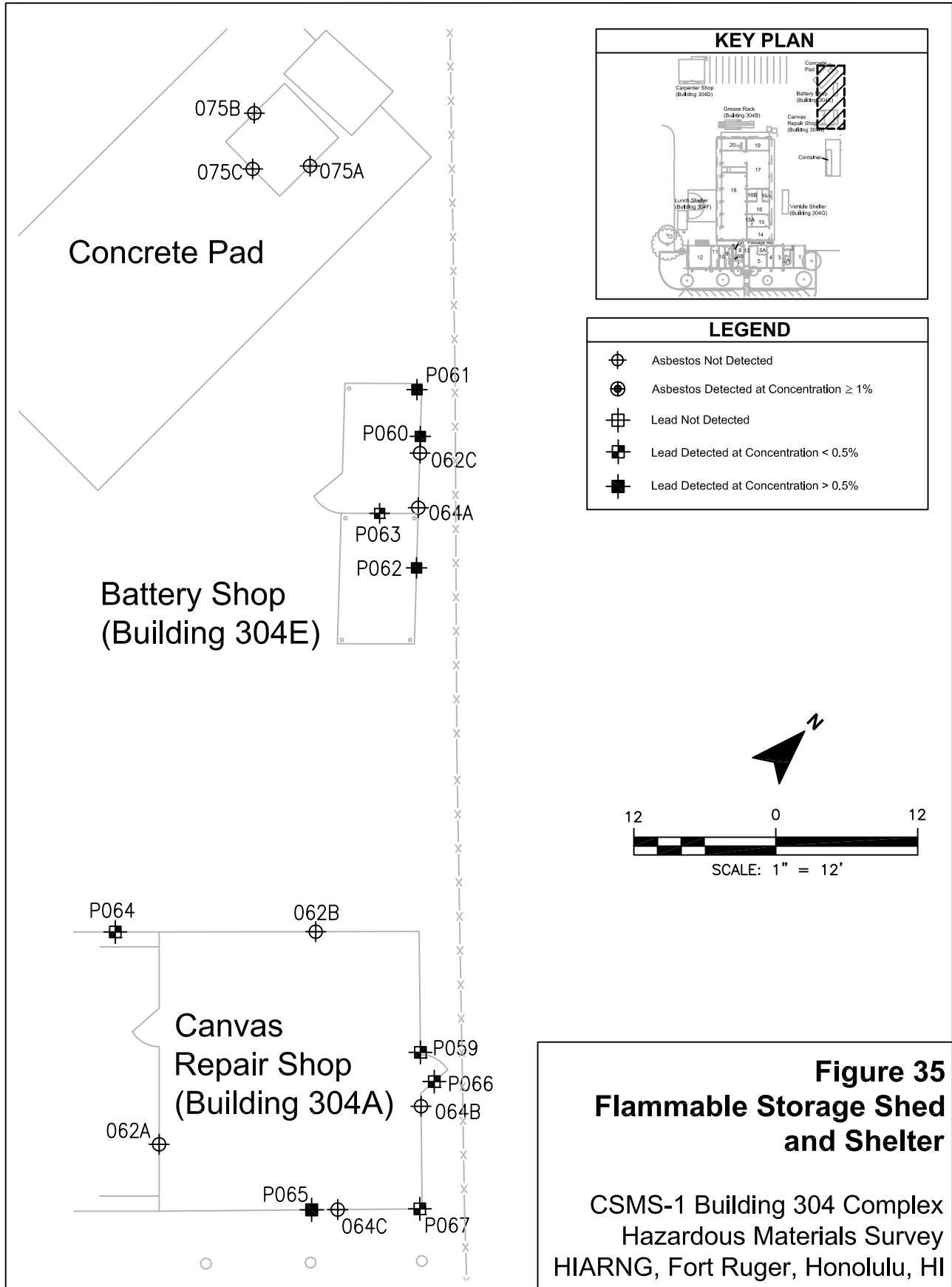






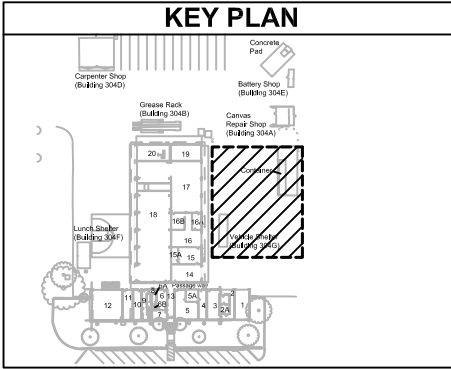






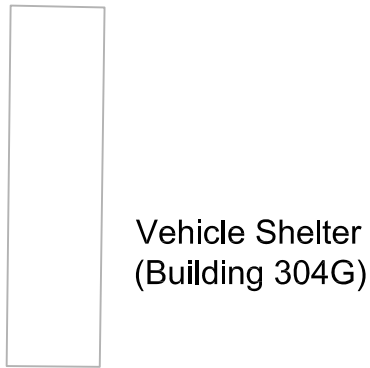




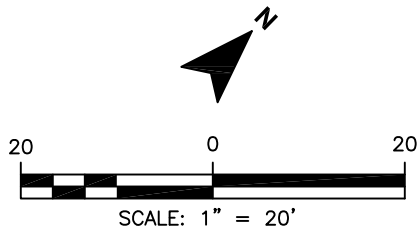
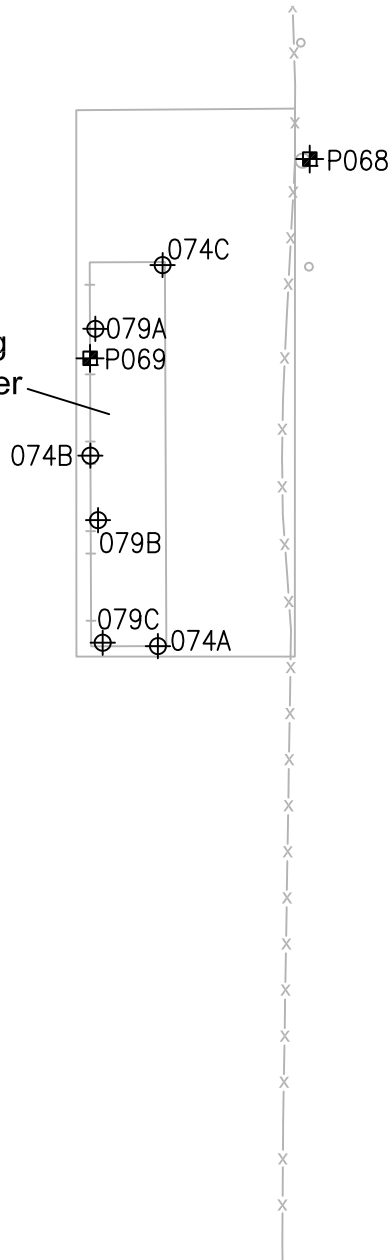


LEGEND	
	Asbestos Not Detected
	Lead Detected at Concentration < 0.5%

← Building 304



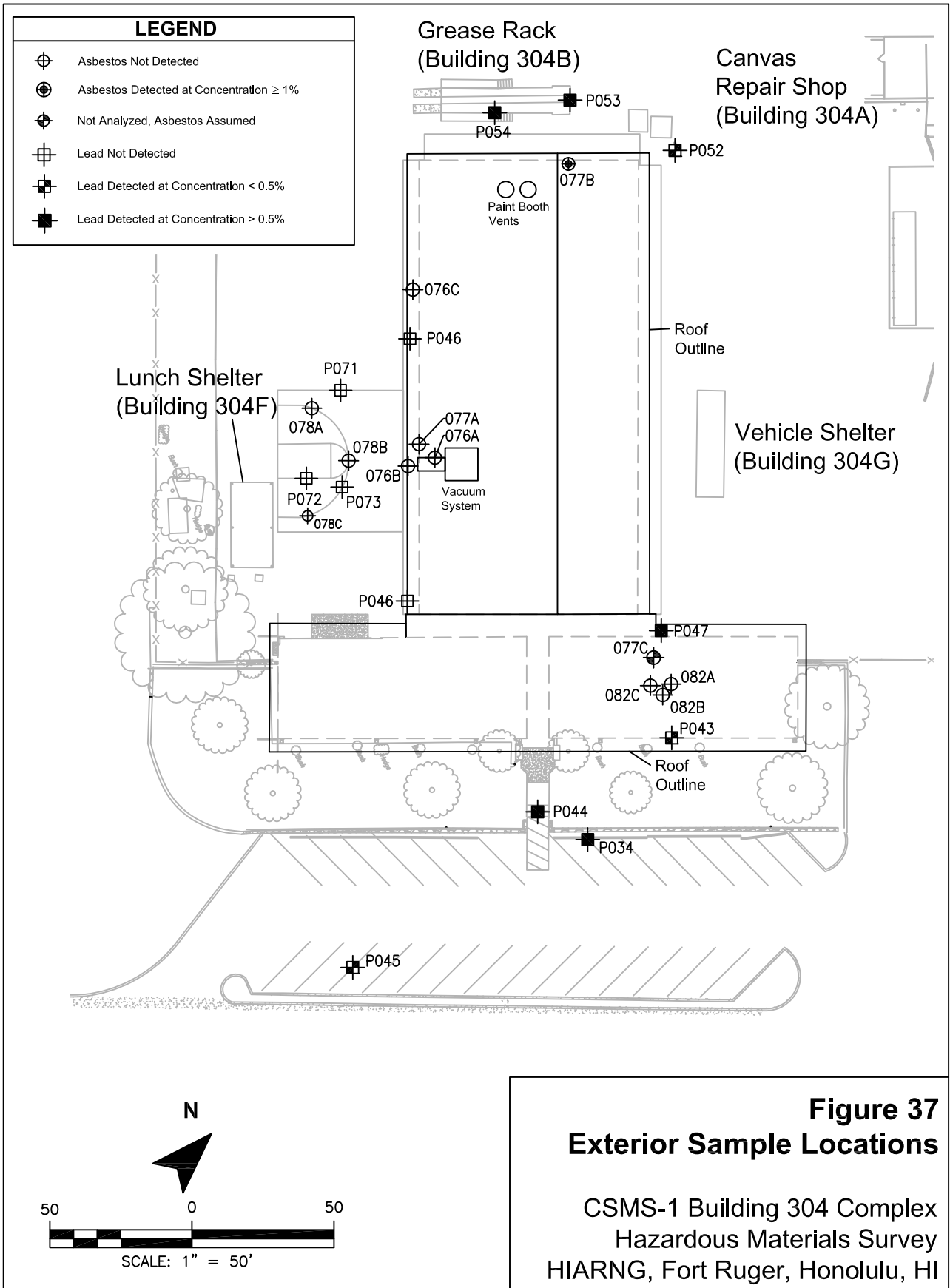
Shipping Container



**Figure 36**  
**Shipping Container**  
**Sample Locations**

CSMS-1 Building 304 Complex  
Hazardous Materials Survey  
HIARNG, Fort Ruger, Honolulu, HI



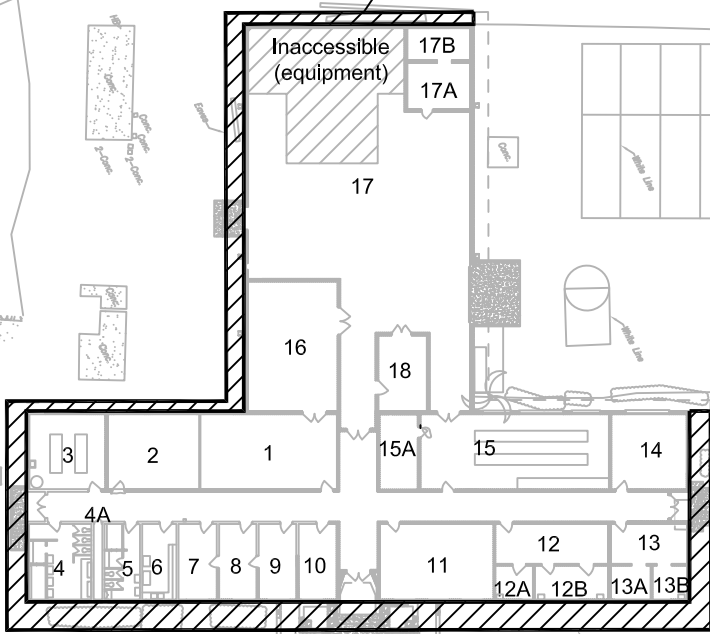




S:\Projects\Legacy\Chm\Gohn\60340502 000 Demo Bldg 301 and 301A\400 Tech\404 Haz Mat\02 DWG\000-DEMO BLDG 301 Figures.dwg 06/28/15 8:27 AM shhmotor

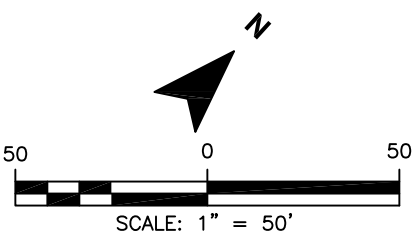
LEGEND	
	DU-05

DU-05, Surface Soil		
Analyte	Concentration (mg/kg)	Q
Lead	73	B
Chlordane	1.2	



Project Screening Levels		
Surface Soil (DU-05)		
Analyte	Unrestricted	Commercial /Industrial
Lead (mg/kg)	200	800
Chlordane (mg/kg)	16	29

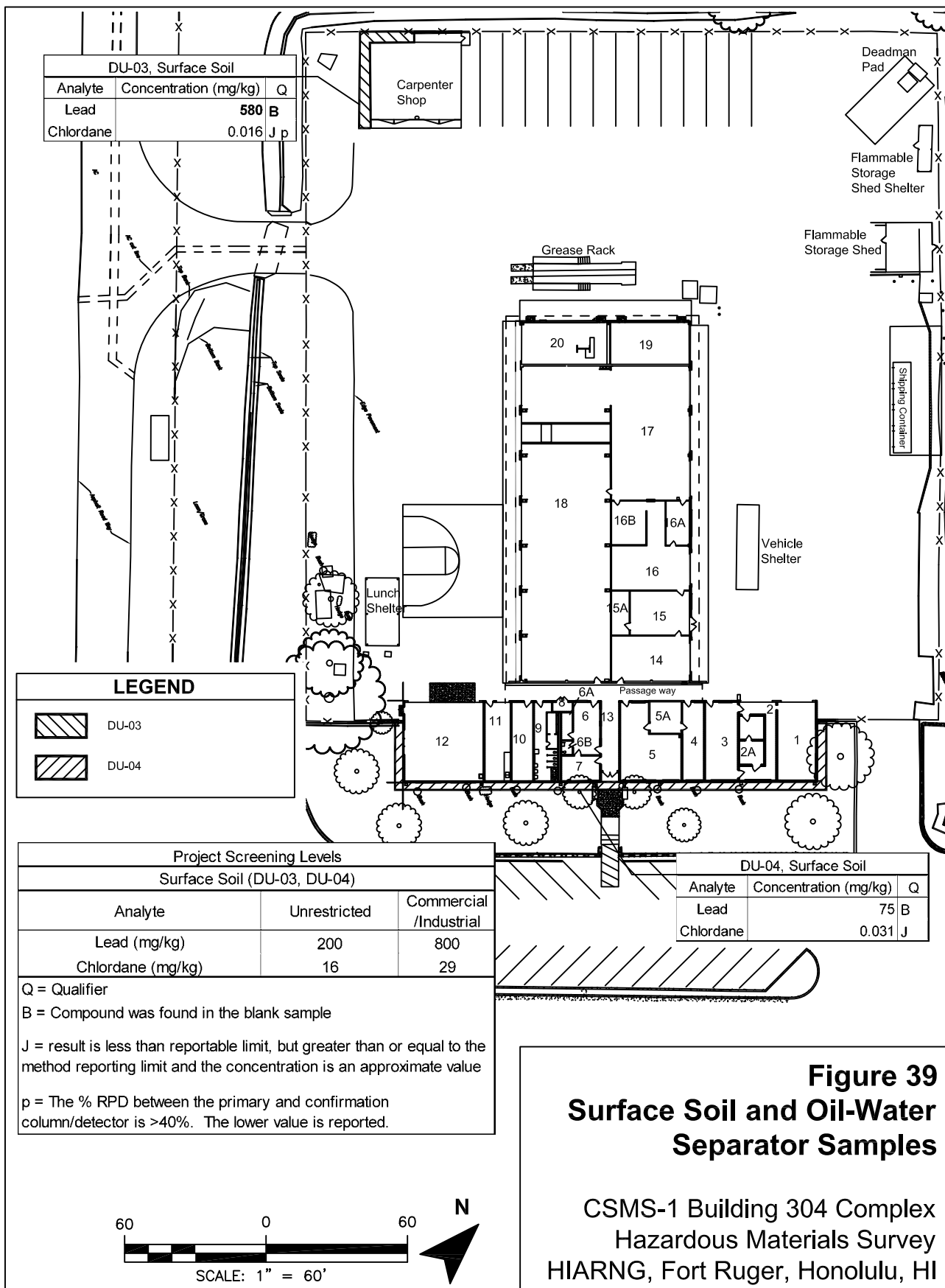
Q = Qualifier  
 B = Compound was detected in laboratory blank



**Figure 38**  
**Surface Soil Sample**

CERFP Building 301  
 Hazardous Materials Survey  
 HIARNG, Ft. Ruger, Honolulu, HI





DU-03, Surface Soil		
Analyte	Concentration (mg/kg)	Q
Lead	580	B
Chlordane	0.016	J p

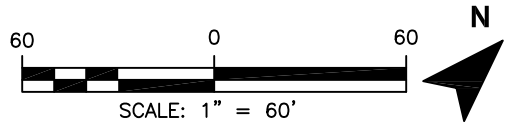
LEGEND	
	DU-03
	DU-04

Project Screening Levels		
Surface Soil (DU-03, DU-04)		
Analyte	Unrestricted	Commercial /Industrial
Lead (mg/kg)	200	800
Chlordane (mg/kg)	16	29

DU-04, Surface Soil		
Analyte	Concentration (mg/kg)	Q
Lead	75	B
Chlordane	0.031	J

Q = Qualifier  
 B = Compound was found in the blank sample  
 J = result is less than reportable limit, but greater than or equal to the method reporting limit and the concentration is an approximate value  
 p = The % RPD between the primary and confirmation column/detector is >40%. The lower value is reported.

**Figure 39**  
**Surface Soil and Oil-Water Separator Samples**  
 CSMS-1 Building 304 Complex  
 Hazardous Materials Survey  
 HIARNG, Fort Ruger, Honolulu, HI







**Photolog**





Photograph 1.

A view of the CERFP Building 301 (foreground) and the CSMS-1 Building 304 complex (background) on the north end of the Diamond Head Crater, facing south.



Photograph 2.

A view of the southeast front of the CERFP Building 301, facing northwest.



Photograph 3.

A view of the southeast front of CSMS-1 Building 304, facing southwest.



Photograph 4.

A view of the lunch shelter (Building 304F) on the south end of the CSMS-1 Building 304 complex, facing southwest.



Photograph 5.

A view of the Carpenter Shop (Building 304D) on the southwest corner of the CSMS-1 Building 304 complex, facing northwest.



Photograph 6.

A view of the oil-water separator unit and waste oil holding tank on the northwest end of the CSMS-1 Building 304.





Photograph 7.

A view of the Canvas Repair Shop (Building 304A, right) and the Battery Shop (Building 304E, left) on the northeast end of the CSMS-1 Building 304 complex, facing north-northeast.



Photograph 8.

A view of the shipping container on the northeast end of the CSMS-1 Building 304 complex, facing north.



Photograph 9.

A view of the vehicle shelter (Building 304G) on the north side of the CSMS-1 Building 304 complex, facing south.



Photograph 10.

The gray interior window caulking found on the window pane perimeters in the CERFP Building 301, Rooms 1, 2, 3, and 15 were found to contain 2% asbestos.



Photograph 11.

The brown vinyl floor tile and associated mastic found beneath the mottled brown 12"x12" VFT in the CERFP Building 301, Room 11, was found to contain 2-3% asbestos.



Photograph 12.

The pink and blue 9"x9" vinyl floor tile found in the CERFP Building 301, Rooms 7, 8, 9, 10, and 13 were found to contain asbestos. The black mastic beneath this tile was found to not contain asbestos.





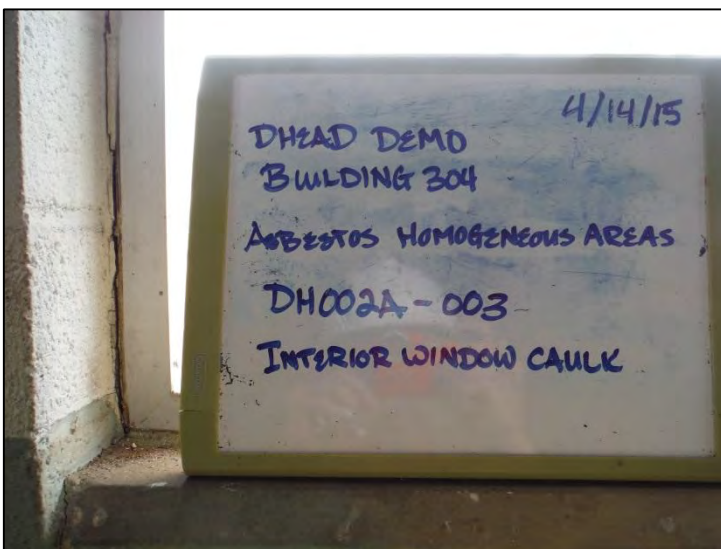
Photograph 13.

The beige VFT found beneath the blue 12"x12" VFT in the CERFP Building 301 Room 14 was found to contain 4-5% asbestos. No asbestos was detected in the black mastic beneath.



Photograph 14.

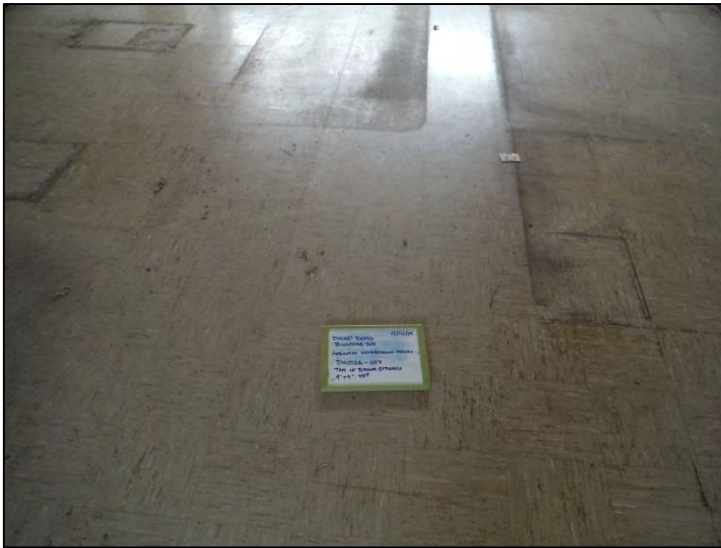
Mastic, suspected to be behind the mirrors in both restrooms of the CERFP Building 301 are presumed to contain asbestos.



Photograph 15.

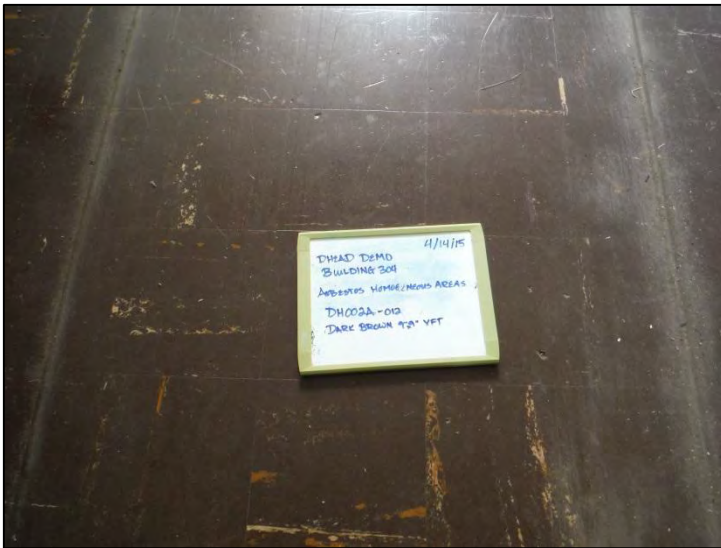
The interior window and door frame caulking found around all windows and doors in concrete walls of the CSMS-1 Building 304 complex were found to contain 3% asbestos.





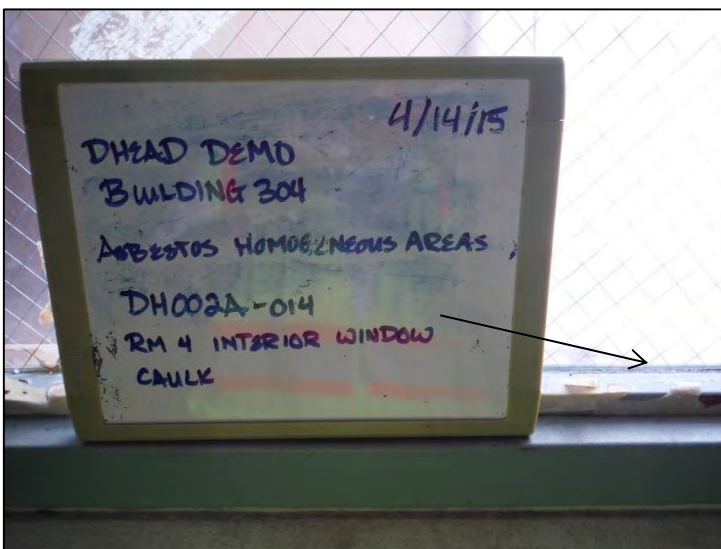
Photograph 16.

The black asphaltic mastic found beneath the tan and brown 9"x9" VFT in the CSMS-1 Building 304 complex was found to contain 3% asbestos. The tan and brown VFT did not contain asbestos.



Photograph 17.

The dark brown 9"x9" and associated black asphaltic mastic beneath, found in Rooms 4, 6, and 7 of the CSMS-1 Building 304 complex were found to contain 2% asbestos.



Photograph 18.

The gray caulking shown by the arrow, found on around the safety glass window panes in Rooms 5 and 6 in the CSMS-1 Building 304 complex were found to contain 2% asbestos.



Photograph 19.

The acoustic ceiling tile backer board found in Rooms 4, 5, 6, 7, 9, 13, and 20 in the CSMS-1 Building 304 complex were found to contain 25% asbestos. The acoustic ceiling tiles and associated mastic did not contain asbestos.



Photograph 20.

A view of the asbestos containing backer board in Room 20 (south paint booth) of the CSMS-1 Building 304 complex. This board was not present in Room 19 (north paint booth).



Photograph 21.

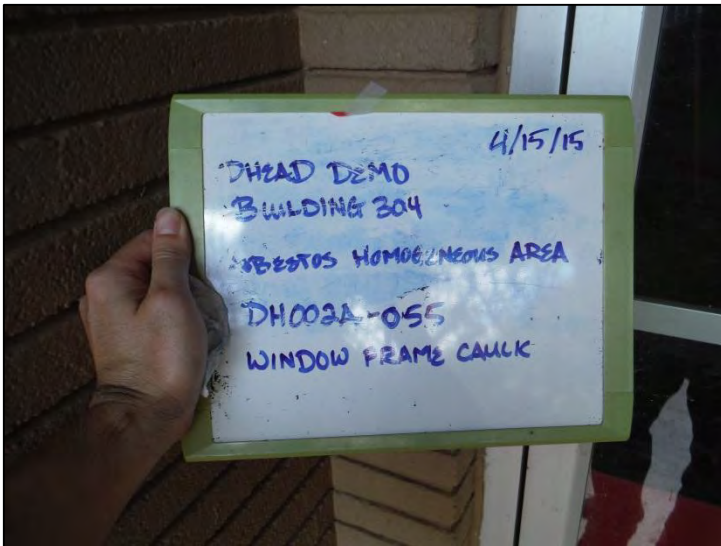
The sink insulation found beneath the kitchen sink in Room 11 of the CSMS-1 Building 304 complex was found to contain 3% asbestos.





Photograph 22.

The gray caulking found around the window panes throughout the southeast wing of CSMS-1 Building 304 complex was found to contain 3% asbestos.



Photograph 23.

The exterior window and door frame caulking used on all window and door frames in concrete walls of the CSMS-1 Building 304 complex was found to contain 2% asbestos.



Photograph 24.

The tan and gray caulking found around the exterior window panes of the Carpenter Shop of the CSMS-1 Building 304 complex was found to contain 2% asbestos.



Photograph 25.

A silver paint is present on the metal roof substrate beneath the white polymer roof coating of the CSMS-1 Building 304 complex. This paint was found to contain 2% asbestos.



Photograph 26.

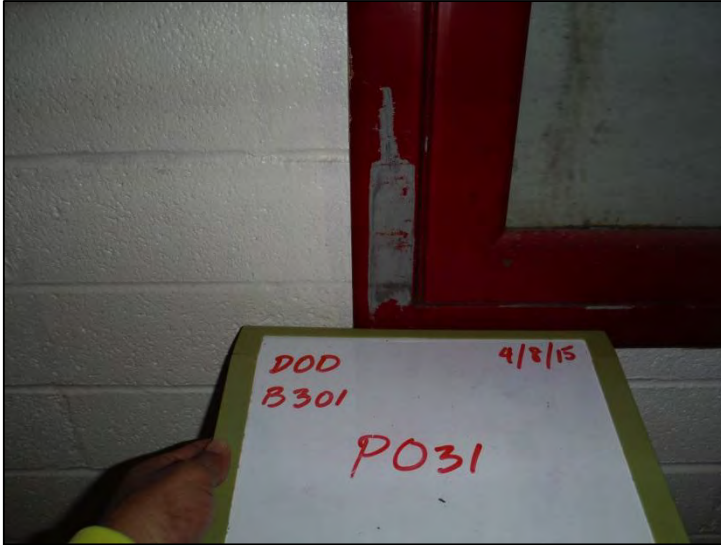
Two metal doors located at the CERFP Building 301, and 22 metal doors located at the CSMS-1 Building 304 complex are assumed to contain asbestos.



Photograph 27.

One vault door located in the CERFP Building 301, and two vault doors located in the CSMS-1 Building 304 are assumed to contain asbestos.





Photograph 28.

The red paint on metal associated with the fire protection equipment in the CERFP Building 301 was found to be LBP.



Photograph 29.

The yellow paint on concrete found on all concrete entry stairs and the red and blue paint found on the north stairs to the CERFP Building 301 were found to be LBP.



Photograph 30.

The faded yellow paint over orange paint on the metal posts, indicated by the arrow, on the south side of the CERFP Building 301 was found to be LBP.



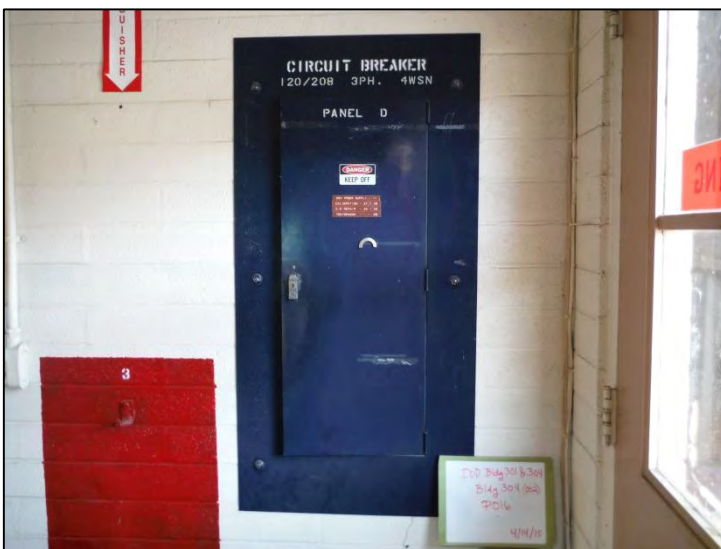
Photograph 31.

The yellow paint on the bases of the rollup doors in Rooms 1, 2, 12, 14, 16, and 17 of the CSMS-1 Building 304 complex was found to contain LBP.



Photograph 32.

The beige/off-white paint on the interior side of metal doors in Room 3 and Room 7 of the CSMS-1 Building 304 complex was found to be LBP.



Photograph 33.

The dark blue paint found on the circuit breaker panels found throughout the CSMS-1 Building 304 complex was found to be LBP.





Photograph 34.

The yellow and black paint found on the railroad rails in the parking lot of the CSMS-1 Building 304 complex was found to be LBP.



Photograph 35.

The silver paint found on the compressors and associated piping in Room 18 of the CSMS-1 Building 304 complex was found to be LBP.



Photograph 36.

The yellow paint found on the overhead crane in Room 18 of the CSMS-1 Building 304 complex was found to be LBP.



Photograph 37.

The sea green paint found on the overhead crane in Room 18 of the CSMS-1 Building 304 complex was found to be LBP.



Photograph 38.

The yellow paint found on the concrete southeast stairs of the CSMS-1 Building 304 complex was found to be LBP.



Photograph 39.

The sand colored paint on all metal exterior surfaces of the CSMS-1 Building 304 complex was found to be LBP.





Photograph 40.

The green paint on concrete found on the base of the grease rack (Building 304B) at the CSMS-1 Building 304 complex was found to be LBP.



Photograph 41.

The yellow paint found on the rails of the grease rack at the CSMS-1 Building 304 complex was found to be LBP.



Photograph 42.

The flaking sand colored paint on the exterior of the Carpenter Shop (Building 304D) at the CSMS-1 Building 304 complex was found to be LBP.



Photograph 43.

The brown paint on the exterior of the Carpenter Shop (Building 304D) door at the CSMS-1 Building 304 complex was found to be LBP.



Photograph 44.

The green paint on metal and wood found in the Battery Shop at the CSMS-1 Building 304 complex was found to be LBP.



Photograph 45.

The yellow paint on the metal post in the Battery Shop at the CSMS-1 Building 304 complex was found to be LBP.





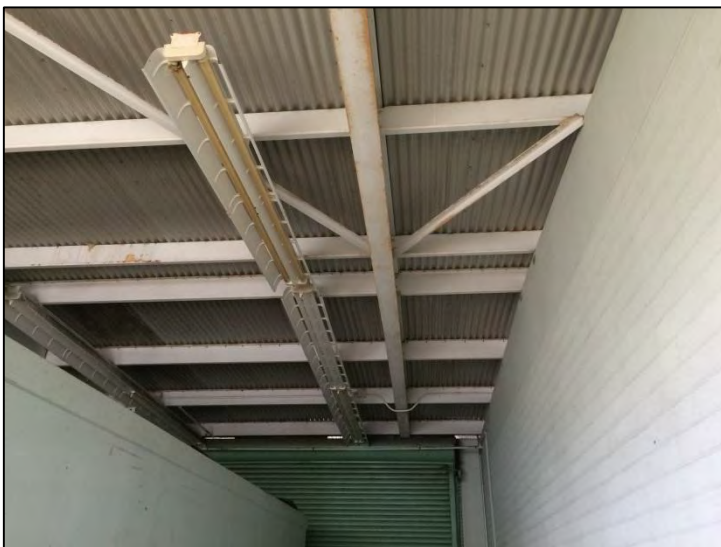
Photograph 46.

The off-white paint found on the interior of the Canvas Repair Shop (Building 304A) at the CSMS-1 Building 304 complex was found to be LBP.



Photograph 47.

The dark brown paint found on the support poles of the lunch and vehicle shelters (Buildings 304F and 304G) at the CSMS-1 Building 304 complex was found to be LBP.



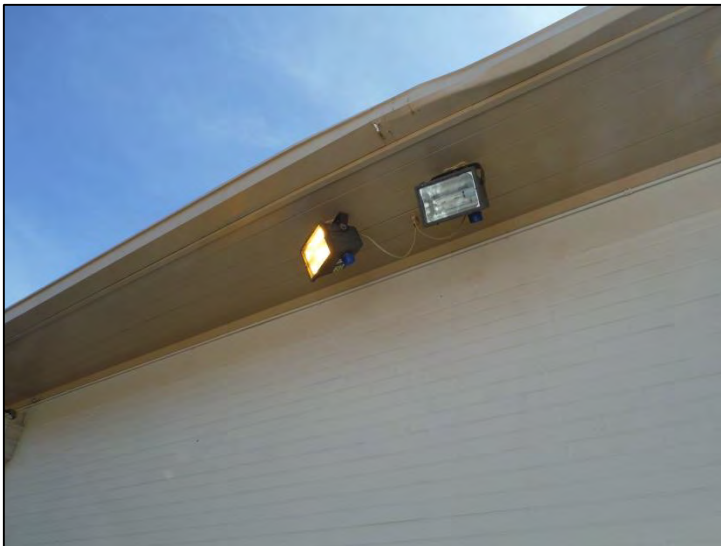
Photograph 48.

During the survey, 304 fluorescent bulbs were observed in the CERFP Building 301 and 528 fluorescent bulbs were observed throughout the CSMS-1 Building 304 complex. These bulbs potentially contain mercury. Their fixtures house potentially PCB containing ballasts.



Photograph 49.

During the survey, six sodium bulbs were observed in the CERFP Building 301, and nine sodium bulbs were observed throughout the CSMS-1 Building 304 complex (indicated by arrow). These bulbs potentially contain mercury. Their fixtures house potentially PCB-containing ballasts.



Photograph 50.

During the survey, four high intensity discharge (HID) lamps were observed in the CERFP Building 301, and 16 HID lamps were observed throughout the CSMS-1 Building 304 complex. These lamps potentially contain mercury. Their fixtures house potentially PCB-containing ballasts.



Photograph 51.

During the survey, 14 in-window air conditioners (ACs) were observed in the CERFP Building 301, and 7 in-window ACs were observed throughout the CSMS-1 Building 304 complex. These ACs potentially contain ozone depleting substances (ODSs).





Photograph 52.

A condenser for the AC unit in the vault within Room 5 of the CSMS-1 Building 304 building was located on the north side of the building. This condenser may contain ODSs.



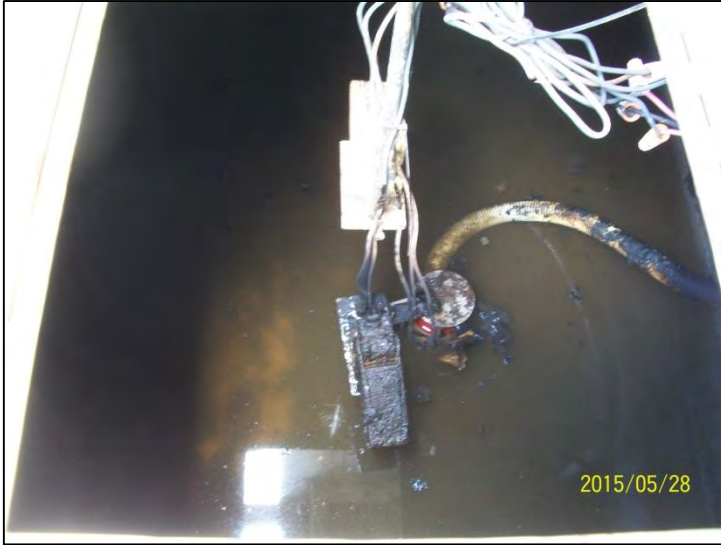
Photograph 53.

A condenser for the AC unit in Room 15 of the CSMS-1 Building 304 building was located on the north side of the building. This condenser may contain ODSs.



Photograph 54.

The interior of the oil-water interceptor unit at the CSMS-1 Building 304 complex. It contained approximately 6 inches of water.



Photograph 55.

The inside of the oil-water separator holding tank at the CSMS-1 Building 304 complex. It contained approximately 6 inches of water.



## **Appendix A: Sample Forms**







Paint Chip Sampling Data Sheet

44

Project: 60340502 DoD Demo, Bldgs. 301 and 304

Project Identifier DH

Page 1 of

Sampler: FK TQ Start Date: 4/6/15

Building: 301

Building ID 001

Sample ID	Sample Location	Substrate	Color	Comments
DH001P-001	Inside door of Rm 16	Wood	White	Quantity Rm 1 - 1 wall + ceiling + door + trim 1240 Condition: <u>poor</u> fair good 4/7
DH001P-002	Inside door of Rm 1	Wood	Black on green & yellow	Quantity 1x3ft on Rm 1 door; 1x2 ft Rm 16 Door 1245 Condition: poor <u>fair</u> good 4/7
DH001P-003	wall of Rm 11	Concrete/CMU	White	Quantity Rm 1 3 walls + Halls 1400 Condition: poor <u>fair</u> good 4/7
DH001P-004	Lower wall in Rm 2	Concrete/CMU	Light Blue	Quantity Rm 1 - 3 walls; lower 4 ft. 1320 Condition: poor <u>fair</u> good 4/7
DH001P-005	Rm 3 left metal conduit cable	Metal	white over light blue	Quantity 170 linear ft Rm 1 1513 Condition: <u>poor</u> fair good 4/8
DH001P-006	One electrical conduit in Rm 1	Metal	Light Blue	Quantity Pipes, 4 ft ea. Rm 1, + Rm 2 20 ft 1300 Condition: poor <u>fair</u> good 4/7
DH001P-007	Rm 2	Wood	Light Blue	Quantity Rm 1 - 1 wall, Rm 2 1 wall 1330 Condition: poor <u>fair</u> good 4/7
DH001P-008	Rm 1	Concrete/CMU	Black	Quantity Rm 1 - 3 walls, lower foot 1310 Condition: poor fair good 4/7
DH001P-009	Rm 12 door	Wood	Beige	Quantity Door 8 + 28 window frames + Hall ceiling 1350 Condition: poor fair good 4/7
DH001P-010	Rm 2	Wood	Light Green	Quantity 60 ft of entire wall underneath 1335 Condition: poor fair good 4/7
DH001P-011	Sign Post	Wood	Dark Brown	Quantity Ext door (2) Both sides 1530 Condition: poor fair good 4/8
DH001P-012	On door frame between Rm 7 & 8	Wood	Light Brown over light blue	Quantity Hall + Rm 10 1405 Condition: poor fair good 4/7

photo  
✓ -  
✓ 0.11  
✓ -  
✓ 0.0044  
✓ -  
✓ -  
✓ 0.0440  
✓ 0.0100  
✓ 0.0370  
✓ 0.0570  
-  
✓ 0.0540



Paint Chip Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier DH Page 2 of

Sampler: FK TQ Start Date: 4/6/15 Building: 301 Building ID 001

Sample ID	Sample Location	Substrate	Color	Comments
DH001P- 013	Ladies restroom	Metal	Light tan	Quantity stalls 1415 Condition: poor fair good 4/7 ✓ 0.44
DH001P- 014	Restroom walls	Tile 12" x 6"	Tan	Quantity 1320 Condition: poor fair good 4/7 ✓ -
DH001P- 015	Shower floor	Tile	Mosaic	Quantity 1325 Condition: poor fair <u>good</u> 4/7 ✓ -
DH001P- 016	Mens restroom by left urinal	Concrete	Pink over green	Quantity 940 Condition: <u>poor</u> <u>fair</u> good 4/7 ✓ 0.0061
DH001P- 017	Womens restroom upper pink trim	Wood	Pink over light green	Quantity 1506 Condition: poor <u>fair</u> good 4/8 ✓ 0.0240
DH001P- 018	Womens restroom elec. conduit cable	Metal	Pink	Quantity 946 Condition: poor <u>fair</u> <u>good</u> 4/8 ✓ -
DH001P- 019	Wall base	Concrete	Dark Brown	Quantity 1400 Condition: poor fair <u>good</u> 4/7 ✓ -
DH001P- 020	In hallway behind water fountain	Concrete	Light Brown	Quantity 953 Condition: poor fair <u>good</u> 4/8 ✓ 0.270
DH001P- 021	Rm 12 left side of entrance.	Concrete	Beige over lt. brown + blue green	Quantity 1088 Condition: <u>poor</u> <u>fair</u> good 4/8 ✓ 0.096
DH001P- 022	Rm 12A conduit under sluk.	Metal	Beige	Quantity 1017 Condition: <u>poor</u> fair <u>good</u> 4/8 ✓ 0.0027
DH001P- 023	Rm 12A Left side of room near door	Drywall	Beige	Quantity 1029 Condition: <u>poor</u> fair good 4/8 ✓ -
DH001P- 024	Rm 12B left side of door	Drywall	White	Quantity 1037 Condition: poor fair good 4/8 ✓ -



Paint Chip Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304

Project Identifier DH

Page 3 of

Sampler: FK TQ Start Date: 4/6/15

Building: 301

Building ID 001

Sample ID	Sample Location	Substrate	Color	Comments
DH001P-025	Vault interior 13A <del>left</del> side of room light	Concrete	offwhite	Quantity 1039 Condition: poor fair <u>good</u> 4/8
DH001P-026	Vault door-right side bottom	Metal	Gray-Dark	Quantity 1048 Condition: poor fair <u>good</u> 4/8
DH001P-027	Vault door-right side of frame (bottom)	Metal	Light Gray	Quantity 1055 Condition: poor fair <u>good</u> 4/8
DH001P-028	Rm 17 Mid left of warehouse	Concrete	Dark Salmon	Quantity 1109 Condition: poor <u>fair</u> good 4/8
DH001P-029	Inside Rm 18 door	Wood	Dark Salmon on white	Quantity 1115 Condition: poor <u>fair</u> good 4/8
DH001P-030	Roll-up door frame	<del>Black</del> Metal	<del>Metal</del> Black	Quantity 1306 Condition: poor <u>fair</u> good 4/8
DH001P-031	Lobby-Fire extinguisher Frame	<del>Red</del> Metal	<del>Metal</del> Red	Quantity 1315 Condition: poor fair <u>good</u> 4/8
DH001P-032	Beige Rm 17 ceiling	Acoustic Tile	Beige	Quantity Condition: poor fair <u>good</u>
DH001P-033	Rm 17 Doors Exterior + interior	Metal	Dark Brown over gray	Quantity 1320 Condition: poor <u>fair</u> good 4/8
DH001P-034	Exterior walls Rm 17 w DD doors	Concrete	offwhite and light green	Quantity 1416 Condition: poor fair good 4/8
DH001P-035	3 stairs-Stripes SW	Concrete	Yellow	Quantity 1338 Condition: <u>poor</u> fair good 4/8
DH001P-036	Ext. Roof	Wood	Tan	Quantity ~36 Condition: <u>poor</u> fair good 4/8

✓ 0.011  
 ✓ 0.080  
 ✓ 0.44  
 ✓ 0.0021  
 ✓  
 ✓  
 ✓ 0.58  
 0.0230  
 0.0004  
 0.0091  
 0.0032  
 5.00  
 0.035



Paint Chip Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304

Project Identifier DH

Page 4 of

Sampler: FK TQ Start Date: 4/6/15

Building: 301

Building ID 001

Sample ID	Sample Location	Substrate	Color	Comments
DH001P-037	<del>Plate up bar</del> Post	Metal	Yellow over orange	Quantity 1399 Condition: poor fair good 4/8
DH001P-038	Parking lot, white stripe 3rd to last stall	Asphalt	White	Quantity 1553 Condition: poor fair good 4/8
DH001P-039	N2 stairs	Concrete	Black and blue	Quantity 1400 Condition: poor fair good 4/8
DH001P-040	NE stairs	Concrete	Blue over Here conc	Quantity <del>1400</del> 1403 Condition: poor fair good 4/8
DH001P-041	NE stairs.	Concrete	Red on conc over blue	Quantity 1405 Condition: poor fair good 4/8
DH001P-042	Flag pole, post	metal	White	Quantity 1544 Condition: poor fair good 4/8
DH001P-043	Gray Parking stripe	Asphalt	Gray	Quantity 1600 Condition: poor fair good 4/8
DH001P-044	Ext room N of dd doors	Metal	Off-White over light green	Quantity 1420 Condition: poor fair good 4/8
DH001P-045	Exterior Right of ent. under first AC	wood	off-white	Quantity 1410 Condition: poor fair good 4/8
DH001P-				Quantity Condition: poor fair good
DH001P-				Quantity Condition: poor fair good
DH001P-				Quantity Condition: poor fair good

5.0 5.7  
0.0060  
0.0170  
0.0960  
1.100  
0.4700  
0.0030  
0.0310  
0.1700



### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 301 Building ID: 001 Page: \_\_\_\_\_

Description: WHITE + ~~BLUE~~ PINK PAINT ON BRICK Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 001 Functional Space: \_\_\_\_\_ Floor: 1 RM 1, 2, 3, 6, 7, 8, 9, 10, 11, 15, 15A, 16, 17, 17B  
 Type (circle one): Surfacing TSI Misc Condition: good poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential L M  H Vibration Potential: L M H Air Erosion Potential: L M H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH001A-001	A	<del>South West</del> E Wall	930a	Date:		<1000
DH001A-001	B	N2 Wall	935a			<1000
DH001A-001	C	S. wall	938a			<5000
DH001A-001	D	Lobby B (Fig) NE Wall	942a			<5000
DH001A-001	E	E wall	946a			>5000
DH001A-001	F	N Wall	949a			>5000
DH001A-001	G	N wall	954a			>5000
DH001A-	H					
DH001A-	I					

Description: WHITE + ~~BLUE~~ PW + JNT COMPOUND Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 002 Functional Space: \_\_\_\_\_ Floor: 1 RM 1  
 Type (circle one): Surfacing TSI Misc Condition: good poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential L M  H Vibration Potential: L M H Air Erosion Potential: L M H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH001A-	A			Date:		<1000
DH001A-	B			Plywood & smooth concrete		<1000
DH001A-	C			Not sampled		<1000
DH001A-	D			Not sampled		5000
DH001A-	E					>5000
DH001A-	F					>5000
DH001A-	G					>5000
DH001A-	H					>5000
DH001A-	I					>5000



### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 301 Building ID: 001 Page: \_\_\_\_\_

Description: GRAY INT WINDOW CALK GLASS Photo?: (Y) N Friable?: F (N)  
 Homogenous Area #: 003 Functional Space: \_\_\_\_\_ Floor: (1) RM 1, 2, 3, 15  
 Type (circle one): Surfacing TSI Misc Condition: good poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential: (D) M H Vibration Potential: L M (H) Air Erosion Potential: L (M) H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH001A-003 A	2	N wall	1002a	Date:		≤1000
DH001A-003 B	15	NW wall	1010a			
DH001A-003 C	15	N wall	1015a			
DH001A-D						<5000
DH001A-E						>5000
DH001A-F						
DH001A-G						
DH001A-H						
DH001A-I						

3%

Description: WHT INT WINDOW CALK FRAME Photo?: (Y) N Friable?: F (N)  
 Homogenous Area #: 004 Functional Space: \_\_\_\_\_ Floor: (1) RM 1, 2, 3, 15  
 Type (circle one): Surfacing TSI Misc Condition: good poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential: (D) M H Vibration Potential: L (M) H Air Erosion Potential: (L) M H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH001A-004 A	2	NW wall	1022a	Date:		≤1000
DH001A-004 B	15	NW wall	1026a			
DH001A-004 C	15	NW wall	1028a			
DH001A- <del>004</del> 15		<del>NW wall</del>	<del>1031a</del>			5000
DH001A-E						>5000
DH001A-F						
DH001A-G						
DH001A-H						
DH001A-I						

ND



### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: BLACK Start Date: \_\_\_\_\_ Building: 301 Building ID: 001 Page: \_\_\_\_\_

Description: BLUE PAINT ON BRICK Photo?:  Y  N Friable?:  F  N  
~~WHITE PAINT ON SANDWICH CONG.~~  
 Homogenous Area #: 005 Functional Space: \_\_\_\_\_ Floor: 1 RM 2, 11, 12  
 Type (circle one): Surfacing TSI Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential L  M  H Vibration Potential:  L  M  H Air Erosion Potential: L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH001A-005 A	1	NW wall	1040	Date: RM 1, 2		(<1000)
DH001A-005 B	2	SW wall	1077			
DH001A-005 C	11	NE wall	1053			
DH001A-D						(<5000 >5000)
DH001A-E						
DH001A-F						
DH001A-G						
DH001A-H						
DH001A-I						

ND

Description: GRAY THRESHOLD LEVELING COMPOUND Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 006 Functional Space: \_\_\_\_\_ Floor: 1 RM 2 + 3 DOORWAY  
 Type (circle one): Surfacing TSI Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential L  M  H Vibration Potential: L  M  H Air Erosion Potential: L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH001A-006 A	2	R SIDE OF DOOR ENT	11059	Date:		(<1000)
DH001A-006 B	3	L SIDE " " "	11089			
DH001A-006 C	3	FRONT OF DOOR "	11100			
DH001A-D						(<5000 >5000)
DH001A-E						
DH001A-F						
DH001A-G						
DH001A-H						
DH001A-I						

ND





### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 301 Building ID: 001 Page: \_\_\_\_\_

Description: BROWN SKIM COAT Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 007 Functional Space: \_\_\_\_\_ Floor: 1 CORRID A, B, LOBBY A, B, 4, 5  
 Type (circle one): Surfacing TSI Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential L  M  H Vibration Potential: L  M  H Air Erosion Potential: L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH001A-007 A	5	CRACK IN FRONT OF DOOR	1120a	Date:		<1000 <5000 >5000
DH001A-007 B	4	NEXT TO DRAIN	1130a			
DH001A-007 C	13	FRONT OF DOORWAY	1150a			
DH001A-007 D	16	SE PART OF ROOM	1122a			
DH001A-007 E	18	IN FRONT OF DOORWAY	1126a			
DH001A-	F					
DH001A-	G					
DH001A-	H					
DH001A-	I					

Description: GRAY CONC SEALANT Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 008 Functional Space: \_\_\_\_\_ Floor: 1 RM 2 + BATH ROOM  
 Type (circle one): Surfacing TSI Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential L  M  H Vibration Potential: L  M  H Air Erosion Potential: L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH001A-008 A	2	IN HALLWAY IN FRONT RM2	1230p	Date:		<1000 5000 >5000
DH001A-008 B	2	" "	1231p			
DH001A-008 C	2	" "	1236p			
DH001A-	D					
DH001A-	E					
DH001A-	F					
DH001A-	G					
DH001A-	H					
DH001A-	I					

CONC = CONCRETE



### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 301 Building ID: 001 Page: \_\_\_\_\_

Description: ~~SLIP~~ SINK CAULK Photo?: (Y) N Friable?: F (N)  
 Homogenous Area #: 009 Functional Space: \_\_\_\_\_ Floor: 1, 2, 3, 12, 13, 4, 5  
 Type (circle one): Surfacing TSI Misc Condition: (good) poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential (L) M H Vibration Potential: L M (H) Air Erosion Potential: L (M) H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH001A- <u>009</u>	A	<u>3</u>	<u>1238 p</u>	Date: _____		
DH001A- <u>009</u>	B	<u>12B</u>	<u>1240 p</u>			<1000
DH001A- <u>009</u>	C	<u>13B</u>	<u>1245 p</u>			<1000
DH001A-	D					>5000
DH001A-	E					>5000
DH001A-	F					>5000
DH001A-	G					>5000
DH001A-	H					>5000
DH001A-	I					>5000

ND

Description: TAN 6"X12" CERAMIC TILE Photo?: (Y) N Friable?: F (N)  
 Homogenous Area #: 010 Functional Space: \_\_\_\_\_ Floor: 1 PM 4 + 5  
 Type (circle one): Surfacing TSI Misc Condition: (good) poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential L M (H) Vibration Potential: L M (H) Air Erosion Potential: (L) M H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH001A- <u>010</u>	A	<u>4</u>	<u>1250 p</u>	Date: _____		
DH001A- <u>010</u>	B	<u>5</u>	<u>100 p</u>			<1000
DH001A- <u>010</u>	C	<u>5</u>	<u>105 p</u>			<1000
DH001A-	D					5000
DH001A-	E					5000
DH001A-	F					>5000
DH001A-	G					>5000
DH001A-	H					>5000
DH001A-	I					>5000

ND



### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 301 Building ID: 001 Page: \_\_\_\_\_

Description: MIRROR MASTIC Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 010 OIL Functional Space: \_\_\_\_\_ Floor: 1 RM 413  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential:  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH001A-	A	PRESUMED ACM		Date:		<1000
DH001A-	B			Inaccessible, not sampled		
DH001A-	C					
DH001A-	D					
DH001A-	E					
DH001A-	F					
DH001A-	G					
DH001A-	H					
DH001A-	I					

Description: STINK ~~CHALK~~ FURNACE Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 012 Functional Space: \_\_\_\_\_ Floor: 1 RM 413  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential:  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH001A-	A	NOT SAMPLED NOT INCLUDED IN REPORT		Date:		<1000
DH001A-	B			Not present, but check		
DH001A-	C					
DH001A-	D					
DH001A-	E					
DH001A-	F					
DH001A-	G					
DH001A-	H					
DH001A-	I					



Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: Start Date: Building: 301 Building ID: 001 Page:

Description: BATH MOSAIC TILE Photo?:  Y N Friable?: F  N  
 Homogenous Area #: 013 Functional Space: Floor: 1 RM 4  
 Type (circle one): Surfacing TSI Misc Condition:  good poor Quantity (LF, SF, CF, or #):  
 Contact Potential L M  H Vibration Potential: L M H Air Erosion Potential: L M H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH001A-013	A	<del>4</del> (SHOWER) LEFT OF ENT	115P	Date:		<1000
DH001A-013	B	1' FAR LEFT CORNER	119P			
DH001A-013	C	5 (SHOWER) RIGHT SIDE MID.	125P			
DH001A-	D					5000
DH001A-	E					>5000
DH001A-	F					
DH001A-	G					
DH001A-	H					
DH001A-	I					

ND

Description: ~~BLACK URINAL INSTALLATION~~ Photo?:  Y N Friable?: F  N  
 Homogenous Area #: 014 Functional Space: Floor: 1 RM 4  
 Type (circle one): Surfacing TSI Misc Condition:  good poor Quantity (LF, SF, CF, or #):  
 Contact Potential  L M H Vibration Potential: L M H Air Erosion Potential: L M H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH001A-014	A	<del>4</del> UNDER URINAL	138P	Date:		<1000
DH001A-	B			Anodized steel, no coating		
DH001A-	C					
DH001A-	D					5000
DH001A-	E					>5000
DH001A-	F					
DH001A-	G					
DH001A-	H					
DH001A-	I					



### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 301 Building ID: 001 Page: \_\_\_\_\_

Description: GRN + WHT WINDOW CALK Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 015 Functional Space: \_\_\_\_\_ Floor: 1 RM 4, 5, 6  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential:  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH001A-015	A	4	140P	4th WINDOW FROM LEFT	Date:	<input checked="" type="radio"/> <1000 <input type="radio"/> <5000 <input type="radio"/> >5000
DH001A-015	B	5	143P	2nd " " "		
DH001A-015	C	6	145P	mid window		
DH001A-	D					
DH001A-	E					
DH001A-	F					
DH001A-	G					
DH001A-	H					
DH001A-	I					

ND

Description: BRWN CONC WALL BASE Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 016 Functional Space: \_\_\_\_\_ Floor: 1 RM 4 + 5  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential:  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH001A-016	A	4	152P	LEFT OF ENT	Date:	<input checked="" type="radio"/> <1000 <input type="radio"/> 5000 <input type="radio"/> >5000
DH001A-016	B	4	154P	UNDER 5th WINDOW		
DH001A-016	C	5	158P	MID OF LEFT WALL		
DH001A-	D					
DH001A-	E					
DH001A-	F					
DH001A-	G					
DH001A-	H					
DH001A-	I					

ND



### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 301 Building ID: 001 Page: \_\_\_\_\_

Description: MOTTLED BROWN 12"X12" VINYL FLR TILE Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 017 Functional Space: \_\_\_\_\_ Floor: RM 6, 11  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH001A-017	A	6	221p	Date: SINGLE LAYER VFT		<1000
DH001A-017	B	11	220p	- 2 LAYERS OF VINYL TILE		<1000
DH001A-017	C	11	222p	" " "		<1000
DH001A-017	D	11	227p	" " LEFT "		<1000
DH001A-	E					>5000
DH001A-	F					>5000
DH001A-	G					>5000
DH001A-	H					>5000
DH001A-	I					>5000

2nd layer  
3%  
mid 2%

Description: BROWN VINYL COBASE COVEBASE Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 018 Functional Space: \_\_\_\_\_ Floor: RM 6, 11  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH001A-018	A	11	233p	Date:		<1000
DH001A-018	B	6	235p	BEHIND DOOR		<1000
DH001A-018	C	6	242p	BROWN STOVE + FRIDGE		<1000
DH001A-	D					5000
DH001A-	E					5000
DH001A-	F					>5000
DH001A-	G					>5000
DH001A-	H					>5000
DH001A-	I					>5000

ND



### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 301 Building ID: 001 Page: \_\_\_\_\_

Description: WHT KITCHEN SINK INSULATION Photo?:  Y  N Friable?: F  N  
 Homogenous Area #: 019 Functional Space: \_\_\_\_\_ Floor: 1 RM 6  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential:  L  M  H Vibration Potential: L  M  H Air Erosion Potential: L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH001A-019 A	6	UNDER KITCHEN SINK	2450	Date:		<1000 >5000 >5000
DH001A-019 B	6	" " " FC	2450			
DH001A-019 C	6	MIDDLS OF SINK	2550			
DH001A-	D					
DH001A-	E					
DH001A-	F					
DH001A-	G					
DH001A-	H					
DH001A-	I					

ND

Description: 9'x9" PINK W BLUE VINYL TILE Photo?:  Y  N Friable?: F  N  
 Homogenous Area #: ~~020~~ 020 Functional Space: \_\_\_\_\_ Floor: 1 RM 7, 8, 9, 10, 13, 15A, 13B  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential: L  M  H Vibration Potential: L  M  H Air Erosion Potential: L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH001A-020 A	8	RIGHT OF DOOR	3000	Date:		<1000 5000 >5000
DH001A-020 B	9	LEFT SIDE MID	3030			
DH001A-020 C	13	RIGHT OF DOOR	3050			
DH001A-	D					
DH001A-	E					
DH001A-	F					
DH001A-	G					
DH001A-	H					
DH001A-	I					

VFF 4!



### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 301 Building ID: 001 Page: \_\_\_\_\_

Description: 9"X9" BRWN W DARK BROWN Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 021 Functional Space: \_\_\_\_\_ Floor: 1 RM 7, 8, 9, 10, 11, 12, 14  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	Ft.²
DH001A-021 A	7	IN FRONT OF DOOR	309p	Date:		<1000 >5000 >5000
DH001A-021 B	7		312p			
DH001A-021 C	7		313p			
DH001A-	D					
DH001A-	E					
DH001A-	F					
DH001A-	G					
DH001A-	H					
DH001A-	I					

ND

Description: 12'X12" TYPE A A.C.T. (188) Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 022 Functional Space: \_\_\_\_\_ Floor: 1 RM 7, 8, 9, 10, 11, 12, 13, 14  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	Ft.²
DH001A-022 A	8	Top right panel <del>(188)</del>	945	Date: TYPE A RANDOM (188)		<1000 (5000) >5000
DH001A-022 B	7	Top left (southwest ceiling)	945	TYPE B GRID (188)		
DH001A-022 C	9	South corner ceiling	945			
DH001A-022 D	11	East corner	945	ADDITIONAL (199)		
DH001A-022 E	13	Mid of room	945	RM 8 (199)		
DH001A-	F			RM 9 (199)		
DH001A-	G			RM 10 9 *inaccessible, but		
DH001A-	H			RM 11 (600)		
DH001A-	I			RM 12 (465)		

ND

RM 14 (400)  
RM 13





### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 301 Building ID: 001 Page: \_\_\_\_\_

Description: 12"x12" TYPE B A.C.T. (12) Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 023 Functional Space: \_\_\_\_\_ Floor: 1 RM 7, 9  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential:  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH001A-023 A	7	Ceiling Mid East of Rm	1005	Date: TYPE B, (6RID) (18)		<input checked="" type="radio"/> <1000 <input type="radio"/> 5000 <input type="radio"/> >5000
DH001A-023 B	12A	" East corner	1005	RM 7 (9)		
DH001A-023 C	12B	" East wall	1005	RM 9 (1)		
DH001A-D				RM 12 (135)		
DH001A-E						
DH001A-F				- nailed to ceiling		
DH001A-G				- white layer		
DH001A-H						
DH001A-I						

Description: CONDUIT BLUE Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 024 Functional Space: \_\_\_\_\_ Floor: 1 RM 11, 13, 9, 12A  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential:  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH001A-024 A	11	East wall	1020	Date:		<input checked="" type="radio"/> <1000 <input type="radio"/> 5000 <input type="radio"/> >5000
DH001A-024 B	12A	South corner	1020			
DH001A-024 C	9	East corner	1020			
DH001A-D						
DH001A-E						
DH001A-F						
DH001A-G						
DH001A-H						
DH001A-I						



Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: Start Date: Building: 301 Building ID: 001 Page:

Description: 12"x12" TAN w BROWN STRIPES VINYL TILE w BLK MASTIC Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 025 Functional Space: Floor: 1 RM 12  
 Type (circle one): Surfacing TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #):  
 Contact Potential L M  H Vibration Potential: L M  H Air Erosion Potential: L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH001A-025	A	Behind front door	1055	Date:		(<1000)
DH001A-025	B	" SW door	1055			
DH001A-025	C	South corner	1055			
DH001A-	D					<5000
DH001A-	E					>5000
DH001A-	F					
DH001A-	G					
DH001A-	H					
DH001A-	I					

✓  
ND

Description: FALSE w DW + JC Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 026 Functional Space: Floor: 1 RM 12, 13  
 Type (circle one): Surfacing TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #):  
 Contact Potential L M  H Vibration Potential: L M  H Air Erosion Potential: L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH001A-026	A	West wall	1100	Date:		(<1000)
DH001A-026	B	SE wall	1100			
DH001A-026	C	NW wall	1100			
DH001A-	D					5000
DH001A-	E					>5000
DH001A-	F					
DH001A-	G					
DH001A-	H					
DH001A-	I					

✓  
ND



Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH
Sampler: Start Date: Building: 301 Building ID: 001 Page:

Description: BLACK COVE BASE BROWN MASTIC Photo?: Y N Friable?: F N
Homogenous Area #: 027 Functional Space: Floor: RM 1, RM 12, 12A, 12B, 14
Type (circle one): Surfacing TSI Misc Condition: good poor Quantity (LF, SF, CF, or #):
Contact Potential L M H Vibration Potential: L M H Air Erosion Potential: L M H

Table with 7 columns: Sample ID, Room, Sample Location, Time, Comments (Color, Texture, etc.), Pht?, ft.². Rows include DH001A-027 A, B, C, D, E, F, G, H, I with locations like West wall, North wall, West wall.

Description: STICK COVER BEIGE TILE BLK MASTIC Photo?: N Friable?: non friable
Homogenous Area #: 028 Functional Space: Floor: RM 12, 13, 14
Type (circle one): Surfacing TSI Misc Condition: good poor Quantity (LF, SF, CF, or #):
Contact Potential L M H Vibration Potential: L M H Air Erosion Potential: L M H

Table with 7 columns: Sample ID, Room, Sample Location, Time, Comments (Color, Texture, etc.), Pht?, ft.². Rows include DH001A-028 A, B, C, D, E, F, G, H, I with locations like N area of room, NE of rm, N of door.

Handwritten checkmark and notes.

Handwritten 'ND' note.

Handwritten 'non friable' note.

Handwritten '2nd layer 5%' note.



Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH
Sampler: Start Date: Building: 301 Building ID: 001 Page:

Description: 12"x12" BLUE VINYL TILE YLW MASTIC BEIGE TILE BLUE MASTIC
Homogenous Area #: 029 Functional Space: Floor: 1 RM 14
Type (circle one): Surfacing TSI Misc Condition: good poor Quantity (LF, SF, CF, or #):
Contact Potential L M H Vibration Potential: L M H Air Erosion Potential: L M H

Table with columns: Sample ID, Room, Sample Location, Time, Comments (Color, Texture, etc.), Pht?, ft.². Rows include DH001A-029 A, B, C, D, E, F, G, H, I.

Description: VAULT SKIM COAT Photo?: Y N Friable?: F N
Homogenous Area #: 030 Functional Space: Floor: 1 RM 15A
Type (circle one): Surfacing TSI Misc Condition: good poor Quantity (LF, SF, CF, or #):
Contact Potential L M H Vibration Potential: L M H Air Erosion Potential: L M H

Table with columns: Sample ID, Room, Sample Location, Time, Comments (Color, Texture, etc.), Pht?, ft.². Rows include DH001A-030 A, B, C, D, E, F, G, H, I.

41.

ND



### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 301 Building ID: 001 Page: \_\_\_\_\_

Description: WHITE LEVELING COMPOUND Photo?:  Y  N Friable?: F  N  
 Homogenous Area #: 031 Functional Space: \_\_\_\_\_ Floor: 1 RM 15  
 Type (circle one): Surfacing TSI  Misc Condition: good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential L M  H Vibration Potential: L M  H Air Erosion Potential: L  M H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH001A-031 A	15	In front of vent 15A	1350	Date:		<1000 >5000 >5000
DH001A-031 B	15					
DH001A-031 C	15					
DH001A-	D					
DH001A-	E					
DH001A-	F					
DH001A-	G					
DH001A-	H					
DH001A-	I					

ND

Description: WHITE & GRN WINDOW CAULK Photo?:  Y  N Friable?: F  N  
 Homogenous Area #: 032 Functional Space: \_\_\_\_\_ Floor: 1 RM 7, 8, 9, 10, 11, 12, 13, 14  
 Type (circle one): Surfacing TSI  Misc Condition: good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential L M H Vibration Potential: L M  H Air Erosion Potential: L M H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH001A-032 A	7	Taken off of AC	1350	Date:		<1000 5000 >5000
DH001A-032 B	8	Right side	1350			
DH001A-032 C	12B	Mid window	1350			
DH001A-	D					
DH001A-	E					
DH001A-	F					
DH001A-	G					
DH001A-	H					
DH001A-	I					

ND



### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 301 Building ID: 001 Page: \_\_\_\_\_

Description: DARK SALMON FLR PAINT Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 033 Functional Space: \_\_\_\_\_ Floor: 1 RM 17  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential:  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH001A-033	A	Entrant of 17A	1555	Date:		<1000 >5000 >5000
DH001A-033	B	E corner				
DH001A-033	C	Mid of room				
DH001A-033	D	West side				
DH001A-033	E	South side				
DH001A-	F					
DH001A-	G					
DH001A-	H					
DH001A-	I					

Description: ACOUSTIC CEILING PANELS Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 034 Functional Space: \_\_\_\_\_ Floor: 1 RM 16, 17  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential:  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH001A-034	A	East bay		Date: 4/24/15		<1000 5000 >5000
DH001A-034	B	↓				
DH001A-034	C	↓				
DH001A-	D					
DH001A-	E					
DH001A-	F					
DH001A-	G					
DH001A-	H					
DH001A-	I					



### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 301 Building ID: 001 Page: \_\_\_\_\_

Description: CONC CRACK SEALANT Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 035 Functional Space: \_\_\_\_\_ Floor: 1 RM 17  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): 100 LF  
 Contact Potential:  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH001A-035	A	17	1410	Mid of room 17		<input checked="" type="radio"/> <1000 <input type="radio"/> 1000-5000 <input type="radio"/> >5000
DH001A-035	B	17		Near double doors		
DH001A-035	C	17		Near RM 16 doors		
DH001A-	D					
DH001A-	E					
DH001A-	F					
DH001A-	G					
DH001A-	H					
DH001A-	I					

ND

Description: ACOUSTIC WALL TILE MASTIC (BLK MASTIC) Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 036 Functional Space: \_\_\_\_\_ Floor: 1 RM 17  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential:  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH001A-036	A	17	1423	East wall		<input checked="" type="radio"/> <1000 <input type="radio"/> 1000-5000 <input type="radio"/> >5000
DH001A-036	B	17		West wall		
DH001A-036	C	17		NW wall		
DH001A-	D					
DH001A-	E					
DH001A-	F					
DH001A-	G					
DH001A-	H					
DH001A-	I					

ND



## Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 301 Building ID: 001 Page: \_\_\_\_\_

Description: MAIN ENTRY CONC PATCH (FIG 7) Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 037 Functional Space: \_\_\_\_\_ Floor: 1 EXT ENTRANCE MAIN  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH001A-037	A	MAIN ENTRY	1515	Date: 4/2/15		<1000 <5000 >5000
DH001A-037	B	Top Stair				
DH001A-037	C	Lower Stair				
DH001A-	D	Ground level				
DH001A-	E					
DH001A-	F					
DH001A-	G					
DH001A-	H					
DH001A-	I					

ND

Description: EXT BRICK Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 038 Functional Space: \_\_\_\_\_ Floor: 1 EXT BRICK  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH001A-038	A	EXT BRICK	1603	Date:		<1000 5000 >5000
DH001A-038	B	NE on bldg				
DH001A-038	C	E on "				
DH001A-038	D	S " "				
DH001A-038	E	SW " "				
DH001A-038	F	N " "				
DH001A-038	G	NE " "				
DH001A-	H	NR " "				
DH001A-	I					

ND





Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH
Sampler: Start Date: Building: 301 Building ID: 001 Page:

Description: MAIN ENTRANCE STAIR TREADS Photo?: Y N Friable?: F N
Homogenous Area #: 039 Functional Space: Floor: MAIN ENT. STAIRS, VA
Type (circle one): Surfacing TSI Misc Condition: good poor Quantity (LF, SF, CF, or #):
Contact Potential L M H Vibration Potential: L M H Air Erosion Potential: L M H

Table with columns: Sample ID, Room, Sample Location, Time, Comments (Color, Texture, etc.), Pht?, ft.². Rows include DH001A-039 A through I with handwritten notes like 'Treads ext.', 'Main', 'West V'.

Description: Roof FLASHING MASTIC Photo?: Y N Friable?: F N
Homogenous Area #: 040 Functional Space: Floor: Roof perimeter
Type (circle one): Surfacing TSI Misc Condition: good poor Quantity (LF, SF, CF, or #):
Contact Potential L M H Vibration Potential: L M H Air Erosion Potential: L M H

Table with columns: Sample ID, Room, Sample Location, Time, Comments (Color, Texture, etc.), Pht?, ft.². Rows include DH001A-040 A through I with handwritten notes like 'front entry', 'No mastic, tar extends to flashing white flashing mastic'.

VB

ND

ND



### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 301 Building ID: 001 Page: \_\_\_\_\_

Description: SHED SHINGLES (OLY MASTIC) Photo?: (Y) N Friable?: F (N)  
 Homogenous Area #: 041 Functional Space: \_\_\_\_\_ Floor: 1 EXT STED  
 Type (circle one): Surfacing TSI (Misc) Condition: (good) poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential L M (H) Vibration Potential: L M (H) Air Erosion Potential: L M (H)

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH001A-041	A	Exterior Shed	1530	South of bay doors		<1000 >5000 >5000
DH001A-041	B	↓	↓			
DH001A-041	C	↓	↓			
DH001A-	D					
DH001A-	E					
DH001A-	F					
DH001A-	G					
DH001A-	H					
DH001A-	I					

ND

Description: TAN PAINT Photo?: Y N Friable?: (P) N  
 Homogenous Area #: 042 Functional Space: \_\_\_\_\_ Floor: 1 RM 12+14  
 Type (circle one): Surfacing TSI (Misc) Condition: (good) poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential L M (H) Vibration Potential: L (M) H Air Erosion Potential: L M (H)

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH001A-042	A	12	1520	SW wall		<1000 (5000) >5000
DH001A-042	B	12	↓	N wall		
DH001A-042	C	12	↓	N wall near entr.		
DH001A-042	D	14	↓	SW wall		
DH001A-042	E	14	↓	SE wall		
DH001A-	F					
DH001A-	G					
DH001A-	H					
DH001A-	I					

ND



### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 301 Building ID: 001 Page: \_\_\_\_\_

Description: WHITE CAULK Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 043 Functional Space: \_\_\_\_\_ Floor: 1 RM 11  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential:  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH001A-043 A	11	N Wall	1052a	Date:		>1000
DH001A-043 B	11	S Wall	1055a			
DH001A-043 C	11	NW Wall	1100a			
DH001A-	D					>5000
DH001A-	E					
DH001A-	F					>5000
DH001A-	G					
DH001A-	H					
DH001A-	I					

ND

Description: High roof field Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 044 Functional Space: High roof Floor: \_\_\_\_\_  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential:  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH001A-044 A	High roof	By S NE loading dock	1320	Date: 4/24/15		>1000
DH001A-044 B	"	↓	↓			
DH001A-044 C	"	↓	↓			
DH001A-	D					5000
DH001A-	E					
DH001A-	F					>5000
DH001A-	G					
DH001A-	H					
DH001A-	I					

ND



Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH
Sampler: Start Date: Building: 301 Building ID: 001 Page:

Description: Low roof field Photo?: Y N Friable?: F N
Homogenous Area #: 045 Functional Space: Low roof Floor:
Type (circle one): Surfacing TSI Misc Condition: good poor Quantity (LF, SF, CF, or #):
Contact Potential L M H Vibration Potential: L M H Air Erosion Potential: L M H

Table with 7 columns: Sample ID, Room, Sample Location, Time, Comments (Color, Texture, etc.), Pht?, ft.². Rows include DH001A-045 A through I with handwritten notes on locations and times.

ND

Description: vent mastic Photo?: Y N Friable?: F N
Homogenous Area #: 046 Functional Space: Low roof Floor:
Type (circle one): Surfacing TSI Misc Condition: good poor Quantity (LF, SF, CF, or #):
Contact Potential L M H Vibration Potential: L M H Air Erosion Potential: L M H

Table with 7 columns: Sample ID, Room, Sample Location, Time, Comments (Color, Texture, etc.), Pht?, ft.². Rows include DH001A-046 A through I with handwritten notes on locations and times.

ND



## Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 301 Building ID: 001 Page: \_\_\_\_\_

Description: AF Photo?: Y N Friable?: F N  
 Homogenous Area #: \_\_\_\_\_ Functional Space: \_\_\_\_\_ Floor: \_\_\_\_\_  
 Type (circle one): Surfacing TSI Misc Condition: good poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential L M H Vibration Potential: L M H Air Erosion Potential: L M H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH001A-	A			Date:		<1000 <5000 >5000
DH001A-	B					
DH001A-	C					
DH001A-	D					
DH001A-	E					
DH001A-	F					
DH001A-	G					
DH001A-	H					
DH001A-	I					

Description: \_\_\_\_\_ Photo?: Y N Friable?: F N  
 Homogenous Area # \_\_\_\_\_ Functional Space: \_\_\_\_\_ Floor: \_\_\_\_\_  
 Type (circle one): Surfacing TSI Misc Condition: good poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential L M H Vibration Potential: L M H Air Erosion Potential: L M H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH001A-	A			Date:		<1000 5000 >5000
DH001A-	B					
DH001A-	C					
DH001A-	D					
DH001A-	E					
DH001A-	F					
DH001A-	G					
DH001A-	H					
DH001A-	I					



Paint Chip Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304

Project Identifier DH

Page 1 of

Sampler: FK TQ Start Date: 4/14/15

Building: 304

Building ID 002

Photo?

Sample ID	Sample Location	Substrate	Color	Comments
DH002P-001	Rollup door interior Rm 18	Metal	Green	Quantity 4/16/15 Condition: <u>poor</u> fair good 0930
DH002P-002	Door frame Rm 4	Metal	Black	Quantity 04/21/15 Condition: poor fair good 1540
DH002P-003	Rollup door base ext. Rm 17	Metal	Yellow over green	Quantity 4/16/15 Condition: <u>poor</u> fair good 0950
DH002P-004	Corner wall of Rm 5 by vault	Concrete (CMU)	Green	Quantity 4/16/15 Condition: <u>poor</u> fair good 0955
DH002P-005	Rm 1 corner by door	Concrete (CMU)	White	Quantity 4/21/15 Condition: poor fair good 1125
DH002P-006	Wall near door of Rm 11	Concrete	Red over pink & green	Quantity 4/21/15 Condition: poor fair good 1245
DH002P-007	Rm 1 Int. Breaker box on wall	Metal	Gray	Quantity 4/16/15 Condition: poor <u>fair</u> good 1015
DH002P-008	Pipes in Rm 11	Metal	White	Quantity 4/21/15 Condition: poor fair good 1300
DH002P-009	Exterior wall of Rm 2A	Drywall	Light Blue	Quantity 4/15/15 Condition: poor <u>fair</u> good 1535
DH002P-010	Center door frame Rm 2A	Wood	Light Blue	Quantity 4/15/15 Condition: poor <u>fair</u> good 1540
DH002P-011	Wall of Rm 2A	Drywall	Green	Quantity 4/16/15 Condition: poor <u>fair</u> good 1025
DH002P-012	Rm 3 Int. Wall by Rm 2	Drywall	White	Quantity 4/16/15 Condition: poor <u>fair</u> good 1035

X 0.45%  
 X 0.37%  
 X 4.9%  
 X 0.0020%  
 X 0.0770%  
 X 0.0140%  
 X  
 X 0.0026%  
 X -  
 X -  
 X 0.19%  
 X 0.17%



Paint Chip Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304

Project Identifier DH

Page 2 of

Sampler: FK TQ Start Date:

Building: 304

Building ID 002

Sample ID	Sample Location	Substrate	Color	Comments
DH002P-013	inside door of Rm 5 frame	Metal	Blue	Quantity 4/16/13 Condition: poor fair good 1255
DH002P-014	Baseboard Rm 2	Wood	Green	Quantity 4/16/15 Condition: poor fair (good) 1305
DH002P-015	Interior Entrance door Rm 3	Metal	Beige over dark brown	Quantity Doors 04/16/15 Condition: (poor) fair good 1320
DH002P-016	Rm 18 Breaker Box	Metal	Dark Blue	Quantity 4/21/15 Condition: poor fair good 1600
DH002P-017	Rm 4 walls by vault door	Concrete	Light Blue	Quantity 04/21/15 Condition: poor fair good 1110
DH002P-018	Rm 7 NE wall near door	Concrete	Beige	Quantity 04/16/15 Condition: poor fair (good) 1325
DH002P-019	Rm 7 inner door	Wood	Beige	Quantity 04/16/15 Condition: poor fair (good) 1330
DH002P-020	Rm 7 DW NW wall	Drywall	Beige	Quantity 04/16/15 Condition: poor fair (good) 1335
DH002P-021	Interior Shower Wall Rm 9	Metal Tile	Beige Yellow	Quantity <del>12" x 6"</del> 4/16/15 Condition: poor (fair) good 1040
DH002P-022	Rm 7 window	Glass	Beige	Quantity 4/16/15 Condition: (poor) fair good 1341
DH002P-023	Rm 6 far door window	Glass	White	Quantity 04/16/15 Condition: poor fair (good) 1345
DH002P-024	Outer door of Rm 6B	Wood	White over green	Quantity 04/21/15 Condition: (poor) fair good 1305

Photo  
 X 0.20%  
 Y 0.068%  
 Y 0.66%  
 X 1.4%  
 X 0.014  
 Y 0.0510  
 Y 0.010  
 Y 0.0030  
 Y -  
 X 0.170  
 Y 0.0055  
 X 0.0250

Amount  
 20%



Paint Chip Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304

Project Identifier: DH

Page 3 of

Sampler: FK TQ Start Date:

Building: 304

Building ID: 002

Sample ID	Sample Location	Substrate	Color	Comments
DH002P-025	Sprinkler system lines outside Rm 20	Metal	Red	Quantity 04/21/15 Condition: poor fair good 1320
DH002P-026	Rm 9 shower door	Wood	Pink	Quantity 04/16/15 Condition: (poor) fair good 1350
DH002P-027	Rm 9 Inside restroom door	Metal	Pink	Quantity 04/16/15 Condition: (poor) fair good 1352
DH002P-028	Rm 9 middle right wall	Concrete	Pink	Quantity 04/16/15 Condition: poor fair (good) 1359
DH002P-029	Shower floor Rm 9	Tile	Beige	Quantity 6" x 6" Condition: poor fair good 4/16/15 1045
DH002P-030	Shower floor Rm 9	Tile	Mosaic	Quantity 4/16/15 Condition: poor fair good 1050
DH002P-031	Wall near sinks, Rm 9	Tile	Tan	Quantity 4" x 4" Condition: poor fair good 4/16/15 1055
DH002P-032	Rm 9 Right side wall	Concrete	Brown-dark <del>over Hgreen</del>	Quantity 4/16/15 Condition: poor fair good 1357
DH002P-033	Rm 16 in bag door	metal	Light Brown over Hgreen	Quantity Door Condition: (poor) fair good 4/16/15 1415
DH002P-034	Parking lot, near front door	Metal	Yellow over black & red	Quantity 4/21/15 Condition: (poor) fair good 1430
DH002P-035	Rm 18 floor stripe	Concrete	Yellow	Quantity 4/21/15 Condition: poor fair good 1350
DH002P-036	cen pr column between roll up doors in Rm 12 ext.	Concrete	Black over yellow & green	Quantity 4/21/15 Condition: (poor) fair good 1405

Y 0.075  
Y 0.048  
X 0.014  
Y 0.009  
Y -  
Y -  
Y 0.0035  
Y -  
Y 0.0510  
Y 20.  
Y 0.0099  
Y 0.946





Paint Chip Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304

Project Identifier DH

Page 4 of

Sampler: FK TQ Start Date: 4/14/15

Building: 304

Building ID 002

Sample ID	Sample Location	Substrate	Color	Comments
DH002P-037	Rm 17 - SE bay door	Metal	Light Blue	Quantity: 4/16/15 1423 Condition: poor fair good Y 0.150
DH002P-038	Rm 18 - Tanks + piping	Metal	Silver	Quantity: 4/16/15 1505 Condition: poor fair good Y 5.0
DH002P-039	Rm 18 wall	Concrete	Bright White	Quantity: 4/16/15 1520 Condition: poor fair good Y 0.02
DH002P-040	Crane rails	Metal	Dark Yellow	Quantity: 4/24/15 1015 Condition: poor fair good Y 0.4
DH002P-041	Crane	Metal	Sea green over red	Quantity: 4/24/15 1018 Condition: poor fair good Y 0.51
DH002P-042	Exterior corner of Rm 12 in front	Concrete Ext.	Sand	Quantity: 4/16/15 1545 Condition: poor fair good Y 0.032
DH002P-043	Exterior of Rm 3, front	Concrete Ext.	Light Brown	Quantity: 4/16/15 1555 Condition: poor fair good Y 0.057
DH002P-044	stairs	Concrete	Yellow	Quantity: 4/17/15 0930 Condition: poor fair good Y 4.3
DH002P-045	Parking lot stripe outside Rm 12	Asphalt	White over yellow	Quantity: 4/17/15 0945 Condition: poor fair good Y 0.14
DH002P-046	Eyes - outside Rm 18	Metal	Light Gray	Quantity: 04/21/15 1415 Condition: poor fair good Y -
DH002P-047	On I-beam outside Rms 364	metal	Sand	Quantity: 4/17/15 1000 Condition: poor fair good Y 1.0
DH002P-048	Wood doors between Rms 6 & 9 (Rm 8)	Wood	Light Brown	Quantity: 4/17/15 1015 Condition: poor fair good X 0.048



Paint Chip Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier DH Page 5 of       
 Sampler: FK TQ Start Date: 4/14/15 Building: 304 Building ID 002

Sample ID	Sample Location	Substrate	Color	Comments
DH002P-049	Exterior wall between Rms 14 & 18	Concrete	Peach Over green	Quantity: 04/17/15 Condition: poor <u>fair</u> good 1020
DH002P-050	Doors - glass window outside Rm 15	Glass	Light Brown	Quantity: 04/17/15 Condition: <u>poor</u> fair good 1025
DH002P-051	Rollup door exterior of Rm 19	Metal	Dark Brown Medium green over light brown	Quantity: 4/17/15 Condition: poor <u>fair</u> good 1125
DH002P-052	Hollard Outside Rm 19	Metal	orange	Quantity: 4/17/15 Condition: <u>poor</u> fair good 1140
DH002P-053	Base of wash rack	Concrete	Green	Quantity: 4/17/15 Condition: <u>poor</u> fair good 1250
DH002P-054	Wash rack - stairs and rail	Metal	Light Yellow	Quantity: 4/17/15 Condition: <u>poor</u> fair good 1300
DH002P-055	Interior - Back wall windowsill Lg Metal Bldg	Metal	Gray	Quantity: 4/17/15 Condition: <u>poor</u> fair good 1310
DH002P-056	Shed Lg Metal Bldg	Metal	Sand	Quantity: 4/17/15 Condition: <u>poor</u> fair good 1330
DH002P-057	Shed - door Lg Metal Bldg	Metal	Light Brown	Quantity: 4/17/15 Condition: <u>poor</u> fair good 1335
DH002P-058	Back Area	Asphalt (New)	White	Quantity: 4/17/15 Condition: poor fair <u>good</u> 1345
DH002P-059	Ext. by rear door Sm/ met Bldg	Metal	Sand	Quantity: 4/17/15 Condition: <u>poor</u> fair good 1400
DH002P-060	Interior Shed-board	Wood	Green	Quantity: 4/17/15 Condition: <u>poor</u> fair good 1350

X  
0.038  
Y  
0.0050  
Y  
0.0420  
X  
0.0019  
Y  
0.500  
Y  
1.8  
Y  
0.4  
Y  
5.0  
Y  
1.3  
Y  
-  
X  
0.057  
Y  
2.3



Paint Chip Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304

Project Identifier DH

Page 6 of

Sampler: FK TQ

Start Date:

Building: 301 304

Building ID 001

Sample ID	Sample Location	Substrate	Color	Comments
DH002P-061	Corner on metal pole Met covering	Metal	Green	Quantity 4/17/15 Condition: <u>poor</u> fair good 1355
DH003P-062	Met covering on wall	Metal	Yellow	Quantity 4/17/15 Condition: <u>poor</u> fair good 1465
DH003P-063	Met covering	Metal	Red	Quantity 4/17/15 Condition: <u>poor</u> fair good 1410
DH002P-064	on ramp Small Met Bldg	Concrete	Yellow	Quantity 4/17/15 Condition: <u>poor</u> fair good 1415
DH003P-065	interior wall S met Bldg	Metal	off-white	Quantity 4/17/15 Condition: <u>poor</u> fair good 1425
DH003P-066	on back door S met Bldg	Metal	Light Brown	Quantity 4/17/15 Condition: <u>poor</u> fair good 1430
DH002P-067	On foundation S met Bldg	Concrete	Light Brown	Quantity 4/17/15 Condition: <u>poor</u> fair good 1435
DH003P-068	On bollard Behind container	<del>Yellow</del> Metal	Yellow	Quantity 7 bollards Condition: <u>poor</u> fair good 1440
DH003P-069	interior wall of container	Metal	Light Blue	Quantity 4/17/15 Condition: poor <u>fair</u> good 1530
DH003P-070	on post of shed	Metal	Dark Brown	Quantity 4/17/15 Condition: <u>poor</u> fair good 1540
DH003P-071	Perimeter of basketball court	Concrete	red	Quantity 4/17/15 Condition: poor <u>fair</u> good 1435
DH003P-072	Basketball court key	Concrete	Blue	Quantity 04/21/15 Condition: <u>poor</u> fair good 1440

Y 2.0  
Y 1.9  
Y 0.018  
Y 0.0028  
Y 1.200  
Y 0.0470  
Y 0.0510  
Y 0.0019  
Y 0.1600  
Y 0.7800  
Y -  
Y -



# Paint Chip Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier DH Page        of       

Sampler: FK TQ Start Date:                      Building: 304 Building ID 002

Sample ID	Sample Location	Substrate	Color	Comments
DH002P-073	Three-point line	Concrete	White	Quantity <u>9/21/15</u> Condition: poor fair good <u>1445</u>
DH002P-074	Rectangle outside Rm18	Concrete	Yellow	Quantity <u>4/21/15</u> Condition: poor fair good <u>1455</u>
DH002P-				Quantity Condition: poor fair good
DH002P-				Quantity Condition: poor fair good
DH002P-				Quantity Condition: poor fair good
DH002P-				Quantity Condition: poor fair good
DH002P-				Quantity Condition: poor fair good
DH002P-				Quantity Condition: poor fair good
DH002P-				Quantity Condition: poor fair good
DH002P-				Quantity Condition: poor fair good
DH002P-				Quantity Condition: poor fair good
DH002P-				Quantity Condition: poor fair good
DH002P-				Quantity Condition: poor fair good

X -  
X -



### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: FK & RS Start Date: \_\_\_\_\_ Building: 304 Building ID: 002 Page: \_\_\_\_\_

Description: White brick & concrete paint (4/16/15) Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 001 Functional Space: Zm 1, 2 Floor: 1  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-001	A	1	1105	Date: White over lt green		<1000
DH002A-001	B	3	1105	- See Plan View Map		
DH002A-001	C	4	1105	4/16/15		>5000
DH002A-001	D	14	1105			
DH002A-001	E	11	1105			
DH002A-001	F	12	1105			>5000
DH002A-001	G	20	1105			
DH002A-	H					
DH002A-	I					

ND

7

Description: Interior window frame concrete crack filler plaster Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 002 Functional Space: \_\_\_\_\_ Floor: 1  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-002	A	1	1250	Date: 4/15/15		<1000
DH002A-002	B	2	1250			
DH002A-002	C	2	1250			
DH002A-	D					5000
DH002A-	E					
DH002A-	F					>5000
DH002A-	G					
DH002A-	H					
DH002A-	I					

ND

7



### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 304 Building ID: 002 Page: \_\_\_\_\_

Description: Interior window frame caulk Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 003 Functional Space: \_\_\_\_\_ Floor: 1  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-003	A	<del>left</del> side of door frame	1430	Date: 4/16/15		<1000
DH002A-003	B	right side of door frame	1430			
DH002A-003	C	right side of w window	1430			
DH002A-003	D	w window right side				<5000
DH002A-003	E	w window				
DH002A-	F					>5000
DH002A-	G					
DH002A-	H					
DH002A-	I					

3%

Description: Silicone crack filler Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 004 Functional Space: \_\_\_\_\_ Floor: 1  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): 2 lf  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-004	A	N corner	1254	Date: 4/15/15		<1000
DH002A-004	B					
DH002A-004	C					
DH002A-	D					5000
DH002A-	E					
DH002A-	F					
DH002A-	G					
DH002A-	H					>5000
DH002A-	I					

ND



### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 304 Building ID: 002 Page: \_\_\_\_\_

Description: Door mastic Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 005 Functional Space: Rm 2A Floor: 1  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): ~22 lf x 2  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-005	A	<del>SB</del> Door Left side	1312	Date: 4/15/15		<1000
DH002A-005	B	SE Door Right side	1312			
DH002A-005	C	SE " Top	1312			
DH002A-	D					<5000
DH002A-	E					
DH002A-	F					>5000
DH002A-	G					
DH002A-	H					
DH002A-	I					

ND

Description: Drywall j JC Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 006 Functional Space: \_\_\_\_\_ Floor: 1  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-006	A	<del>SB</del> wall	1300	Date: 4/15/15		>1000
DH002A-006	B	N Wall	1309			
DH002A-006	C	N. Wall	1309			
DH002A-	D					5000
DH002A-	E					
DH002A-	F					>5000
DH002A-	G					
DH002A-	H					
DH002A-	I					

ND



### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 304 Building ID: 002 Page: \_\_\_\_\_

Description: Tan w/ dark brown 9"x9" VFT Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 007 Functional Space: \_\_\_\_\_ Floor: 1  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-007	A	SE of room	1347	Date: 4/15/15		<1000
DH002A-007	B	N	1348			<1000
DH002A-007	C	midway	1350			<1000
DH002A-	D					<5000
DH002A-	E					>5000
DH002A-	F					>5000
DH002A-	G					>5000
DH002A-	H					>5000
DH002A-	I					>5000

Mastic 3%

Description: Dark brown Covebase Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 008 Functional Space: \_\_\_\_\_ Floor: 1 3  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-008	A	West Wall	1353	Date: 4/15/15		<1000
DH002A-008	B	SE Wall	1407			<1000
DH002A-008	C	West Wall	1542			<1000
DH002A-	D					5000
DH002A-	E					>5000
DH002A-	F					>5000
DH002A-	G					>5000
DH002A-	H					>5000
DH002A-	I					>5000

ND





### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 304 Building ID: 002 Page: \_\_\_\_\_

Description: Type A 2x4 ACT (4/21/15) Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 009 Functional Space: \_\_\_\_\_ Floor: \_\_\_\_\_  
 Type (circle one): Surfacing TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-009 A	5	S area	1302	Date: Room 3 = 70 Ceiling		<1000
DH002A-009 B	11	W Wall	1320	Room 11 = 3		<1000
DH002A-009 C	15	N GRAY	1343	Room 15 = 59		<1000
DH002A-D				Room 15 A = 18		<5000
DH002A-E						>5000
DH002A-F						>5000
DH002A-G						>5000
DH002A-H						>5000
DH002A-I						>5000

Description: Type B 2x4 ACT (4/21/15) Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 010 Functional Space: \_\_\_\_\_ Floor: \_\_\_\_\_  
 Type (circle one): Surfacing TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-010 A	203	E Wall	1310	Date: Room 3 = 2 Ceiling		<1000
DH002A-010 B	15	Middle Area	1405	Room 15 = 11		<1000
DH002A-010 C	15	" "	1405			<1000
DH002A-D						5000
DH002A-E						5000
DH002A-F						>5000
DH002A-G						>5000
DH002A-H						>5000
DH002A-I						>5000

Type A =  
dark worms  
  
Type B:  
light dots  
  
Type C  
1x1  
  
Type D  
2x4 mottled

4x18  
72  
- 25

ND

ND



## Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 304 Building ID: 002 Page: \_\_\_\_\_

Description: conduit mastic Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 011 Functional Space: \_\_\_\_\_ Floor: \_\_\_\_\_  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-	A			Date:		>1000
DH002A-	B			white double stick		
DH002A-	C					>5000 >5000
DH002A-	D	NOT SAMPLED				
DH002A-	E					
DH002A-	F					
DH002A-	G					
DH002A-	H					
DH002A-	I					

Description: Dark brown 9" x 9" VFT Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 012 Functional Space: \_\_\_\_\_ Floor: 1  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-012	A	4		Date: 4/15/15		>1000
DH002A-012	B	6		Inside of W door		
DH002A-012	C	7		W corner		
DH002A-	D					5000 >5000
DH002A-	E					
DH002A-	F					
DH002A-	G					
DH002A-	H					
DH002A-	I					

VFT: 2%  
mastic: 2%



### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 304 Building ID: 002 Page: \_\_\_\_\_

Description: Type C IMI ACT & mastic (4/15/15), 4/ Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 013 Functional Space: \_\_\_\_\_ Floor: \_\_\_\_\_  
 Type (circle one): Surfacing TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-013 A	7	S area of room		Date: ceiling		>1000
DH002A-013 B	7					<5000
DH002A-013 C	4	center	1305	4/2/15		>5000
DH002A-	D					
DH002A-	E					
DH002A-	F					
DH002A-	G					
DH002A-	H					
DH002A-	I					

ND

Description: Room 5 interior window caulk Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 014 Functional Space: \_\_\_\_\_ Floor: 1 Rm 5, 7  
 Type (circle one): Surfacing TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-014 A	5	W window right side		Date: 4/15/15		<1000
DH002A-014 B	5	W window		<del>Grouped w/ 003</del> 4/15/15		5000
DH002A-014 C	5	" middle		4/15/15		>5000
DH002A-	D					
DH002A-	E					
DH002A-	F					
DH002A-	G					
DH002A-	H					
DH002A-	I					

2/



### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 304 Building ID: 002 Page: \_\_\_\_\_

Description: Textured cement Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 015 Functional Space: \_\_\_\_\_ Floor: \_\_\_\_\_  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-015	A	4	1404	Date: 4/15/15		>1000
DH002A-015	B	5	1444			>1000
DH002A-015	C	5A vent	1446			>1000
DH002A-	D					<5000
DH002A-	E					>5000
DH002A-	F					>5000
DH002A-	G					>5000
DH002A-	H					>5000
DH002A-	I					>5000

ND

Description: orange skim coat Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 016 Functional Space: \_\_\_\_\_ Floor: 1 pm 5  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-016	A	5		Date: 4/15		>1000
DH002A-016	B	Passageway	9:30	4/17		>1000
DH002A-016	C	Restroom	9:31			>1000
DH002A-016	D	Entry way	9:39			5000
DH002A-016	E	Passageway	9:43			>5000
DH002A-	F					>5000
DH002A-	G					>5000
DH002A-	H					>5000
DH002A-	I					>5000

PK

ND



### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 304 Building ID: 002 Page: \_\_\_\_\_

Description: plenum insulation (4/21/15) Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 019 017 Functional Space: \_\_\_\_\_ Floor: 1  
 Type (circle one): Surfacing TSI Misc Condition: good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential L  M  H Vibration Potential: L  M  H Air Erosion Potential: L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-017	A	SW area	1250	Date: Ceiling		<1000
DH002A-017	B	E area	1253			<1000
DH002A-017	C	NW area	1257			<1000
DH002A-	D					<5000
DH002A-	E					>5000
DH002A-	F					>5000
DH002A-	G					>5000
DH002A-	H					>5000
DH002A-	I					>5000

ND

Description: bathroom sink caulk (4/16/15) Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 020 018 Functional Space: \_\_\_\_\_ Floor: 1 RM 9  
 Type (circle one): Surfacing TSI Misc Condition: good  poor  Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential L  M  H Vibration Potential: L  M  H Air Erosion Potential: L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-018	A	Top of 2nd sink	1016	Date:		<1000
DH002A-018	B	Top of fourth sink				<1000
DH002A-018	C	6 Bathroom Top of sink				<1000
DH002A-	D					5000
DH002A-	E					5000
DH002A-	F					>5000
DH002A-	G					>5000
DH002A-	H					>5000
DH002A-	I					>5000

ND



### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 304 Building ID: 002 Page: \_\_\_\_\_

Description: ACT Backer Board (4/15/15) Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 019 Functional Space: \_\_\_\_\_ Floor: 1 Rm 5, 4, T, 13  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential:  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-019	A	4	1415	NE corner area of ceiling		<1000
DH002A-019	B	7	1530	SW area		<1000
DH002A-019	C	13	1531	Near RM 6 door		<1000
DH002A-	D					<5000
DH002A-	E					>5000
DH002A-	F					>5000
DH002A-	G					>5000
DH002A-	H					>5000
DH002A-	I					>5000

Description: Flooring treads (4/16/15) Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 020 Functional Space: \_\_\_\_\_ Floor: \_\_\_\_\_  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential:  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-020	A	9	1030	Front of Shower		<1000
DH002A-020	B	14		inside N door		<1000
DH002A-020	C	3		front of entrance		<1000
DH002A-	D					5000
DH002A-	E					>5000
DH002A-	F					>5000
DH002A-	G					>5000
DH002A-	H					>5000
DH002A-	I					>5000

25%  
Pg 1-4

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Pg 1

Bag 2

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ND



### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 304 Building ID: 002 Page: \_\_\_\_\_

Description: Black residual mastic Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 021 Functional Space: \_\_\_\_\_ Floor: \_\_\_\_\_  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

RS

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-021	A	13 Hall	0925	Date: 4/17/15		<1000
DH002A-021	B	13 Hall	0925			<1000
DH002A-021	C	13 Hall	0925			<1000
DH002A-	D					<5000
DH002A-	E					>5000
DH002A-	F					>5000
DH002A-	G					>5000
DH002A-	H					>5000
DH002A-	I					>5000

ND

Description: tan 12" x 6" ceramic tile Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 022 Functional Space: \_\_\_\_\_ Floor: \_\_\_\_\_  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-022	A	Towel Room Rest	1126	Date: 4/16/15		<1000
DH002A-022	B	"	1127			<1000
DH002A-022	C	Restroom	1128			<1000
DH002A-	D					5000
DH002A-	E					5000
DH002A-	F					>5000
DH002A-	G					>5000
DH002A-	H					>5000
DH002A-	I					>5000

ND



### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 304 Building ID: 002 Page: \_\_\_\_\_

Description: Beige 6"x6" ceramic tile Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 023 Functional Space: \_\_\_\_\_ Floor: \_\_\_\_\_  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-023	A	9	0925	Low right corner Date: 4/16/15		>1000
DH002A-023	B	9	0925	Near		<5000
DH002A-023	C	9	0925	Mix left of shower		>5000
DH002A-	D					
DH002A-	E					
DH002A-	F					
DH002A-	G					
DH002A-	H					
DH002A-	I					

ND

Description: Mosaic tile Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 024 Functional Space: \_\_\_\_\_ Floor: \_\_\_\_\_  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-024	A	Shower	1045	SE corner Date: 4/16/15		>1000
DH002A-024	B	Shower	1046	near dr East side		5000
DH002A-024	C	Shower	1100	near drain		>5000
DH002A-	D					
DH002A-	E					
DH002A-	F					
DH002A-	G					
DH002A-	H					
DH002A-	I					

ND





### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 304 Building ID: 002 Page: \_\_\_\_\_

Description: Tan 4"x4" ceramic tile Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 025 Functional Space: \_\_\_\_\_ Floor: \_\_\_\_\_  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-025	A	Restroom	1121	Date: 4/16/15		<1000
DH002A-025	B	"	1123			
DH002A-025	C	"	1124			
DH002A-	D					<5000
DH002A-	E					
DH002A-	F					>5000
DH002A-	G					
DH002A-	H					
DH002A-	I					

ND

Description: pipe insulation Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 026 Functional Space: \_\_\_\_\_ Floor: \_\_\_\_\_  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-026	A	9		Date: 4/16/15		<1000
DH002A-026	B	9				
DH002A-026	C	9				
DH002A-	D					5000
DH002A-	E					
DH002A-	F					>5000
DH002A-	G					
DH002A-	H					
DH002A-	I					

ND



### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 304 Building ID: 002 Page: \_\_\_\_\_

Description: Concrete wall base Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 027 Functional Space: \_\_\_\_\_ Floor: 1  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

FK:

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-027	A	Restroom	954	Date: 4/17		<1000
DH002A-027	B	"	956			
DH002A-027	C	"	958			
DH002A-	D					<5000
DH002A-	E					
DH002A-	F					>5000
DH002A-	G					
DH002A-	H					
DH002A-	I					

ND

Description: MINVY MASTIC Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 028 Functional Space: \_\_\_\_\_ Floor: \_\_\_\_\_  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-	A			Date:		<1000
DH002A-	B					
DH002A-	C					
DH002A-	D					5000
DH002A-	E					
DH002A-	F					>5000
DH002A-	G					
DH002A-	H					
DH002A-	I					



### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 304 Building ID: 002 Page: \_\_\_\_\_

Description: sink insulation (4/16/15) Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 029 Functional Space: \_\_\_\_\_ Floor: \_\_\_\_\_  
 Type (circle one): Surfacing TSI Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-029	A	11	1090	Date:		<1000
DH002A-029	B	11				<5000
DH002A-029	C	11				>5000
DH002A-	D					
DH002A-	E					
DH002A-	F					
DH002A-	G					
DH002A-	H					
DH002A-	I					

128

3%

Description: Type D 2x4 ACT (4/21/15) Photo?:  Y  N Friable?:  F  N  
 Homogenous Area # 030 Functional Space: \_\_\_\_\_ Floor: \_\_\_\_\_  
 Type (circle one): Surfacing TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-030	A	11	1325	Date: Room 11 = 51 Ceiling		<1000
DH002A-030	B	11	1325			5000
DH002A-030	C	11	1338			>5000
DH002A-	D					
DH002A-	E					
DH002A-	F					
DH002A-	G					
DH002A-	H					
DH002A-	I					

ND

6



Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH
Sampler: Start Date: Building: 304 Building ID: 002 Page:

Description: Dust duct Photo?: Y N Friable?: F N
Homogenous Area #: 031 Functional Space: Floor:
Type (circle one): Surfacing TSI Misc Condition: good poor Quantity (LF, SF, CF, or #):
Contact Potential L M H Vibration Potential: L M H Air Erosion Potential: L M H

Table with 7 columns: Sample ID, Room, Sample Location, Time, Comments (Color, Texture, etc.), Pht?, ft.². Rows include DH002A-031 A-I and various sample locations like 'end of vent'.

RS

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Description: Painted concrete North half Photo?: Y N Friable?: F N
Homogenous Area #: 032 Functional Space: Floor:
Type (circle one): Surfacing TSI Misc Condition: good poor Quantity (LF, SF, CF, or #):
Contact Potential L M H Vibration Potential: L M H Air Erosion Potential: L M H

Table with 7 columns: Sample ID, Room, Sample Location, Time, Comments (Color, Texture, etc.), Pht?, ft.². Rows include DH002A-032 A-I and various sample locations like 'South wall near center'.

FK

ND

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### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 304 Building ID: 002 Page: \_\_\_\_\_

Description: Corrugated metal coating Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 033 Functional Space: \_\_\_\_\_ Floor: \_\_\_\_\_  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-033	A	Rm 14		West wall		>1000
DH002A-033	B	Rm 16		East wall		
DH002A-033	C	Rm 17		West wall, north near RD		
DH002A-033	D	Rm 18		East wall, opposite Rm 17		
DH002A-033	E	Rm 20		North wall, middle		
DH002A-033	F	Rm 18		East wall, opposite Rm 15		
DH002A-033	G	Rm 16		East wall, opposite Rm 16		
DH002A-	H					<5000
DH002A-	I					>5000

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Description: wall rivet ~~mat~~ mastic Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 034 Functional Space: \_\_\_\_\_ Floor: Rm 14, 16, 16A, 16B, 17  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-034	A	14	1033	SW wall		>1000
DH002A-034	B	16	1035	SW wall		
DH002A-034	C	17	1035	S wall		
DH002A-	D					5000
DH002A-	E					5000
DH002A-	F					>5000
DH002A-	G					>5000
DH002A-	H					>5000
DH002A-	I					>5000

KS

ND

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 304 Building ID: 002 Page: \_\_\_\_\_

Description: Gap filler Photo?:  Y  N Friable?:  F  N  ?  
 Homogenous Area #: 035 Functional Space: \_\_\_\_\_ Floor: \_\_\_\_\_  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

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Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-	A			Date: <u>Closer inspection shows</u>		<1000
DH002A-	B			<u>that it is fire proofing</u>		
DH002A-	C					
DH002A-	D	<u>NOT SAMPLED</u>				>5000
DH002A-	E					>5000
DH002A-	F					>5000
DH002A-	G					>5000
DH002A-	H					>5000
DH002A-	I					>5000

Description: Drywall jic Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 036 Functional Space: \_\_\_\_\_ Floor: 1  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

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Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A- <u>036</u>	A	<u>15</u>	<u>1118</u>	Date: <u>4/17/15</u>		<1000
DH002A- <u>036</u>	B	<u>15</u>	<u>1115</u>			
DH002A- <u>036</u>	C	<u>15 A</u>	<u>1119</u>			
DH002A-	D					5000
DH002A-	E					5000
DH002A-	F					>5000
DH002A-	G					>5000
DH002A-	H					>5000
DH002A-	I					>5000



### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 304 Building ID: 002 Page: \_\_\_\_\_

Description: Dark brown cone base Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 037 Functional Space: RM 15, 15A Floor: \_\_\_\_\_  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

PS

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-037 A	15	SE WALL	1100	Date: 4/17/15		<1000
DH002A-037 B	15	NW WALL	1100			<1000
DH002A-037 C	15A	Right of door	1100			<1000
DH002A-	D					<5000
DH002A-	E					<5000
DH002A-	F					>5000
DH002A-	G					>5000
DH002A-	H					>5000
DH002A-	I					>5000

ND

Description: Tan 12" x 12" YFT Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 038 Functional Space: 15, 15A Floor: \_\_\_\_\_  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

PK

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-038 A	15	SE center		Date: 4/17/15		<1000
DH002A-038 B	15	NW center				<1000
DH002A-038 C	15A	middle				<1000
DH002A-	D					5000
DH002A-	E					5000
DH002A-	F					>5000
DH002A-	G					>5000
DH002A-	H					>5000
DH002A-	I					>5000

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### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 304 Building ID: 002 Page: \_\_\_\_\_

Description: # interior window caulk Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 039 Functional Space: \_\_\_\_\_ Floor: \_\_\_\_\_  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-039	A	15		Right edge		
DH002A-039	B	15		left edge		
DH002A-039	C	15		Right edge		
DH002A-039	D	5				
DH002A-039	E	6				
DH002A-	F					
DH002A-	G					
DH002A-	H					
DH002A-	I					

Description: Type E 2x4 ACT (4/21/15) Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 040 Functional Space: \_\_\_\_\_ Floor: \_\_\_\_\_  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-040	A	15A	1352	Date: RM 15 A: 2 Ceiling		
DH002A-040	B		1352			
DH002A-040	C		1352			
DH002A-	D					
DH002A-	E					
DH002A-	F					
DH002A-	G					
DH002A-	H					
DH002A-	I					

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 Bag 3  
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Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH
Sampler: Start Date: Building: 304 Building ID: 002 Page:

Description: Door frame caulk Photo?: Y N Friable?: F N
Homogenous Area #: 041 Functional Space: Rm 16 Floor: 16
Type (circle one): Surfacing TSI Misc Condition: good poor Quantity (LF, SF, CF, or #):
Contact Potential L M H Vibration Potential: L M H Air Erosion Potential: L M H

Table with columns: Sample ID, Room, Sample Location, Time, Comments (Color, Texture, etc.), Pht?, ft.². Includes handwritten entries for samples DH002A-041 A through I.

PS

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Description: Partition Wall Photo?: Y N Friable?: F N
Homogenous Area #: 042 Functional Space: Floor: 16A
Type (circle one): Surfacing TSI Misc Condition: good poor Quantity (LF, SF, CF, or #):
Contact Potential L M H Vibration Potential: L M H Air Erosion Potential: L M H

Table with columns: Sample ID, Room, Sample Location, Time, Comments (Color, Texture, etc.), Pht?, ft.². Includes handwritten entries for samples DH002A-042 A through I.

PS

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### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 304 Building ID: 002 Page: \_\_\_\_\_

Description: Type F 2x4 ACT (4/21/15) Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 043 Functional Space: \_\_\_\_\_ Floor: 16A  
 Type (circle one): Surfacing TSI  Misc Condition: good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential L M  H Vibration Potential: L M  H Air Erosion Potential: L M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-043	A	16A	2:15	Date: Ceiling		<1000
DH002A-043	B	16A	1			<5000
DH002A-043	C	16A				>5000
DH002A-	D					
DH002A-	E					
DH002A-	F					
DH002A-	G					
DH002A-	H					
DH002A-	I					

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Description: Red skim coat Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 044 Functional Space: Rm 16B Floor: 16B  
 Type (circle one):  Surfacing TSI Misc Condition: good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential L M  H Vibration Potential: L M  H Air Erosion Potential: L M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-044	A	16B		Date: 4/17/15		>1000
DH002A-044	B	16B				5000
DH002A-044	C	16B				>5000
DH002A-	D					
DH002A-	E					
DH002A-	F					
DH002A-	G					
DH002A-	H					
DH002A-	I					

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### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 304 Building ID: 002 Page: \_\_\_\_\_

Description: Residual caulking Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 045 Functional Space: Rm 16B Floor: \_\_\_\_\_  
 Type (circle one):  Surfacing  TSI  Misc Condition: good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-045	A	16B		East edge, center		
DH002A-045	B	16B		East edge south		
DH002A-045	C	16B		West edge center		
DH002A-	D					
DH002A-	E					
DH002A-	F					
DH002A-	G					
DH002A-	H					
DH002A-	I					

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Description: carpet glue Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 046 Functional Space: Rm 16A Floor: 16A  
 Type (circle one):  Surfacing  TSI  Misc Condition: good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-046	A	16A		NE corner area		
DH002A-046	B	16A		Mid of RM		
DH002A-046	C	16A		N corner near Rm 17		
DH002A-	D					
DH002A-	E					
DH002A-	F					
DH002A-	G					
DH002A-	H					
DH002A-	I					

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ND



### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 304 Building ID: 002 Page: \_\_\_\_\_

Description: Brown mastic Photo?: (Y) N Friable?: F (N)  
 Homogenous Area #: 047 Functional Space: \_\_\_\_\_ Floor: \_\_\_\_\_  
 Type (circle one): Surfacing TSI Misc Condition: good (poor) Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential L (M) H Vibration Potential: L (M) H Air Erosion Potential: L M (H)

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A- <u>047</u>	A	<u>18</u>	<u>1525</u>	Date: <u>4/16/15</u>		>1000
DH002A- <u>047</u>	B	<u>17</u>	<u>1525</u>			<5000
DH002A- <u>047</u>	C	<u>18</u>	<u>1525</u>			>5000
DH002A-	D					
DH002A-	E					
DH002A-	F					
DH002A-	G					
DH002A-	H					
DH002A-	I					

ND

Description: silver paint on compressors Photo?: (Y) N Friable?: F (N)  
 Homogenous Area #: 048 Functional Space: \_\_\_\_\_ Floor: \_\_\_\_\_  
 Type (circle one): Surfacing TSI Misc Condition: good (poor) Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential L M (H) Vibration Potential: L M (H) Air Erosion Potential: L M (H)

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A- <u>048</u>	A	<u>18</u>	<u>1505</u>	Date: <u>4/16/15</u>		>1000
DH002A- <u>048</u>	B		<u>1505</u>			5000
DH002A- <u>048</u>	C	<u>+</u>	<u>1505</u>			>5000
DH002A-	D					
DH002A-	E					
DH002A-	F					
DH002A-	G					
DH002A-	H					
DH002A-	I					

ND



### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 304 Building ID: 002 Page: \_\_\_\_\_

Description: VACUUM EQUIPMENT Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 049 Functional Space: \_\_\_\_\_ Floor: 1 RM 18  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-049	A	18	15:50	Date: 4/24/15		>1000
DH002A-049	B	"	"			<5000
DH002A-049	C	"	"	Originally 81		>5000
DH002A-	D					
DH002A-	E					
DH002A-	F					
DH002A-	G					
DH002A-	H					
DH002A-	I					

Description: FIRE PROOFING Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 050 Functional Space: \_\_\_\_\_ Floor: 1 RM 18  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-050	A	17	1345	Date: 4/17/15		>1000
DH002A-050	B	18	1345			5000
DH002A-050	C	"	1345			>5000
DH002A-	D					
DH002A-	E					
DH002A-	F					
DH002A-	G					
DH002A-	H					
DH002A-	I					



### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: Start Date: Building: 304 Building ID: 002 Page:

Description: WHITE + <sup>GRAY</sup> MASTIC (4/17/15) Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 051 Functional Space: Floor: 1<sup>st</sup> RM 18, 19, 20  
 Type (circle one): Surfacing TSI Misc Condition: good poor Quantity (LF, SF, CF, or #):  
 Contact Potential L M H Vibration Potential: L M H Air Erosion Potential: L M H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-051	A	18 N2 Wall	0950	Date: white sealant on pipe		<1000
DH002A-051	B	18 NE Wall	0950			<1000
DH002A-051	C	20 NW Wall	0950			<1000
DH002A-	D					<5000
DH002A-	E					<5000
DH002A-	F					>5000
DH002A-	G					>5000
DH002A-	H					>5000
DH002A-	I					>5000

25

20

Description: PAINT FILTERS Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 052 Functional Space: Floor: 1<sup>st</sup> RM 20 21?  
 Type (circle one): Surfacing TSI  Misc Condition:  good poor Quantity (LF, SF, CF, or #):  
 Contact Potential L  M H Vibration Potential: L M  H Air Erosion Potential: L M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-052	A	20 SW wall	1020	Date: 4/17/15		<1000
DH002A-052	B	20 NE wall	1020			<1000
DH002A-052	C	19 NE wall	1020			<1000
DH002A-	D					5000
DH002A-	E					5000
DH002A-	F					>5000
DH002A-	G					>5000
DH002A-	H					>5000
DH002A-	I					>5000

25

20



### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 304 Building ID: 002 Page: \_\_\_\_\_

Description: EXTERIOR PAINT ON CONCRETE + BRICK Photo?: (Y) N Friable?: F (N)  
 Homogenous Area #: 053 Functional Space: \_\_\_\_\_ Floor: 1 EXTERIOR  
 Type (circle one): Surfacing TSI Misc Condition: good poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential: L M (H) Vibration Potential: L (M) H Air Erosion Potential: L M (H)

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-053	A	19 exterior	1408	Date: 4/17		<1000
DH002A-053	B	14 exterior	1410			
DH002A-053	C	13	1411			>5000
DH002A-053	D	1 exterior	1414			
DH002A-053	E	near 7, south wall	1416	east end of west wing		>5000
DH002A-053	F	12, NW corner	1420	NW corner		>5000
DH002A-053	G	18	1421	Near center pedestal		
DH002A-	H					
DH002A-	I					

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Description: GRAY WINDOW CAULK Photo?: (Y) N Friable?: F (N)  
 Homogenous Area #: 054 Functional Space: \_\_\_\_\_ Floor: 1 EXT WINDOWS  
 Type (circle one): Surfacing TSI (Misc) Condition: good (poor) Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential: L (M) H Vibration Potential: L M (H) Air Erosion Potential: L (M) H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-054	A	Ext window <del>Room 1 East</del> Rm 1 East	1400	Date: 4/17/15		<1000
DH002A-054	B	Ext window <del>Room 9 SW</del> Rm 9 SW	1400			
DH002A-054	C	Ext window <del>Room 12 NW</del> Rm 12 NW	1400			5000
DH002A-	D					
DH002A-	E					>5000
DH002A-	F					
DH002A-	G					
DH002A-	H					
DH002A-	I					

RS

3%



### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 304 Building ID: 002 Page: \_\_\_\_\_

Description: WINDOW FRAME CAULK EXT Photo?: (Y) N Friable?: F (N)  
 Homogenous Area #: 055 Functional Space: Ext. Windows Floor: \_\_\_\_\_  
 Type (circle one): Surfacing TSI (Misc) Condition: good (poor) Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential (L) M H Vibration Potential: L M (H) Air Erosion Potential: L (M) H

28

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-055	A	5	1300	Date: 4/21/15		<1000
DH002A-055	B	9	1500			
DH002A-055	C	3	1430			
DH002A-	D					<5000
DH002A-	E					
DH002A-	F					>5000
DH002A-	G					
DH002A-	H					
DH002A-	I					

2%

Description: ORANGE FOAM FILLER Photo?: (Y) N Friable?: F (N)  
 Homogenous Area #: 056 Functional Space: \_\_\_\_\_ Floor: 1 EXT FRONT  
 Type (circle one): Surfacing TSI (Misc) Condition: good (poor) Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential (L) M H Vibration Potential: L (M) H Air Erosion Potential: L (M) H

28

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-056	A	Between 3 & 4	1410	Date: 4/21/15		<1000
DH002A-056	B	14	1410			
DH002A-056	C	9	1410			
DH002A-	D					5000
DH002A-	E					
DH002A-	F					>5000
DH002A-	G					
DH002A-	H					
DH002A-	I					

NO

(E)





### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 304 Building ID: 002 Page: \_\_\_\_\_

Description: EXT RIVOT MBSIC (main structure) Photo?: (Y) N Friable?: F (N)  
 Homogenous Area #: 057 Functional Space: \_\_\_\_\_ Floor: \_\_\_\_\_  
 Type (circle one): Surfacing TSI (Misc) Condition: (good) poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential L (M) H Vibration Potential: L (M) H Air Erosion Potential: (L) M H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-057	A	18 ext	1503	Date: 4/21		>1000
DH002A-057	B	20 ext	1510			<5000
DH002A-057	C	17 ext	1513			>5000
DH002A-	D					
DH002A-	E					
DH002A-	F					
DH002A-	G					
DH002A-	H					
DH002A-	I					

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Description: SILVER PRINT INT WOOD SHAP Photo?: (N) N Friable?: (F) N  
 Homogenous Area #: 058 Functional Space: \_\_\_\_\_ Floor: \_\_\_\_\_  
 Type (circle one): Surfacing TSI Misc Condition: good (poor) Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential L M (H) Vibration Potential: L M (H) Air Erosion Potential: L M (H)

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-058	A	Workshed Lg	1520	Date: 4/21		>1000
DH002A-058	B	metal	1523			5000
DH002A-058	C	Bldg	1525			>5000
DH002A-058	D		1527			
DH002A-058	E		1528			
DH002A-	F					
DH002A-	G					
DH002A-	H					
DH002A-	I					

FK

ND



# Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 304 Building ID: 002 Page: \_\_\_\_\_

Description: DUST COLLECTION BAG (PHT) W/AFB Photo?: Y N Friable?: F (N)  
 Homogenous Area #: 059 Functional Space: \_\_\_\_\_ Floor: \_\_\_\_\_  
 Type (circle one): Surfacing TSI Misc Condition: good poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential L M H Vibration Potential: L M H Air Erosion Potential: L M H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-059	A	Lg Mtl Bldg	11:00	Date: 4/21/15		<1000
DH002A-059	B	I	I			
DH002A-059	C	I	I			<5000
DH002A-	D					
DH002A-	E					>5000
DH002A-	F					
DH002A-	G					
DH002A-	H					
DH002A-	I					

ND

Description: EXTERNAL PAINT ON METAL WOODWORK Photo?: Y N Friable?: F N  
 Homogenous Area #: 060 Functional Space: \_\_\_\_\_ Floor: \_\_\_\_\_  
 Type (circle one): Surfacing TSI Misc Condition: good poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential L M H Vibration Potential: L M H Air Erosion Potential: L M H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-060	A	<del>060</del> Woodshed <del>exterior</del> PAINT West side	1529	Date: 4/21/15		<1000
DH002A-060	B	" S near door	1533			
DH002A-060	C	" <del>ext</del> near middle	1535			5000
DH002A-060	D	" N near door	1537			
DH002A-060	E	" mid of extension	1538			>5000
DH002A-	F					
DH002A-	G					
DH002A-	H					
DH002A-	I					

ND

Bag 3





# Suspect Asbestos-Containing Building Material Sampling Data Sheet

Bay 4  
↓

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
Sampler: Start Date: Building: 304 Building ID: 002 Page:

Description: ~~EXT. GRAY WIND DOWN IN DARK~~ EXT. GRAY WIND DOWN IN DARK EG MET Bldg. Photo?:  Y  N Friable?: F  N  
Homogenous Area #: 061 Functional Space: Floor:  
Type (circle one): Surfacing TSI  Misc Condition: good  poor Quantity (LF, SF, CF, or #):  
Contact Potential L  M  H Vibration Potential: L M  H Air Erosion Potential: L M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-061	A	<del>wood shed</del> <u>EG</u> West window	1531	Date: 4/21/15		<1000
DH002A-061	B	" <u>metal</u> East window right side	1534			
DH002A-061	C	" <u>Bldg</u> North window middle	1536			
DH002A-	D					<5000
DH002A-	E					
DH002A-	F					>5000
DH002A-	G					
DH002A-	H					
DH002A-	I					

2/1

Description: EXT. RIVOT CAB (WOOD SHED) (FS) Photo?:  Y  N Friable?: F  N  
Homogenous Area # 062 Functional Space: Floor:  
Type (circle one): Surfacing TSI  Misc Condition: good  poor Quantity (LF, SF, CF, or #):  
Contact Potential L  M  H Vibration Potential: L  H Air Erosion Potential: L  M H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-062	A	<u>small metal bldg.</u> W side, south of door	1058	Date: 4/21/15		<1000
DH002A-062	B	" N side	"			
DH002A-062	C	<u>storage shed</u> E side	"			
DH002A-	D					5000
DH002A-	E					
DH002A-	F					>5000
DH002A-	G					
DH002A-	H					
DH002A-	I					

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### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 304 Building ID: 002 Page: \_\_\_\_\_

Description: EXT METAL PAINT (MAIN) Photo?: (Y) N Friable?: (F) N  
 Homogenous Area #: 063 Functional Space: \_\_\_\_\_ Floor: \_\_\_\_\_  
 Type (circle one): (S) Surfacing TSI Misc Condition: good poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential L M (H) Vibration Potential: L M H Air Erosion Potential: L M H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-063	A	ext exterior 16A	9:53	Date: 4/21/15		<1000
DH002A-063	B	19 exterior	"			
DH002A-063	C	15 exterior	"			
DH002A-063	D	19/20 exterior	"	middle of north wall		<5000
DH002A-063	E	18 extiv	"	SW corner by shower		>5000
DH002A-063	F	18 exterior	"	N of bay 3		
DH002A-063	G	18 exterior	"	N of bay 6		
DH002A-	H					
DH002A-	I					

ND

Description: EXT METAL SIDING PAINT (FS) Photo?: (Y) N Friable?: (F) N  
 Homogenous Area #: 064 Functional Space: \_\_\_\_\_ Floor: \_\_\_\_\_  
 Type (circle one): (S) Surfacing TSI Misc Condition: good (poor) Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential L M (H) Vibration Potential: L M (H) Air Erosion Potential: L M (H)

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-064	A	small metal bldg ← storage E side	1049	Date: 4/21/15		<1000
DH002A-064	B	SMB	"	S side E side		
DH002A-064	C	SMB	"	S side		
DH002A-	D					5000
DH002A-	E					>5000
DH002A-	F					
DH002A-	G					
DH002A-	H					
DH002A-	I					

ND



### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: 4/21/15 Building: 304 Building ID: 002 Page: \_\_\_\_\_

Description: EXT PIVOT ~~MASTIC~~ woodshop Photo?: (Y) N Friable?: F (N)  
 Homogenous Area #: 065 Functional Space: \_\_\_\_\_ Floor: \_\_\_\_\_  
 Type (circle one): Surfacing TSI (Misc) Condition: good (poor) Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential (L) M H Vibration Potential: L M (H) Air Erosion Potential: L (M) H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-065	A	SW wall ext	1045	Date: 4/21/15		<1000
DH002A-065	B	S wall ext				<1000
DH002A-065	C	E wall ext				<1000
DH002A-	D					<5000
DH002A-	E					>5000
DH002A-	F					>5000
DH002A-	G					>5000
DH002A-	H					>5000
DH002A-	I					>5000

ND

Description: RM2A N DDDR MASTIC Photo?: (Y) N Friable?: F (N)  
 Homogenous Area #: 066 Functional Space: \_\_\_\_\_ Floor: 1 RM2A  
 Type (circle one): Surfacing TSI (Misc) Condition: good (poor) Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential L (M) H Vibration Potential: L M (H) Air Erosion Potential: L (M) H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-066	A	NW left side	1314	Date: 4/15/15		<1000
DH002A-066	B	NW right side	1323			<1000
DH002A-066	C	NW left side	1323			<1000
DH002A-	D					5000
DH002A-	E					>5000
DH002A-	F					>5000
DH002A-	G					>5000
DH002A-	H					>5000
DH002A-	I					>5000

ND



## Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 304 Building ID: 002 Page: \_\_\_\_\_

Description: RM 2A S DOOR FRAME CAULK Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 067 Functional Space: \_\_\_\_\_ Floor: 1 RM 2A  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-067	A	RM 2A	1325	Date: 4/15/15		<1000
DH002A-067	B	Left side	I			
DH002A-067	C	Top side				
DH002A-	D	Right side				<5000
DH002A-	E					
DH002A-	F					>5000
DH002A-	G					
DH002A-	H					
DH002A-	I					

ND

Description: CONC CRACK FILLER Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 068 Functional Space: \_\_\_\_\_ Floor: \_\_\_\_\_  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-068	A	2A	1335	Date: 4/15/15		<1000
DH002A-068	B	SW wall	1335			
DH002A-068	C	NW wall	1335			<5000
DH002A-068	D	W corner	1456			
DH002A-068	E	NE corner	1459			>5000
DH002A-	F	Opposite NE corner				
DH002A-	G					
DH002A-	H					
DH002A-	I					

ND



## Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 304 Building ID: 002 Page: \_\_\_\_\_

Description: 069 Wall Insulation Photo?:  Y  N Friable?:  F  ~~X~~

Homogenous Area #: 069 Functional Space: \_\_\_\_\_ Floor: \_\_\_\_\_

Type (circle one): Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_

Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-069	A	SW wall		Date: 4/15/15		<1000
DH002A-069	B	" "				
DH002A-069	C	N wall				
DH002A-	D					<5000
DH002A-	E					
DH002A-	F					>5000
DH002A-	G					
DH002A-	H					
DH002A-	I					

ND

Description: Mosaic Tile Under Belgian with black mastic Photo?:  Y  N Friable?:  F  N

Homogenous Area #: 070 Functional Space: \_\_\_\_\_ Floor: \_\_\_\_\_

Type (circle one): Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_

Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-070	A	Shower Restroom SE corner	1100	Date: 4/16/15		<1000
DH002A-070	B	Restroom NE corner	1100			
DH002A-070	C	" E near drain	1104			
DH002A-	D					5000
DH002A-	E					
DH002A-	F					>5000
DH002A-	G					
DH002A-	H					
DH002A-	I					

ND



### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 304 Building ID: 002 Page: \_\_\_\_\_

Description: Dry wall insulation Photo?: (Y) N Friable?: (F) N  
 Homogenous Area #: 071 Functional Space: Rm 15, 15A Floor: \_\_\_\_\_  
 Type (circle one): Surfacing (TSI) Misc Condition: (good) poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential (L) M H Vibration Potential: L (M) H Air Erosion Potential: (L) M H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-071	A	Rm 15A	1122	1123 Date: 4/17		<1000
DH002A-071	B	15	1122			
DH002A-071	C	15A	1124			
DH002A-	D					<5000
DH002A-	E					
DH002A-	F					>5000
DH002A-	G					
DH002A-	H					
DH002A-	I					

ND

Description: Window glass caulking Photo?: (Y) N Friable?: F (N)  
 Homogenous Area #: 072 Functional Space: 15, 16A Floor: \_\_\_\_\_  
 Type (circle one): Surfacing TSI (Misc) Condition: good (poor) Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential (L) M H Vibration Potential: L M (H) Air Erosion Potential: (L) M H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-072	A	Rm 15		Date: 4/17/15		<1000
DH002A-072	B	16A				
DH002A-072	C	16A				
DH002A-	D					5000
DH002A-	E					
DH002A-	F					>5000
DH002A-	G					
DH002A-	H					
DH002A-	I					

ND





### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 304 Building ID: 002 Page: \_\_\_\_\_

Description: PLENUM INSTALLATION Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 073 Functional Space: \_\_\_\_\_ Floor: \_\_\_\_\_  
 Type (circle one): Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-073	A	15	1430	Date: 4/21/15		<1000
DH002A-073	B	15				<1000
DH002A-073	C	15A				<1000
DH002A-	D					<5000
DH002A-	E					>5000
DH002A-	F					>5000
DH002A-	G					>5000
DH002A-	H					>5000
DH002A-	I					>5000

ND

Description: SKIPPING CONTAINER MASTIC Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 074 Functional Space: \_\_\_\_\_ Floor: \_\_\_\_\_  
 Type (circle one): Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): 280 LF  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-074	A	CONTAINER	1435	Date: 4/21/15		<1000
DH002A-074	B	I				<1000
DH002A-074	C					<1000
DH002A-	D					5000
DH002A-	E					5000
DH002A-	F					>5000
DH002A-	G					>5000
DH002A-	H					>5000
DH002A-	I					>5000

ND



## Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 304 Building ID: 002 Page: \_\_\_\_\_

Description: DEADMAN PAD CAULK (4/21/15) Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 075 Functional Space: \_\_\_\_\_ Floor: \_\_\_\_\_  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential:  M  H Vibration Potential:  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-075	A	CONC PAD ANCHOR SEE MAP	1528	Date: See Plan View Fig 1		<1000
DH002A-075	B	I	I			
DH002A-075	C	I				
DH002A-	D					<5000
DH002A-	E					
DH002A-	F					>5000
DH002A-	G					
DH002A-	H					
DH002A-	I					

ND

Description: Vacuum system roofing mastic Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 076 Functional Space: roof Floor: \_\_\_\_\_  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential:  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-076	A	Roof SW <del>of</del> vacuum pipe	1015	Date: 4/24		<1000
DH002A-076	B	Roof vacuum plate	1015			
DH002A-076	C	SW wall exterior of IE	1535			
DH002A-	D					5000
DH002A-	E					
DH002A-	F					>5000
DH002A-	G					
DH002A-	H					
DH002A-	I					

ND



### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 304 Building ID: 002 Page: \_\_\_\_\_

Description: High roof coating Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 077 Functional Space: Roof (ingh) Floor: Roof  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential:  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-077	A	roof	1000	Date: 4/24/15		<1000
DH002A-077	B	roof	101530			
DH002A-077	C	roof	1600			
DH002A-	D					<5000
DH002A-	E					
DH002A-	F					>5000
DH002A-	G					
DH002A-	H					
DH002A-	I					

2%

Description: white paint 3-pt. line Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 078 Functional Space: exterior Floor: \_\_\_\_\_  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential:  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A-078	A	exterior	1030	Date: 4/24/15		<1000
DH002A-078	B	"	1030			
DH002A-078	C	"	1030			
DH002A-	D					5000
DH002A-	E					
DH002A-	F					>5000
DH002A-	G					
DH002A-	H					
DH002A-	I					

ND



### Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 304 Building ID: 002 Page: \_\_\_\_\_

Description: Container roof Photo?: (Y) N ← overview Friable?: F (N)  
 Homogenous Area #: 079 Functional Space: Container Floor: \_\_\_\_\_  
 Type (circle one): Surfacing TSI (Misc) Condition: (good) poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential (L) M H Vibration Potential: L M (H) Air Erosion Potential: L M (H)

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A- <u>079</u>	A	<u>Shipping cont.</u>	<u>15:40</u>	Date: <u>4/24/15</u>		<1000
DH002A- <u>079</u>	B	"	"			<1000
DH002A- <u>079</u>	C	"	"			<1000
DH002A-	D					<5000
DH002A-	E					<5000
DH002A-	F					>5000
DH002A-	G					>5000
DH002A-	H					>5000
DH002A-	I					>5000

(ND)

Description: woodshop roof Photo?: (Y) N Friable?: F (N)  
 Homogenous Area #: 080 Functional Space: Woodshop Floor: \_\_\_\_\_  
 Type (circle one): Surfacing TSI (Misc) Condition: good (poor) Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential (L) M H Vibration Potential: L M (H) Air Erosion Potential: L M (H)

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A- <u>080</u>	A	<u>woodshop</u>	<u>15:15</u>	Date: <u>4/24/15</u>		<1000
DH002A- <u>080</u>	B	<u>SE end NE end</u>				<1000
DH002A- <u>080</u>	C	<u>middle</u>				<1000
DH002A-	D	<u>SE end</u>				5000
DH002A-	E					5000
DH002A-	F					>5000
DH002A-	G					>5000
DH002A-	H					>5000
DH002A-	I					>5000

(ND)



## Suspect Asbestos-Containing Building Material Sampling Data Sheet

Project: 60340502 DoD Demo, Bldgs. 301 and 304 Project Identifier: DH  
 Sampler: \_\_\_\_\_ Start Date: \_\_\_\_\_ Building: 304 Building ID: 002 Page: \_\_\_\_\_

Description: Vacuum hose Photo?:  Y  N Friable?:  F  N  
 Homogenous Area #: 081 Functional Space: Rm 18 Floor: \_\_\_\_\_  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A- 081	A	18	15:45	Date: 4/24/15	-	<1000
DH002A- 081	B	18	"	see 49		<1000
DH002A- 081	C	18	"			<1000
DH002A-	D					<5000
DH002A-	E					>5000
DH002A-	F			see 049		>5000
DH002A-	G					>5000
DH002A-	H			081 not included in report		>5000
DH002A-	I					>5000

ND

Description: vent pipe mastic Photo?:  Y  N Friable?:  F  N  
 Homogenous Area # 082 Functional Space: roof Floor: \_\_\_\_\_  
 Type (circle one):  Surfacing  TSI  Misc Condition:  good  poor Quantity (LF, SF, CF, or #): \_\_\_\_\_  
 Contact Potential  L  M  H Vibration Potential:  L  M  H Air Erosion Potential:  L  M  H

Sample ID	Room	Sample Location	Time	Comments (Color, Texture, etc.)	Pht?	ft. <sup>2</sup>
DH002A- 082	A	low roof	14:16cc	Date: 4/24		>1000
DH002A- 082	B	"	↓			>1000
DH002A- 082	C	"				>1000
DH002A-	D					5000
DH002A-	E					5000
DH002A-	F					>5000
DH002A-	G					>5000
DH002A-	H					>5000
DH002A-	I					>5000

ND

## **Appendix B: Summary of Sampling**



**Table B-1: CERFP Building 301 Asbestos Samples**

Homog. Material Number *	Sample Information			Material Description	Locations	Friable/ Nonfriable	Type	Condition	Contact Potential	Vibration Potential	Air Erosion Potential	Figure #
	ID	Date	Results									
001	DH001A-001A	4/7/2015	ND	White & Pink Paint on Brick	Room 1, Southeast Wall	Nonfriable	Misc	Good	High	Medium	Medium	3
	DH001A-001B	4/7/2015	ND		Room 3, Northeast Wall							5
	DH001A-001C	4/7/2015	ND		Room 5, Southeast Wall							6
	DH001A-001D	4/7/2015	ND		Lobby B, Northeast Wall							13
	DH001A-001E	4/7/2015	ND		Room 17, East Wall							14
	DH001A-001F	4/7/2015	ND		Room 17B, Northwest Wall							14
	DH001A-001G	4/7/2015	ND		Room 15, North Wall							13
003	DH001A-003A	4/7/2015	ND	Gray Interior Window Pane Caulk	Room 2, North Wall	Nonfriable	Misc	Good	Low	High	Medium	4
	DH001A-003B	4/7/2015	2 % Chrysotile		Room 15, Northwest Wall							13
	DH001A-003C	4/7/2015	Not Analyzed		Room 3, North Wall							5
004	DH001A-004A	4/7/2015	ND	White Window Frame Caulk	Room 2, Northwest Wall	Nonfriable	Misc	Good	Low	Medium	Low	4
	DH001A-004B	4/7/2015	ND		Room 15, Northwest Wall							13
	DH001A-004C	4/7/2015	ND		Room 15, Northwest Wall							13
005	DH001A-005A	4/7/2015	ND	Blue & Black Paint on Brick	Room 1, Northwest Wall	Nonfriable	Misc	Good	High	Medium	Medium	3
	DH001A-005B	4/7/2015	ND		Room 2, Southwest Wall							4
	DH001A-005C	4/7/2015	ND		Room 11, Northeast Wall							9
006	DH001A-006A	4/7/2015	ND	Gray Threshold Leveling Compound	Room 2, Right side of Door Entrance	Nonfriable	Misc	Good	High	High	Medium	4
	DH001A-006B	4/7/2015	ND		Room 3, Left side of Door Entrance							5
	DH001A-006C	4/7/2015	ND		Room 3, Front of Door Entrance							5
007	DH001A-007A	4/7/2015	ND	Brown Skim Coat	Room 5, Crack in Front of Door	Friable	Misc	Good	High	High	Medium	6
	DH001A-007B	4/7/2015	ND		Room 4, Next to Drain							6
	DH001A-007C	4/7/2015	ND		Room 13, Front of Doorway							11
	DH001A-007D	4/7/2015	ND		Room 16, Southeast Part of Room							14
	DH001A-007E	4/7/2015	ND		Room 18, In front of Doorway							14
008	DH001A-008A	4/7/2015	ND	Gray Concrete Sealant	Room 2, In Hallway In Front Room 2	Nonfriable	Misc	Good	High	Medium	Medium	4
	DH001A-008B	4/7/2015	ND		Room 2, In Hallway In Front Room 2							4
	DH001A-008C	4/7/2015	ND		Room 2, In Hallway In Front Room 2							4
009	DH001A-009A	4/7/2015	ND	Sink Caulk	Room 3, Top of Sink	Nonfriable	Misc	Good	Low	High	Medium	5
	DH001A-009B	4/7/2015	ND		Room 12B, Top of Sink							10
	DH001A-009C	4/7/2015	ND		Room 13B, Top of Sink							11
010	DH001A-010A	4/7/2015	ND	Tan 6" x 12" Ceramic Tile	Room 4, Front Wall in Bathroom	Nonfriable	Misc	Good	High	High	Low	6
	DH001A-010B	4/7/2015	ND		Room 5, In Bath							6
	DH001A-010C	4/7/2015	ND		Room 5, In Bath							6
011	-	4/7/2015	Presumed	Mirror Mastic	Room 4 and Room 5, Restrooms	Nonfriable	Misc	Good	Low	Low	Low	6
013	DH001A-013A	4/7/2015	ND	Mosaic Bath Tile	Room 4, Shower Left of Entrance	Nonfriable	Misc	Good	High	High	Medium	6
	DH001A-013B	4/7/2015	ND		Room 4, Shower Far Left Corner							6
	DH001A-013C	4/7/2015	ND		Room 5, Shower Right Side Middle							6
015	DH001A-015A	4/7/2015	ND	Green & White Window Caulk	Room 4, Fourth window from Left	Nonfriable	Misc	Good	Low	High	High	6
	DH001A-015B	4/7/2015	ND		Room 5, Second Window from Left							6
	DH001A-015C	4/7/2015	ND		Room 6, Middle of Window Frame							7
016	DH001A-016A	4/7/2015	ND	Brown Concrete Wall Base	Room 4, Left of Entrance	Nonfriable	Misc	Good	Medium	Medium	Medium	6
	DH001A-016B	4/7/2015	ND		Room 4, Under 5th Window							6
	DH001A-016C	4/7/2015	ND		Room 5, Mid of Left Wall							6
017	DH001A-017A	4/7/2015	ND	Layer 1: Brown 12" x 12" Vinyl Floor Tile; Layer 2: Yellow Soft Mastic; Layer 3: Brown Vinyl Tile; Layer 4: Black Asphaltic Mastic	Room 6, Left Side of Front Counter	Nonfriable	Misc	Good	High	High	Medium	7
	DH001A-017B	4/7/2015	Layer 3: 3% Chrysotile; Layer 4: 2% Chrysotile		Room 11, Left Side Under Desk							9
	DH001A-017C	4/7/2015	Not Analyzed		Room 11, Under Right Window							9
	DH001A-017D	4/7/2015	Not Analyzed		Room 11, Under Left Window							9
018	DH001A-018A	4/7/2015	ND	Brown Vinyl Covebase	Room 11, Behind Door	Nonfriable	Misc	Good	Low	Medium	Low	9
	DH001A-018B	4/7/2015	ND		Room 6, Behind Door							7
	DH001A-018C	4/7/2015	ND		Room 6, Between Stove and Fridge							7
019	DH001A-019A	4/7/2015	ND	White Kitchen Sink Insulation	Room 6, Under Kitchen Sink	Friable	Surfacing	Good	Low	High	Medium	7
	DH001A-019B	4/7/2015	ND		Room 6, Under Kitchen Sink							7
	DH001A-019C	4/7/2015	ND		Room 6, Middle of Sink							7
020	DH001A-020A	4/7/2015	Layer 1: 4% Chrysotile	Layer 1: Pink/blue Vinyl Tile; Layer 2: Black Asphaltic Mastic	Room 8, Right of Door	Nonfriable	Misc	Good	High	High	Medium	7
	DH001A-020B	4/7/2015	Layer 1: 5% Chrysotile		Room 9, Left Side Middle							8
	DH001A-020C	4/7/2015	Layer 1: 5% Chrysotile		Room 13, Right of Door							11
021	DH001A-021A	4/7/2015	ND	9" x 9" Brown with Dark Brown Tile	Room 7, In front of Door	Nonfriable	Misc	Good	High	High	Medium	7
	DH001A-021B	4/7/2015	ND		Room 7, In front of Door							7
	DH001A-021C	4/7/2015	ND		Room 7, In front of Door							7
022	DH001A-022A	4/9/2015	ND	12" x 12" Type A A.C.T.	Room 8, South Top Right Panel	Nonfriable	Misc	Good	Low	Medium	High	7
	DH001A-022B	4/9/2015	ND		Room 7, Top Left / SE Ceiling							7
	DH001A-022C	4/9/2015	ND		Room 9, South Corner Ceiling							8
	DH001A-022D	4/9/2015	ND		Room 11, East Corner							9
	DH001A-022E	4/9/2015	ND		Room 13, Middle of Room							11
023	DH001A-023A	4/9/2015	ND	12" x 12" Type B A.C.T.	Room 7, Ceiling Middle East of Room	Nonfriable	Misc	Good	Low	Medium	High	7
	DH001A-023B	4/9/2015	ND		Room 12A, Ceiling East End							10
	DH001A-023C	4/9/2015	ND		Room 12B, Ceiling Middle East Wall							10



**Table B-1 cont.: CERFP Building 301 Asbestos Samples**

Homog. Material Number *	Sample Information			Material Description	Locations	Friable/ Nonfriable	Type	Condition	Contact Potential	Vibration Potential	Air Erosion Potential	Figure #
	ID	Date	Results									
024	DH001A-024A	4/9/2015	ND	Conduit Glue	Room 11, East Wall	Nonfriable	Misc	Poor	Medium	Medium	Medium	9
	DH001A-024B	4/9/2015	ND		Room 12A, South Corner							10
	DH001A-024C	4/9/2015	ND		Room 9, East Corner							8
025	DH001A-025A	4/9/2015	ND	12" x 12" Brown with Dark Brown Tile	Room 12, Behind Front Door	Nonfriable	Misc	Good	High	High	Medium	10
	DH001A-025B	4/9/2015	ND		Room 12B, Behind Southwest Door							10
	DH001A-025C	4/9/2015	ND		Room 12A, South Corner							10
026	DH001A-026A	4/9/2015	ND	False W DW & JC	Room 12, West Wall	Friable	Misc	Good	High	High	Medium	10
	DH001A-026B	4/9/2015	ND		Room 13, Southeast Wall							11
	DH001A-026C	4/9/2015	ND		Room 13B, Northwest Wall							11
027	DH001A-027A	4/9/2015	ND	Black Covebase and Brown Mastic	Room 12A, West Wall	Nonfriable	Misc	Good	Medium	Medium	Low	10
	DH001A-027B	4/9/2015	ND		Room 14, North Wall							12
	DH001A-027C	4/9/2015	ND		Room 14, West Wall							12
028	DH001A-028A	4/9/2015	Layer 2: 5% Chrysotile	Layer 1: Tan thin soft mastic; Layer 2: Beige with yellow/blue specks tile; Layer 3: Black asphaltic mastic; (DH001A-028B only) Layer 4: Light gray brittle material	Room 14, North area of room	Nonfriable	Misc	Good	Low	Medium	Low	12
	DH001A-028B	4/9/2015	Layer 2: 5% Chrysotile		Room 14, Northeast of room							12
	DH001A-028C	4/9/2015	Layer 2: 4% Chrysotile		Room 14, North of door							12
029	DH001A-029A	4/9/2015	ND**	12"x12" Blue Vinyl Floor Tile	Room 14, North area of room	Nonfriable	Misc	Good	High	High	Medium	12
	DH001A-029B	4/9/2015	ND		Room 14, Northeast of room							12
	DH001A-029C	4/9/2015	ND		Room 14, North of door							12
030	DH001A-030A	4/9/2015	ND	Vault Skim Coat	Room 15A, Vault right of entrance	Friable	Misc	Good	High	High	Medium	13
	DH001A-030B	4/9/2015	ND		Room 15A, Vault left of entrance							13
	DH001A-030C	4/9/2015	ND		Room 15A, Middle of Far Wall							13
031	DH001A-031A	4/9/2015	ND	White Leveling Compound	Room 15, In front of vault 15A	Friable	Misc	Poor	High	High	Medium	13
	DH001A-031B	4/9/2015	ND		Room 15, In front of vault 15A							13
	DH001A-031C	4/9/2015	ND		Room 15, In front of vault 15A							13
032	DH001A-032A	4/9/2015	ND	White and Green Window Caulk	Room 7, Taken off of AC	Nonfriable	Misc	Poor	Low	High	Low	7
	DH001A-032B	4/9/2015	ND		Room 8, Right Side							7
	DH001A-032C	4/9/2015	ND		Room 12B, Middle of Window Frame							10
033	DH001A-033A	4/9/2015	ND	Dark Salmon Floor Paint	Room 17, In front of 17A	Nonfriable	Misc	Good	High	High	Medium	14
	DH001A-033B	4/9/2015	ND		Room 17, East Corner							14
	DH001A-033C	4/9/2015	ND		Room 17, Middle of Room							14
	DH001A-033D	4/9/2015	ND		Room 17, West Side							14
	DH001A-033E	4/9/2015	ND		Room 17, South Side							14
034	DH001A-034A	4/24/2015	ND	Cementitious Wood Fiber Ceiling Tiles	Room 17, North Bay	Friable	Misc	Good	Low	High	High	14
	DH001A-034B	4/24/2015	ND		Room 17, North Bay							14
	DH001A-034C	4/24/2015	ND		Room 17, North Bay							14
035	DH001A-035A	4/9/2015	ND	Concrete Crack Sealant	Room 17, Middle of Room	Nonfriable	Misc	Good	High	High	Medium	14
	DH001A-035B	4/9/2015	ND		Room 17, Near Double Doors							14
	DH001A-035C	4/9/2015	ND		Room 17, Near Room 16 Doors							14
036	DH001A-036A	4/9/2015	ND	Residual Wall Tile Mastic	Room 17, East Wall	Nonfriable	Misc	Good	Medium	Medium	Medium	14
	DH001A-036B	4/9/2015	ND		Room 17, West Wall							14
	DH001A-036C	4/9/2015	ND		Room 17, Northwest Wall							14
037	DH001A-037A	4/9/2015	ND	Gray Brittle Concrete Patch	Main Entrance, Top Stair	Nonfriable	Misc	Good	Medium	Medium	Medium	8
	DH001A-037B	4/9/2015	ND		Main Entrance, Lower Stair							8
	DH001A-037C	4/9/2015	ND		Main Entrance, Ground Level							8
038	DH001A-038A	4/9/2015	ND	Exterior Brick: Layer 1: White Soft Material with Paint; Layer 2: Gray Hard Material with Paint	Northeast end of Building, Southeast corner	Nonfriable	Misc	Good	High	High	High	11
	DH001A-038B	4/9/2015	ND		Southeast side of Building, North end							9
	DH001A-038C	4/9/2015	ND		Southeast side of Building, South end							6
	DH001A-038D	4/9/2015	ND		Northwest side of Building, Outside of Room 2							4
	DH001A-038E	4/9/2015	ND		Northwest side of Building, Outside of Room 17B							14
	DH001A-038F	4/9/2015	ND		Northeast side of Building, Outside of Room 17A							14
	DH001A-038G	4/9/2015	ND		Northwest side of Building, Outside of Room 15							13
039	DH001A-039A	4/9/2015	ND	Layer 1: Black Material with Paint; Layer 2: Light Gray Brittle Material	Exterior Stair Treads, Northeast entrance	Nonfriable	Misc	Poor	High	High	High	11
	DH001A-039B	4/9/2015	ND		Exterior Stair Treads, Southeast entrance							8
	DH001A-039C	4/9/2015	ND		Exterior Stair Treads, Southwest entrance							6
040	DH001A-040A	4/24/2015	ND	Roof Flashing Mastic	Front entry	Nonfriable	Misc	Good	Low	High	Medium	15
	DH001A-040B	4/24/2015	ND		Front entry							15
	DH001A-040C	4/24/2015	ND		Front entry							15
041	DH001A-041A	4/9/2015	ND	Layer 1: Black Asphaltic Fibrous Materials with Granules; Layer 2: Black Asphaltic Mastic	South of Bay Doors	Nonfriable	Misc	Good	Medium	High	High	14
	DH001A-041B	4/9/2015	ND		Middle							14
	DH001A-041C	4/9/2015	ND		Right							14
042	DH001A-042A	4/9/2015	ND	Tan interior paint on brick	Room 12, Southwest Wall	Nonfriable	Misc	Good	High	Medium	High	10
	DH001A-042B	4/9/2015	ND		Room 12, North Wall							10
	DH001A-042C	4/9/2015	ND		Room 12, North Wall near Entrance							10
	DH001A-042D	4/9/2015	ND		Room 14, Southwest Wall							12
	DH001A-042E	4/9/2015	ND		Room 14, Southeast Wall							12
043	DH001A-043A	4/7/2015	ND	White Caulk	Room, 11 North Wall	Nonfriable	Misc	Poor	Low	Medium	Medium	9
	DH001A-043B	4/7/2015	ND		Room 11, South Wall							9
	DH001A-043C	4/7/2015	ND		Room 11, Northwest wall							9

**Table B-1 cont.: CERFP Building 301 Asbestos Samples**

Homog. Material Number *	Sample Information			Material Description	Locations	Friable/ Nonfriable	Type	Condition	Contact Potential	Vibration Potential	Air Erosion Potential	Figure #
	ID	Date	Results									
044	DH001A-044A	4/24/2015	ND	High Roof Field	By North loading dock	Nonfriable	Misc	Good	Low	High	High	15
	DH001A-044B	4/24/2015	ND		By North loading dock							15
	DH001A-044C	4/24/2015	ND		By North loading dock							15
045	DH001A-045A	4/24/2015	ND	Low Roof Field	Northeast end of office wing, southeast corner	Nonfriable	Misc	Good	Low	High	High	15
	DH001A-045B	4/24/2015	ND		Northeast end of office wing, middle							15
	DH001A-045C	4/24/2015	ND		Northeast end of the office wing, north corner							15
046	DH001A-046A	4/24/2015	ND	Vent Mastic	Northeast end of the office wing, vent pipe	Nonfriable	Misc	Good	Low	High	High	15
	DH001A-046B	4/24/2015	ND		Northeast end of the office wing, vent pipe							15
	DH001A-046C	4/24/2015	ND		Northeast end of the office wing, vent pipe							15

\*Homogeneous Material Numbers 2, 12, and 14 were not used in this survey.

\*\*A piece of the beige 9"x9" vinyl floor tile sampled as homogeneous area 28 was adhered to the back of the blue 12"x12" vinyl floor tile in sample DH001A-029A. The beige tile was treated as a separate later and was found to contain asbestos.

**bold** indicates asbestos containing or presumed asbestos containing material

- = Not sampled
- % = percent
- AC = air conditioning
- ACT = acoustic ceiling tile
- ID = identification
- ND = nondetect
- TSI = thermal system insulation
- VFT = vinyl floor tile



Table B-2: CSMS-1 Building 304 Asbestos Samples

Homog. Material Number *	Sample Information			Material Description	Locations	Friable/ Nonfriable	Type	Condition	Contact Potential	Vibration Potential	Air Erosion Potential	Figure #
	ID	Date	Results									
001	DH002A-001A	4/16/2015	ND	White brick and concrete paint	Left side of roll up door in Room 1	Nonfriable	Misc	Poor	High	Low	Medium	17
	DH002A-001B	4/16/2015	ND		Room 3, Right wall							19
	DH002A-001C	4/16/2015	ND		Room 4, Right wall							19
	DH002A-001D	4/16/2015	ND		Room 14, Right side of door							25
	DH002A-001E	4/16/2015	ND		Room 11, Right side of door							24
	DH002A-001F	4/16/2015	ND		Room 12, Right side of door							24
	DH002A-001G	4/16/2015	ND		Room 20, South corner							32
002	DH002A-002A	4/15/2015	ND	Concrete crack filler	Room 1, East corner	Friable	Misc	Good	High	Medium	Medium	17
	DH002A-002B	4/15/2015	ND		Room 2, West corner							18
	DH002A-002C	4/15/2015	ND		Room 2, West corner							18
003	DH002A-003A	4/16/2015	3% chrysotile	Interior window and door frame caulking	Room 11, right side of door frame	Nonfriable	Misc	Poor	High	High	Low	24
	DH002A-003B	4/16/2015	Not analyzed		Room 5, left side of door frame							20
	DH002A-003C	4/16/2015	Not analyzed		Room 12, Right side of west window							24
004	DH002A-004A	4/15/2015	ND	Silicone crack filler	Room 1, North corner at 6 ft.	Nonfriable	Misc	Poor	Low	Medium	Low	17
	DH002A-004B	4/15/2015	ND		Room 1, North corner at 4 ft.							17
	DH002A-004C	4/15/2015	ND		Room 1, North corner at 3 ft.							17
005	DH002A-005A	4/15/2015	ND	Door mastic	Room 2, Southeast door, left side	Nonfriable	Misc	Good	High	High	High	18
	DH002A-005B	4/15/2015	ND		Room 2, Southeast door, right side							18
	DH002A-005C	4/15/2015	ND		Room 2, Southeast door, top							18
006	DH002A-006A	4/15/2015	ND	Drywall and joint compound	Room 6, South wall	Friable	Misc	Good	High	High	Medium	22
	DH002A-006B	4/15/2015	ND		Room 3, North wall							19
	DH002A-006C	4/15/2015	ND		Room 7, North wall							22
007	DH002A-007A	4/15/2015	Layer 1: ND Layer 2: 3% chrysotile	Layer 1: Tan with Dark Brown Streaks 9"x9" VFT Layer 2: Black asphaltic mastic	Room 3, Southeast corner of the room	Nonfriable	Misc	Good	High	High	High	19
	DH002A-007B	4/15/2015	Layer 1: ND Layer 2: Not Analyzed		Room 3, North side of the room							19
	DH002A-007C	4/15/2015	Layer 1: ND Layer 2: Not Analyzed		Room 3, Center							19
008	DH002A-008A	4/15/2015	ND	Dark brown covebase	Room 3, West wall	Nonfriable	Misc	Good	High	High	Low	19
	DH002A-008B	4/15/2015	ND		Room 4, Southeast wall							19
	DH002A-008C	4/15/2015	ND		Room 6, West wall							22
009	DH002A-009A	4/21/2015	ND	Type A 2'x4' ACT	Room 5, South end	Friable	Misc	Good	Low	Medium	High	20
	DH002A-009B	4/21/2015	ND		Room 11, Near west wall							24
	DH002A-009C	4/21/2015	ND		Room 15, North end							26
010	DH002A-010A	4/21/2015	ND	Type B 2'x4' ACT	Room 3, East wall	Friable	Misc	Poor	Low	Medium	High	19
	DH002A-010B	4/21/2015	ND		Room 15, Near center							26
	DH002A-010C	4/21/2015	ND		Room 15, Near center							26
012	DH002A-012A	4/15/2015	Layer 1: 2% chrysotile Layer 2: 2% Chrysotile	Layer 1: Dark brown 9"x9" VFT Layer 2: Black asphaltic mastic	Room 4, South end	Nonfriable	Misc	Good	High	High	High	19
	DH002A-012B	4/15/2015	Not analyzed		Room 6, Inside of west door							22
	DH002A-012C	4/15/2015	Not analyzed		Room 7, West corner							22
013	DH002A-013A	4/15/2015	ND	Type C 12"x12" ACT and Brown Mastic	Room 7, South end	Friable	Misc	Good	Low	Medium	High	19
	DH002A-013B	4/15/2015	ND		Room 7, South end							22
	DH002A-013C	4/15/2015	ND		Room 4, Center of room							22

Table B-2 cont.: CSMS-1 Building 304 Asbestos Samples

Homog. Material Number *	Sample Information			Material Description	Locations	Friable/ Nonfriable	Type	Condition	Contact Potential	Vibration Potential	Air Erosion Potential	Figure #
	ID	Date	Results									
014	DH002A-014A	4/15/2015	<1% chrysotile	Interior window frame caulk	Room 5, West window, right side	Nonfriable	Misc	Good	Med	High	Medium	20
	DH002A-014B	4/15/2015	2% chrysotile		Room 6, West window, left side							22
	DH002A-014C	4/15/2015	Not analyzed		Room 6, West window, middle							22
015	DH002A-015A	4/15/2015	ND	Textured cement	Room 4, Northwest corner, wall shared with vault	Nonfriable	Misc	Good	High	High	High	19
	DH002A-015B	4/15/2015	ND		Room 5, Northwest wall shared with vault							20
	DH002A-015C	4/15/2015	ND		Room 5A, West vault wall							20
016	DH002A-016A	4/15/2015	ND	Orange skim coat	Room 5, Near center	Nonfriable	Misc	Good	High	High	High	20
	DH002A-016B	4/17/2015	ND		Passageway, East end in front of Room 4							19
	DH002A-016C	4/17/2015	ND		Restroom near urinals							23
	DH002A-016D	4/17/2015	ND		Entry way, East corner							21
017	DH002A-017A	4/21/2015	ND	Plenum insulation	Room 5, Southwest end	Friable	TSI	Good	Low	Medium	Medium	20
	DH002A-017B	4/21/2015	ND		Room 5, East end							20
	DH002A-017C	4/21/2015	ND		Room 5, Northwest end							20
018	DH002A-018A	4/16/2015	ND	Bathroom sink caulk	Room 9, Top of 2nd sink	Nonfriable	Misc	Poor	Med	High	Medium	23
	DH002A-018B	4/16/2015	ND		Room 9, Top of 4th sink							23
	DH002A-018C	4/16/2015	ND		Room 6, Top of sink							22
019	DH002A-019A	4/15/2015	25% chrysotile	ACT Backerboard	Room 4, Northeast area of ceiling	Friable	Misc	Good	Low	Medium	Medium	19
	DH002A-019B	4/15/2015	Not analyzed		Room 7, Southwest area							22
	DH002A-019C	4/15/2015	Not analyzed		Room 13, Near Room 6 entry door							21
020	DH002A-020A	4/16/2015	ND	Floor treads	Room 9, Front of shower	Nonfriable	Misc	Good	High	High	High	23
	DH002A-020B	4/16/2015	ND		Room 14, Inside north door							25
	DH002A-020C	4/16/2015	ND		Room 3, In front of door							19
021	DH002A-021A	4/17/2015	ND	Black residual mastic	Room 13 Hallway, Northeast side wall	Nonfriable	Misc	Good	Med	Medium	High	21
	DH002A-021B	4/17/2015	ND		Room 13 Hallway, Northeast side wall							21
	DH002A-021C	4/17/2015	ND		Room 13 Hallway, Northeast side wall							21
022	DH002A-022A	4/16/2015	ND	Tan 12"x6" ceramic tile	Restroom, Towel room, south wall	Nonfriable	Misc	Good	High	Medium	Low	23
	DH002A-022B	4/16/2015	ND		Restroom Shower room							23
	DH002A-022C	4/16/2015	ND		Restroom, East wall							23
023	DH002A-023A	4/16/2015	ND	Beige 6"x6" ceramic tile	Room 9, Shower, front right corner	Nonfriable	Misc	Good	High	Medium	Low	23
	DH002A-023B	4/16/2015	ND		Room 9, Shower, Near right front corner							23
	DH002A-023C	4/16/2015	ND		Room 9, Shower, back left corner							23
024	DH002A-024A	4/16/2015	ND	Mosaic tile	Room 9, Shower, Southeast corner	Nonfriable	Misc	Good	Med	Medium	Low	23
	DH002A-024B	4/16/2015	ND		Room 9, Shower, East side							23
	DH002A-024C	4/16/2015	ND		Room 9, Shower, Near drain							23
025	DH002A-025A	4/16/2015	ND	Tan 4"x4" ceramic tile	Room 9, Near sink	Nonfriable	Misc	Good	High	Medium	Low	23
	DH002A-025B	4/16/2015	ND		Room 9, Near urinal							23
	DH002A-025C	4/16/2015	ND		Room 9, Southeast wall							23
026	DH002A-026A	4/16/2015	ND	Pipe insulation	Room 9, Northwest end	Friable	TSI	Poor	High	High	Medium	23
	DH002A-026B	4/16/2015	ND		Room 9, Middle of pipe							23
	DH002A-026C	4/16/2015	ND		Room 9, Southeast end of pipe							23
027	DH002A-027A	4/17/2015	ND	Concrete wall base	Room 9, West wall, north end	Nonfriable	Misc	Good	Med	High	Medium	23
	DH002A-027B	4/17/2015	ND		Room 9, Southeast end of pipe							23
	DH002A-027C	4/17/2015	ND		Room 9, Middle of west wall							23
029	DH002A-029A	4/16/2015	3% chrysotile	Sink insulation	Room 11, Under sink	Nonfriable	Surfacing	Good	Med	High	Low	24
	DH002A-029B	4/16/2015	Not analyzed		Room 11, Under sink							24
	DH002A-029C	4/16/2015	Not analyzed		Room 11, Under sink							24

Table B-2 cont.: CSMS-1 Building 304 Asbestos Samples

Homog. Material Number *	Sample Information			Material Description	Locations	Friable/ Nonfriable	Type	Condition	Contact Potential	Vibration Potential	Air Erosion Potential	Figure #
	ID	Date	Results									
030	DH002A-030A	4/21/2015	ND	Type D 2'x4' ACT	Room 11, South end	Friable	Misc	Good	Low	Medium	Medium	24
	DH002A-030B	4/21/2015	ND		Room 11, Northwest end							24
	DH002A-030C	4/21/2015	ND		Room 11, East side							24
031	DH002A-031A	4/16/2015	ND	Dust duct	Room 12, End of vent	Nonfriable	Misc	Good	High	High	High	24
	DH002A-031B	4/16/2015	ND		Room 12, End of vent							24
	DH002A-031C	4/16/2015	ND		Room 12 End of vent							24
032	DH002A-032A	4/17/2015	ND	Paint on concrete	Room 18, South wall	Nonfriable	Misc	Good	High	High	High	30
	DH002A-032B	4/17/2015	ND		Room 14, South wall, west side							25
	DH002A-032C	4/17/2015	ND		Room 17, North wall, near center							29
	DH002A-032D	4/17/2015	ND		Room 20, South wall, west side							32
	DH002A-032E	4/17/2015	ND		Room 19, South wall, east side							31
033	DH002A-033A	4/17/2015	ND	Corrugated metal coating	Room 14, West wall	Nonfriable	Misc	Good	High	High	High	25
	DH002A-033B	4/17/2015	ND		Room 16, East wall							28
	DH002A-033C	4/17/2015	ND		Room 17, West wall, north end							29
	DH002A-033D	4/17/2015	ND		Room 18, East wall, opposite Room 17							30
	DH002A-033E	4/17/2015	ND		Room 20, North wall, middle							32
	DH002A-033F	4/17/2015	ND		Room 18 East wall, opposite Room 15							30
	DH002A-033G	4/17/2015	ND		Room 18, East wall, opposite Room 16							30
034	DH002A-034A	4/17/2015	ND	Wall rivet mastic	Room 14, Southwest wall	Nonfriable	Misc	Poor	Med	High	Low	25
	DH002A-034B	4/17/2015	ND		Room 16, Southwest wall							27
	DH002A-034C	4/17/2015	ND		Room 17, South wall							29
036	DH002A-036A	4/17/2015	ND	Drywall and joint compound	Room 15, Northwest wall	Friable	Misc	Good	High	High	High	26
	DH002A-036B	4/17/2015	ND		Room 15, North wall							26
	DH002A-036C	4/17/2015	ND		Room 15, South wall							26
037	DH002A-037A	4/17/2015	ND	Dark brown covebase	Room 15, Southeast wall	Nonfriable	Misc	Good	High	High	Low	26
	DH002A-037B	4/17/2015	ND		Room 15, Northwest wall							26
	DH002A-037C	4/17/2015	ND		Room 15A, Near door							26
038	DH002A-038A	4/17/2015	ND	Tan 12"x12" VFT	Room 15, Southeast end near center	Nonfriable	Misc	Good	High	High	Medium	26
	DH002A-038B	4/17/2015	ND		Room 15, Northwest end near center							26
	DH002A-038C	4/17/2015	ND		Room 15A, Middle of room							26
039	DH002A-039A	4/17/2015	ND	Interior window caulk	Room 15, Right edge of window	Nonfriable	Misc	Good	Low	High	Medium	26
	DH002A-039B	4/17/2015	ND		Room 15, Left edge of window							26
	DH002A-039C	4/17/2015	ND		Room 15, Right edge of window							26
040	DH002A-040A	4/21/2015	ND	Type E 2'x4' ACT	Room 15A, Northwest end	Friable	Misc	Good	Low	Medium	Medium	26
	DH002A-040B	4/21/2015	ND		Room 15A, Northwest end							26
	DH002A-040C	4/21/2015	ND		Room 15A, Northwest end							26
041	DH002A-041A	4/17/2015	ND	Door frame caulk	Room 16, North side of southeast interior door	Nonfriable	Misc	Good	High	High	Medium	27
	DH002A-041B	4/17/2015	ND		Room 16, North side of southeast interior door							27
	DH002A-041C	4/17/2015	ND		Room 16, South side of Southeast interior door							27
042	DH002A-042A	4/17/2015	ND	Laminate wood partition wall	Room 16A, West wall	Nonfriable	Misc	Poor	High	High	Low	28
	DH002A-042B	4/17/2015	ND		Room 16A, South corner							28
	DH002A-042C	4/17/2015	ND		Room 16A, Northwest wall							28
043	DH002A-043A	4/21/2015	ND	Type F 2'x4' ACT	Room 16A, Nearth Center	Friable	Misc	Poor	High	High	High	28
	DH002A-043B	4/21/2015	ND		Room 16A, West end							28
	DH002A-043C	4/21/2015	ND		Room 16A, Southwest corner							28

Table B-2 cont.: CSMS-1 Building 304 Asbestos Samples

Homog. Material Number *	Sample Information			Material Description	Locations	Friable/ Nonfriable	Type	Condition	Contact Potential	Vibration Potential	Air Erosion Potential	Figure #
	ID	Date	Results									
044	DH002A-044A	4/17/2015	ND	Red skim coat	Room 16B, South of middle of room	Nonfriable	Misc	Poor	High	High	High	28
	DH002A-044B	4/17/2015	ND		Room 16B, West end							28
	DH002A-044C	4/17/2015	ND		Room 16B, Northwest end							28
045	DH002A-045A	4/17/2015	ND	Residual caulking	Room 16B, Middle of North strip of caulking	Nonfriable	Misc	Poor	High	High	High	28
	DH002A-045B	4/17/2015	ND		Room 16B, Southeast end of North strip of caulking							28
	DH002A-045C	4/17/2015	ND		Room 16B, Middle of South strip of caulking							28
046	DH002A-046A	4/17/2015	ND	Carpet glue	Room 16A, Northeast end	Nonfriable	Misc	Poor	High	High	Low	28
	DH002A-046B	4/17/2015	ND		Room 16A, Middle of room							28
	DH002A-046C	4/17/2015	ND		Room 16A, North end of room							28
047	DH002A-047A	4/16/2015	ND	Brown mastic	Room 18 patch	Nonfriable	Misc	Poor	Med	Medium	High	30
	DH002A-047B	4/16/2015	ND		Room 17 patch							29
	DH002A-047C	4/16/2015	ND		Room 18 patch							30
048	DH002A-048A	4/16/2015	ND	Silver compressor paint	Room 18, South compressor	Nonfriable	Misc	Good	High	High	High	30
	DH002A-048B	4/16/2015	ND		Room 18, Compressor piping							30
	DH002A-048C	4/16/2015	ND		Room 18, North compressor							30
049	DH002A-049A	4/24/2015	ND	Vacuum hose	Room 18, Northwest bay	Nonfriable	Misc	Good	Med	High	High	30
	DH002A-049B	4/24/2015	ND		Room 18, Northwest bay							30
	DH002A-049C	4/24/2015	ND		Room 18, Northwest bay							30
050	DH002A-050A	4/17/2015	ND	Fire proofing	Room 17, Wall opening near passage to Room 18	Friable	TSI	Good	Low	Medium	Medium	29
	DH002A-050B	4/17/2015	ND		Room 18, North wall, Opposite Room 16							30
	DH002A-050C	4/17/2015	ND		Room 18, North wall, Opposite Room 14							30
051	DH002A-051A	4/17/2015	ND	White and gray mastic	Room 18, Opposite Room 17	Nonfriable	Misc	Good	Med	High	Medium	30
	DH002A-051B	4/17/2015	ND		Room 18, Opposite Room 16,							30
	DH002A-051C	4/17/2015	ND		Room 20							32
052	DH002A-052A	4/17/2015	ND	Paint filters	Room 20, South roll up door	Friable	Misc	Good	Med	High	High	32
	DH002A-052B	4/17/2015	ND		Room 20, North wall							32
	DH002A-052C	4/17/2015	ND		Room 19, North roll up door							31
053	DH002A-053A	4/17/2015	ND	Exterior paint on concrete and brick	Room 19, Exterior, Northeast corner	Nonfriable	Misc	Good	High	Medium	High	31
	DH002A-053B	4/17/2015	ND		Room 14, Exterior, Southwest corner							25
	DH002A-053C	4/17/2015	ND		Room 13, Exterior, Northwest corner							21
	DH002A-053D	4/17/2015	ND		Room 1, Exterior, Near middle of southeast wall							17
	DH002A-053E	4/17/2015	ND		Room 7, Exterior, Southeast eall, east side							22
	DH002A-053F	4/17/2015	ND		Room 12, Exterior, northwest corner							24
	DH002A-053G	4/17/2015	ND		Room 18, Exterior, Near center support							30
054	DH002A-054A	4/17/2015	ND	Gray exterior window caulk	Room 1, Exterior, Northwest windows	Friable	Misc	Poor	Med	High	Medium	17
	DH002A-054B	4/17/2015	ND		Room 9, Exterior, Southeast window							23
	DH002A-054C	4/17/2015	3% chrysotile		Room 12, Exterior, south corner							24
055	DH002A-055A	4/21/2015	2% chrysotile	Exterior window frame caulk on Building 304	Room 5, Exterior of window frame	Nonfriable	Misc	Poor	Low	High	Medium	20
	DH002A-055B	4/21/2015	Not analyzed		Room 9, Exerior, Right side of door frame							23
	DH002A-055C	4/21/2015	Not analyzed		Room 3, Exterior, left side of door frame							19
056	DH002A-056A	4/21/2015	ND	Orange foam filler	Crack in southeast wall between Rooms 2 and 3	Friable	TSI	Good	Low	Medium	Medium	18
	DH002A-056B	4/21/2015	ND		Room 14, Northwest exterior							25
	DH002A-056C	4/21/2015	ND		Room 9, Exterior, Northwest exterior							23

Table B-2 cont.: CSMS-1 Building 304 Asbestos Samples

Homog. Material Number *	Sample Information			Material Description	Locations	Friable/ Nonfriable	Type	Condition	Contact Potential	Vibration Potential	Air Erosion Potential	Figure #
	ID	Date	Results									
057	DH002A-057A	4/21/2015	ND	Exterior grommet mastic on Building 304	Room 18, Exterior, Southeast corner	Nonfriable	Misc	Good	Med	Medium	Low	30
	DH002A-057B	4/21/2015	ND		Room 20, Exterior, Northwest corner							32
	DH002A-057C	4/21/2015	ND		Room 17, Exterior, Southeast corner							29
058	DH002A-058A	4/21/2015	ND	Silver paint on the interior of the Carpenter Shop	Carpenter Shop, South wall under window	Friable	Misc	Poor	High	High	High	34
	DH002A-058B	4/21/2015	ND		Carpenter Shop, Southeast wall near pipe							34
	DH002A-058C	4/21/2015	ND		Carpenter Shop, North wall, Left of window							34
	DH002A-058D	4/21/2015	ND		Carpenter Shop, Northwest wall, Under window							34
	DH002A-058E	4/21/2015	ND		Carpenter Shop, Northwest side, Northwest addition							34
059	DH002A-059A	4/21/2015	ND	Dust collector bag	Carpenter Shop, Southeast wall	Nonfriable	Misc	Good	High	High	High	34
	DH002A-059B	4/21/2015	ND		Carpenter Shop, Southeast wall							34
	DH002A-059C	4/21/2015	ND		Carpenter Shop, Southeast wall							34
060	DH002A-060A	4/21/2015	ND	Exterior paint on Carpenter Shop	Carpenter Shop, Southwest wall, right of window	Friable	Misc	Poor	Med	High	High	34
	DH002A-060B	4/21/2015	ND		Carpenter Shop, Exterior, Southeast wall, left of door							34
	DH002A-060C	4/21/2015	ND		Carpenter Shop, Exterior, Northwest wall, Left of window							34
	DH002A-060D	4/21/2015	ND		Carpenter Shop, Exterior, Northwest wall, Left of window							34
	DH002A-060E	4/21/2015	ND		Carpenter Shop, Exterior, Northwest wall, Middle of addition							34
061	DH002A-061A	4/21/2015	ND	Gray exterior window caulk on Carpenter Shop	Carpenter Shop, Exterior, Southwest wall, Right side of window	Nonfriable	Misc	Poor	Med	High	High	34
	DH002A-061B	4/21/2015	2% chrysotile		Carpenter Shop, Exterior, Northeast wall, Left side of window							34
	DH002A-061C	4/21/2015	Not analyzed		Carpenter Shop, Exterior, Northwest wall, Right side of window							34
062	DH002A-062A	4/21/2015	ND	Exterior grommet mastic on Flammable Storage Building	Canvas Repair Shop, Exterior, Southwest side, Right of door	Nonfriable	Misc	Poor	Low	High	Medium	35
	DH002A-062B	4/21/2015	ND		Canvas Repair Shop, Exterior, Northwest wall, Middle							35
	DH002A-062C	4/21/2015	ND		Battery Shop, Exterior, Northeast wall, Middle							35
063	DH002A-063A	4/21/2015	ND	Exterior metal paint on Building 304	Room 16A, Exterior, Right of window	Friable	Misc	Good	High	High	High	28
	DH002A-063B	4/21/2015	ND		Room 19, Exterior, Left of roll-up door							31
	DH002A-063C	4/21/2015	ND		Room 15, Exterior, Right of double doors							26
	DH002A-063D	4/21/2015	ND		Room 19 and 20, Exterior, Northwest wall, middle							31
	DH002A-063E	4/21/2015	ND		Room 18, Exterior, Southwest Wall, Southeast end							30
	DH002A-063F	4/21/2015	ND		Room 18, Exterior, Southwest Wall, Near middle							30
	DH002A-063G	4/21/2015	ND		Room 18, Exterior, Southwest Wall, Northwest end							30
064	DH002A-064A	4/21/2015	ND	Exterior metal paint on Flammable Storage Building	Flammable storage shed shelter, Exterior, Northeast wall, Middle	Friable	Misc	Good	High	High	High	35
	DH002A-064B	4/21/2015	ND		Flammable storage shed, Exterior, Northeast wall, Near middle							35
	DH002A-064C	4/21/2015	ND		Flammable storage shed, Exterior, Southeast wall, Near middle							35
065	DH002A-065A	4/21/2015	ND	Exterior grommet mastic on Carpenter Shop	Carpenter Shop, Exterior, Northeast wall, Right side of window	Nonfriable	Misc	Poor	Low	High	Medium	34
	DH002A-065B	4/21/2015	ND		Carpenter Shop, Exterior, Southeast wall, Near middle							34
	DH002A-065C	4/21/2015	ND		Carpenter Shop, Exterior, Southwest wall, Northwest end of wall							34



Table B-2 cont.: CSMS-1 Building 304 Asbestos Samples

Homog. Material Number *	Sample Information			Material Description	Locations	Friable/ Nonfriable	Type	Condition	Contact Potential	Vibration Potential	Air Erosion Potential	Figure #
	ID	Date	Results									
066	DH002A-066A	4/15/2015	ND	Room 2A north door mastic	Left side of door	Nonfriable	Misc	Poor	Med	High	Medium	18
	DH002A-066B	4/15/2015	ND		Right side of door							18
	DH002A-066C	4/15/2015	ND		Left side of door							18
067	DH002A-067A	4/15/2015	ND	Room 2A south door frame caulk	Left side of door	Nonfriable	Misc	Poor	High	High	High	18
	DH002A-067B	4/15/2015	ND		Top of door							18
	DH002A-067C	4/15/2015	ND		Right of door							18
068	DH002A-068A	4/15/2015	ND	Concrete crack filler	Room 2A, Near the southeast wall	Nonfriable	Misc	Good	High	Medium	Low	18
	DH002A-068B	4/15/2015	ND		Room 2B, Near the northwest wall							18
	DH002A-068C	4/15/2015	ND		Room 2A, West corner							18
	DH002A-068D	4/15/2015	ND		Room 5, Northeast corner							20
	DH002A-068E	4/15/2015	ND		Room 5, Southwest corner							20
069	DH002A-069A	4/15/2015	ND	Wall insulation	Room 6, Southeast wall, Near middle	Friable	TSI	Good	Low	Medium	Low	22
	DH002A-069B	4/15/2015	ND		Room 7, Northwest wall, Near middle							22
	DH002A-069C	4/15/2015	ND		Room 7, Northwest wall, North corner							22
070	DH002A-070A	4/16/2015	ND	Mosaic tile under beige 4"x4" ceramic tile	Restroom, Shower, Southeast corner	Nonfriable	Misc	Good	High	Medium	Medium	23
	DH002A-070B	4/16/2015	ND		Restroom, Shower, Northeast corner							23
	DH002A-070C	4/16/2015	ND		Restroom, Shower, Near drain							23
071	DH002A-071A	4/17/2015	ND	Drywall insulation	Room 15A, Southwest wall, Southeast end	Friable	TSI	Good	Low	Medium	Low	26
	DH002A-071B	4/17/2015	ND		Room 15A, Northeast wall, right of door							26
	DH002A-071C	4/17/2015	ND		Room 15, Southeast wall, Near middle							26
072	DH002A-072A	4/17/2015	ND	Window glass caulking	Room 15, Left edge of window frame	Nonfriable	Misc	Good	High	Medium	Medium	26
	DH002A-072B	4/17/2015	ND		Room 16A, Right edge of window frame							28
	DH002A-072C	4/17/2015	ND		Room 16A, Left edge of window frame							28
073	DH002A-073A	4/21/2015	ND	Plenum insulation	Room 15, Northwest end	Friable	TSI	Good	Low	Medium	High	26
	DH002A-073B	4/21/2015	ND		Room 15, Southeast end							26
	DH002A-073C	4/21/2015	ND		Room 15A, Near middle							26
074	DH002A-074A	4/21/2015	ND	Shipping container mastic	Shipping container, Northeast wall, East corner	Nonfriable	Misc	Good	Med	High	Low	36
	DH002A-074B	4/21/2015	ND		Shipping container, Southwest wall, Near middle							36
	DH002A-074C	4/21/2015	ND		Shipping container, Northeast wall, West corner							36
075	DH002A-075A	4/21/2015	ND	Deadman pad caulking	Deadman pad, West side	Nonfriable	Misc	Good	High	High	High	35
	DH002A-075B	4/21/2015	ND		Deadman pad, East side							35
	DH002A-075C	4/21/2015	ND		Deadman pad, South side							35
076	DH002A-076A	4/24/2015	ND	Mastic on vacuum system located on roof of Building 304	Roof, Southwest side, Pipe for vacuum system	Nonfriable	Misc	Good	Low	High	Medium	37
	DH002A-076B	4/24/2015	ND		Roof, Southwest side, Vacuum system base plate							37
	DH002A-076C	4/24/2015	ND		Room 18, Exterior, Southwest side, Northwest end							37
077	DH002A-077A	4/24/2015	ND	Layer 1: Gray/off-white roofing polymer Layer 2: Green polymer membrane Layer 3: Silver paint	Roof, Southwest side	Friable	Misc	Poor	Low	High	Low	37
	DH002A-077B	4/24/2015	Layer 1: ND Layer 2: ND Layer 3: 2% chrysotile		Roof, Northwest end							37
	DH002A-077C	4/24/2015	Not analyzed		Roof, Southeast wing, Near middle							37
078	DH002A-078A	4/24/2015	ND	White paint on concrete	3 pt. line, Northwest side	Nonfriable	Misc	Poor	High	High	High	37
	DH002A-078B	4/24/2015	ND		3 pt. line, North side							37
	DH002A-078C	4/24/2015	ND		3 pt. line, Southeast side							37

**Table B-2 cont.: CSMS-1 Building 304 Asbestos Samples**

Homog. Material Number *	Sample Information			Material Description	Locations	Friable/ Nonfriable	Type	Condition	Contact Potential	Vibration Potential	Air Erosion Potential	Figure #
	ID	Date	Results									
079	DH002A-079A	4/24/215	ND	Shipping container roof	Shipping container roof, Northwest of middle	Nonfriable	Misc	Good	Low	High	High	36
	DH002A-079B	4/24/2015	ND		Shipping container roof, Middle							36
	DH002A-079C	4/24/2015	ND		Shipping container roof, Southeast end							36
080	DH002A-080A	4/24/2015	ND	Carpenter Shop roof	Carpenter shop roof, Southeast edge, Northwest end	Friable	Misc	Poor	Low	High	High	34
	DH002A-080B	4/24/2015	ND		Carpenter shop roof, Southeast edge, Near middle							34
	DH002A-080C	4/24/2015	ND		Carpenter shop roof, Southeast edge, South end							34
082	DH002A-082A	4/24/2015	ND	Vent pipe mastic	Southeast wing, Restroom vent pipe	Nonfriable	Misc	Good	Low	High	High	37
	DH002A-082B	4/24/2015	ND		Southeast wing, Restroom vent pipe							37
	DH002A-082C	42/24/15	ND		Southeast wing, Restroom vent pipe							37

\*Homogeneous Material Numbers 11, 28, 35, and 81 were not used in this survey.

**bold** indicates asbestos containing or presumed asbestos containing material

— = Not sampled

% = percent

AC = air conditioning

ACT = acoustic ceiling tile

ID = identification

ND = nondetect

TSI = thermal system insulation

VFT = vinyl floor tile



**Table B-3: CERFP Building 301, Lead Samples**

Sample Number	Results (%)	Sample Location	Color	Substrate	Condition	Figure #
DH001P-001	< 0.0021	Inside door of Room 16	White	Wood	Poor	14
DH001P-002	0.1100	Inside door of Room 1	Black on Green & Yellow	Wood	Fair	3
DH001P-003	< 0.0021	Wall of Room 11	White	Concrete/CMU	Fair	9
DH001P-004	0.0044	Lower Wall of Room 2	Light Blue	Concrete/CMU	Fair	4
DH001P-005	< 0.0019	Room 3, Left Metal Conduit Cable	White over Light Blue	Metal	Poor	5
DH001P-006	< 0.0024	On Electrical Conduit in Room 1	Light Blue	Metal	Fair	3
DH001P-007	0.0440	Room 2	Light Blue	Wood	Fair	4
DH001P-008	0.0100	Room 1	Black	Concrete/CMU	Poor	3
DH001P-009	0.0370	Room 12 Door	Beige	Wood	Poor	10
DH001P-010	0.0520	Room 2	Light Green	Wood	Poor	4
DH001P-011	< 0.0021	Sign Post	Dark Brown	Wood	Good	15
DH001P-012	0.0540	On door frame between Room 7 and Room 8	Light Brown over Light Blue	Wood	Poor	7
DH001P-013	0.4400	Ladies Restroom	Light Tan	Metal	Poor	6
DH001P-014	< 0.0016	Restroom Walls	Tan	Tile	Fair	6
DH001P-015	< 0.0016	Shower Floor	Mosaic	Tile	Good	6
DH001P-016	0.0061	Mens Restroom by left urinal	Pink over Green	Concrete	Poor	6
DH001P-017	0.0240	Womens Restroom upper pink trim	Pink over Lt Green	Wood	Fair	6
DH001P-018	< 0.0050	Womens Restroom electrical conduit cable	Pink	Metal	Good	6
DH001P-019	< 0.0019	Wall base	Dark Brown	Concrete	Good	6
DH001P-020	0.2700	In hallway behind water fountain	Light Brown	Concrete	Good	7
DH001P-021	0.0960	Room 12 leftside of entrance	Beige over Light Blue, Brown & Green	Concrete	Poor	10
DH001P-022	0.0027	Room 12A conduit under sink	Beige	Metal	Poor	10
DH001P-023	< 0.0018	Room 12B leftside of room near door	Beige	Drywall	Poor	10
DH001P-024	< 0.0019	Room 13B leftside of door	White	Drywall	Fair	11
DH001P-025	0.0110	Vault interior right side of room 15A	Off-white	Concrete	Good	13
DH001P-026	0.0800	Vault door right side bottom	Dark Gray	Metal	Good	13
DH001P-027	0.4400	Vault door right side bottom of frame	Light Gray	Metal	Good	13
DH001P-028	0.0081	Room 17 Mid left warehouse	Dark Salmon	Concrete	Fair	14
DH001P-029	< 0.0020	Inside door room 18	Dark Salmon on White	Wood	Fair	14
DH001P-030	< 0.0120	Roll-up door frame	Black	Metal	Fair	30
<b>DH001P-031</b>	<b>0.5800</b>	<b>Lobby-fire extinguisher Frame</b>	<b>Red</b>	<b>Metal</b>	<b>Good</b>	8
DH001P-032	0.0230	Room 17 ceiling	Beige	Acoustic Tile	Good	14
DH001P-033	0.0091	Room 17 Doors Exterior & Interior	Dark Brown over Gray	Metal	Fair	14
DH001P-034	0.0032	Exterior Walls Room 17 West double doors	Off-white over Light Green	Concrete	Good	15
<b>DH001P-035</b>	<b>5.0000</b>	<b>3 Stairs-stripes Southwest end</b>	<b>Yellow</b>	<b>Concrete</b>	<b>Poor</b>	6
DH001P-036	0.0350	Roof	Tan	Wood	Poor	8
<b>DH001P-037</b>	<b>5.7000</b>	<b>Post</b>	<b>Yellow over Orange</b>	<b>Metal</b>	<b>Poor</b>	15
DH001P-038	0.0060	Parking lot white stripe 3rd to last sall	White	Asphalt	Fair	15
DH001P-039	0.0170	Northeast stairs	Black over Blue	Concrete	Fair	11
DH001P-040	0.0960	Northeast stairs	Blue	Concrete	Fair	11
<b>DH001P-041</b>	<b>1.1000</b>	<b>Northeast stairs</b>	<b>Red over Blue</b>	<b>Concrete</b>	<b>Fair</b>	11
DH001P-042	0.4700	Flagpole, post	White	Metal	Poor	15

**Table B-3 cont.: CERFP Building 301, Lead Samples**

Sample Number	Results (%)	Sample Location	Color	Substrate	Condition	Figure #
DH001P-043	0.0030	Gray Parking stripe	Gray	Asphalt	Fair	15
DH001P-044	0.0310	Ext. Room 17 North of double doors	Off-white over Light Green	Metal	Poor	15
DH001P-045	0.1700	Exterior Right of Entrance under first AC	Off-white	Wood	Poor	9

***Bolded italic values = Lead Based Paint (LBP, >0.5%)***

AC = air conditioner

< Value = nondetect

**Table B-4: CSMS-1 Building 304 Lead Samples**

Sample Number	Results (%)	Sample Location	Color	Substrate	Condition	Figure #
DH002P-001	0.4500	Interior of roll-up door in Room 18	Green	Metal	Poor	30
DH002P-002	0.3700	Door frame of Room 4	Black	Metal	Poor	19
<b>DH002P-003</b>	<b>4.9000</b>	<b>Exterior base of the roll-up door, Room 17</b>	<b>Yellow over green</b>	<b>Metal</b>	<b>Poor</b>	<b>29</b>
DH002P-004	0.0080	By vault in Room 5	Green	Concrete	Poor	20
DH002P-005	0.0270	Room 1, corner by door	White	Concrete	Poor	17
DH002P-006	0.0140	Wall near door, Room 11	Red over pink and green	Concrete	Poor	24
DH002P-007	<0.0047	Breaker box in Room 1	Gray	Metal	Fair	17
DH002P-008	0.0026	Pipes in Room 11	White	Metal	Fair	24
DH002P-009	<0.0020	Exterior wall of Room 2A	Light blue	Drywall	Fair	18
DH002P-010	<0.0019	Center door frame of Room 2A	Light blue	Wood	Fair	18
DH002P-011	0.1900	Wall of Room 2A	Green	Drywall	Fair	18
DH002P-012	0.1700	Room 3, shared wall with Room 2	White	Drywall	Fair	19
DH002P-013	0.2000	Inside door frame of Room 5	Blue	Metal	Fair	20
DH002P-014	0.0680	Baseboard of Room 2	Green	Wood	Good	18
<b>DH002P-015</b>	<b>0.6600</b>	<b>Interior of entrance door to Room 3</b>	<b>Beige over dark brown</b>	<b>Metal</b>	<b>Poor</b>	<b>19</b>
<b>DH002P-016</b>	<b>1.4000</b>	<b>Breaker box in Room 18</b>	<b>Dark blue</b>	<b>Metal</b>	<b>Good</b>	<b>30</b>
DH002P-017	0.0140	Room 4 walls by vault door	Light blue	Concrete	Poor	19
DH002P-018	0.0210	Room 7, Northeast wall near door	Beige over dark brown	Concrete	Good	22
DH002P-019	0.0100	Room 7, Interior door to Room 6	Beige	Wood	Good	22
DH002P-020	0.0030	Room 7, Northeast drywall wall	Beige	Drywall	Good	22
DH002P-021	<0.0014	Room 9, Shower	Yellow	Tile	Fair	23
DH002P-022	0.1700	Room 7 window	Beige	Glass	Poor	22
DH002P-023	0.0055	Room 6, Far door window	White	Glass	Good	22
DH002P-024	0.0250	Outer door of Room 6B	White over green	Wood	Poor	22
DH002P-025	0.0750	Sprinkler system lines outside Room 20	Red	Metal	Good	32
DH002P-026	0.0480	Room 9 shower door	Pink	Wood	Poor	23
DH002P-027	0.0140	Room 9, Interior of restroom door	Pink	Metal	Poor	23
DH002P-028	0.0290	Room 9, Middle right wall	Pink	Concrete	Good	23
DH002P-029	<0.0018	Room 9, Shower floor	Beige	Tile	Good	23
DH002P-030	<0.0019	Room 9, Shower floor	Mosaic	Tile	Good	23
DH002P-031	0.0035	Room 9, Wall near sinks	Tan	Tile	Good	23
DH002P-032	<0.0017	Room 9, Right side wall	Dark brown	Concrete	Fair	23
DH002P-033	0.0510	Room 16, North bay door	Light brown over light green	Metal	Poor	27
<b>DH002P-034</b>	<b>20.0000</b>	<b>Parking lot railroad rails, near front door</b>	<b>Yellow over black and red</b>	<b>Metal</b>	<b>Poor</b>	<b>37</b>
DH002P-035	0.0099	Room 18 floor stripe	Yellow	Concrete	Poor	30
DH002P-036	0.1400	Exterior, Center column between Room 12 roll up doors	Black over yellow and green	Concrete	Poor	24
DH002P-037	0.1500	Room 17, Southeast bay door	Light blue	Metal	Fair	29
<b>DH002P-038</b>	<b>5.0000</b>	<b>Room 18, Tanks and piping</b>	<b>Silver</b>	<b>Metal</b>	<b>Good</b>	<b>30</b>
DH002P-039	0.0200	Room 18 walls	Bright white	Concrete	Good	30
<b>DH002P-040</b>	<b>2.4000</b>	<b>Crane rails</b>	<b>Dark yellow</b>	<b>Metal</b>	<b>Good</b>	<b>30</b>
<b>DH002P-041</b>	<b>0.5100</b>	<b>Crane</b>	<b>Sea green over red</b>	<b>Metal</b>	<b>Good</b>	<b>30</b>
DH002P-042	0.0320	South exterior corner of Room 12	Sand	Concrete	Poor	24
DH002P-043	0.0570	Southeast exterior of Room 3	Light brown	Concrete	Poor	19
<b>DH002P-044</b>	<b>4.3000</b>	<b>Exterior stairs</b>	<b>Yellow</b>	<b>Concrete</b>	<b>Poor</b>	<b>37</b>

**Table B-4 cont.: Lead Samples**

Sample Number	Results (%)	Sample Location	Color	Substrate	Condition	Figure #
DH002P-045	0.1400	Parking lot stripes, Southeast side	White over yellow	Asphalt	Poor	37
DH002P-046	<0.0041	Eaves outside of Room 18	Light gray	Metal	Good	37
<b><i>DH002P-047</i></b>	<b><i>1.0000</i></b>	<b><i>I-beam outside of Rooms 3 and 4</i></b>	<b><i>Sand</i></b>	<b><i>Metal</i></b>	<b><i>Poor</i></b>	<b><i>37</i></b>
DH002P-048	0.0480	Wood doors for Room 8	Light brown	Wood	Poor	22
DH002P-049	0.0880	Exterior wall between Rooms 14 and 18	Peach over green	Concrete	Fair	30
DH002P-050	0.0050	Glass window in doors for Room 15	Light brown	Glass	Poor	26
DH002P-051	0.0420	Exterior of Room 19 roll-up door	Medium brown over light brown and green	Metal	Fair	31
DH002P-052	0.0019	Bollard outside of Room 19	Orange	Metal	Poor	37
<b><i>DH002P-053</i></b>	<b><i>0.5000</i></b>	<b><i>Base of grease rack</i></b>	<b><i>Green</i></b>	<b><i>Concrete</i></b>	<b><i>Poor</i></b>	<b><i>37</i></b>
<b><i>DH002P-054</i></b>	<b><i>1.8000</i></b>	<b><i>Grease rack stairs and rails</i></b>	<b><i>Light yellow</i></b>	<b><i>Metal</i></b>	<b><i>Poor</i></b>	<b><i>37</i></b>
DH002P-055	0.4000	Carpenter shop interior, northeast wall window sill	Gray	Metal	Poor	34
<b><i>DH002P-056</i></b>	<b><i>5.0000</i></b>	<b><i>Carpenter shop, Exterior</i></b>	<b><i>Sand</i></b>	<b><i>Metal</i></b>	<b><i>Poor</i></b>	<b><i>34</i></b>
<b><i>DH002P-057</i></b>	<b><i>1.3000</i></b>	<b><i>Carpenter shop door</i></b>	<b><i>Light brown</i></b>	<b><i>Metal</i></b>	<b><i>Poor</i></b>	<b><i>34</i></b>
DH002P-058	<0.0017	New asphalt on the northwest side of complex	White	Asphalt	Good	34
DH002P-059	0.0570	Canvas Repair Shop exterior	Sand	Metal	Poor	35
<b><i>DH002P-060</i></b>	<b><i>2.3000</i></b>	<b><i>Board on in the interior of the Battery Shop</i></b>	<b><i>Green</i></b>	<b><i>Wood</i></b>	<b><i>Poor</i></b>	<b><i>35</i></b>
<b><i>DH002P-061</i></b>	<b><i>8.0000</i></b>	<b><i>Battery Shop, Support poles</i></b>	<b><i>Green</i></b>	<b><i>Metal</i></b>	<b><i>Poor</i></b>	<b><i>35</i></b>
<b><i>DH002P-062</i></b>	<b><i>1.9000</i></b>	<b><i>Flammable storage shed shelter</i></b>	<b><i>Yellow</i></b>	<b><i>Metal</i></b>	<b><i>Poor</i></b>	<b><i>35</i></b>
DH002P-063	0.0180	Wall of Battery Shop	Red	Metal	Poor	35
DH002P-064	0.0028	Flammable storage shed ramp	Yellow	Concrete	Poor	35
<b><i>DH002P-065</i></b>	<b><i>1.2000</i></b>	<b><i>Canvas Repair Shop interior walls</i></b>	<b><i>Off-white</i></b>	<b><i>Metal</i></b>	<b><i>Poor</i></b>	<b><i>35</i></b>
DH002P-066	0.0470	Canvas Repair Shop, back door	Light brown	Metal	Poor	35
DH002P-067	0.0510	Canvas Repair Shop foundation	Light brown	Concrete	Poor	35
DH002P-068	0.0019	Bollards behind shipping container	Yellow	Metal	Poor	36
DH002P-069	0.1600	Interior walls of shipping container	Light blue	Metal	Fair	36
<b><i>DH002P-070</i></b>	<b><i>0.7800</i></b>	<b><i>Lunch shelter (304F) supports</i></b>	<b><i>Dark brown</i></b>	<b><i>Metal</i></b>	<b><i>Poor</i></b>	<b><i>33</i></b>
DH002P-071	<0.002	Basketball court boundary lines	Red	Concrete	Fair	37
DH002P-072	<0.0019	Basketball court key	Blue	Concrete	Poor	37
DH002P-073	<0.0017	Basketball court 3 pt. line	White	Concrete	Poor	37
DH002P-074	<0.0018	Southeast exterior wall of Between Room 14 and Room 18	Yellow	Concrete	Good	25

***Bolded italic values = Lead Based Paint (LBP, >0.5%)***

pt. = point

< Value = nondetect

**Table B-5: CERFP Building 301, OHRM Inventory**

CERFP-Building 301						
Room	Other Hazardous Regulated Materials					
	Ballasts	Fluorescent Bulbs	Sodium Wall Light Bulbs	Sodium Flood Light Bulbs	Incandescent Bulbs	Air Conditioning Units
1	8	16	--	--	--	--
2	8	8	--	--	--	--
3	7	8	--	--	--	--
4	5	7	--	--	2	--
4A	--	--	--	--	1	--
5	3	5	--	--	1	--
6	2	2	--	--	--	--
7	3	9	--	--	--	1
8	3	9	--	--	--	1
9	3	9	--	--	--	1
10	3	9	--	--	--	--
11	12	24	--	--	--	1
12	12	24	--	--	--	3
13	8	16	--	--	--	2
14	8	16	--	--	--	2
15	16	30	--	--	--	1
15A	2	4	--	--	--	--
16	4	16	--	--	--	1
17	16	64	--	--	--	--
17A	4	8	--	--	--	--
17B	0	0	--	--	--	--
18	8	8	--	--	--	1
Hallway	6	12	--	--	--	--
Exterior	10	--	6	4	--	--
Totals:	151	304	6	4	4	14





**Table B-6: CSMS-1 Building 304 Complex, OHRM Inventory**

CSMS-1 Building 304 Complex						
Room	Other Hazardous Regulated Materials					
	Ballasts	Fluorescent Bulbs	Sodium Wall Light Bulbs	Sodium Flood Light Bulbs	Incandescent Bulbs	Air Conditioning Units
1	8	16	--	--	--	--
2	7	12	--	--	--	--
2A	--	--	--	--	--	1
3	8	16	--	--	--	--
4	8	32	--	--	--	--
5A	2	4	--	--	--	1
5	8	16	--	--	--	2
6	6	12	--	--	--	--
6A	2	4	--	--	--	--
6B	0	0	--	--	--	1
7	3	6	--	--	--	--
8	0	0	--	--	--	--
9	2	4	--	--	--	--
10	3	6	--	--	--	--
11	3	6	--	--	--	2
12	12	24	--	--	--	--
13			--	--	--	--
14	12	48	--	--	--	--
15	8	48	--	--	--	1
15A	4	24	--	--	--	--
16	12	12	--	--	--	--
16A	6	12	--	--	--	1
16B	4	4	--	--	--	--
17	16	32	--	--	--	--
18	32	64	--	--	--	--
19	16	48	--	--	--	--
20	16	46	--	--	--	--
Exterior	25	--	9	16	1	--
304D	4	16	--	--	4	--
304A	4	16	--	--	4	--
Totals:	231	528	9	16	9	9



## **Appendix C: Laboratory Results**



**Appendix C.1  
Asbestos Laboratory Results**



April 17, 2015

Fletcher Kimura  
**AECOM**  
1001 Bishop Street, Suite 1600  
Honolulu, HI 96813



Laboratory | Management | Training

**RE: Bulk Asbestos Fiber Analysis, NVL Batch # 1506661.00**

Dear Mr. Kimura,

Enclosed please find test results for the bulk samples submitted to our laboratory for analysis. Examination of these samples was conducted for the presence of identifiable asbestos fibers using polarized light microscopy (PLM) with dispersion staining in accordance with both U.S. EPA 600/M4-82-020, Interim Method for Determination of Asbestos in Bulk Insulation Samples, as found in 40 CFR, Part 763, Subpart E, Appendix E (formerly Subpart F, Appendix A), and U.S. EPA 600/R-93/116 (July 1993) Test Methods.

For samples containing more than one separable layer of materials, the report will include findings for each layer (labeled Layer 1 and Layer 2, etc. for each individual layer). The asbestos concentration in the sample is determined by visual estimation.

For those samples with asbestos concentrations between 1 and 10 percent based on visual estimation, the EPA recommends a procedure known as point counting (NESHAPS, 40 CFR Part 61). Point counting is a statistically more accurate means of quantification for samples with low concentrations of asbestos. If you would like us to further refine the concentration estimates of asbestos in these samples using point counting, please let me know.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. Please do not hesitate to call if there is anything further we can assist you with.

Sincerely,

  
for Nick Ly, Technical Director



Lab Code: 102063-0

1.888.NVL.LABS  
1.888.(685.5227)  
www.nvllabs.com

Enc.: Sample Results

NVL Laboratories, Inc.  
4708 Aurora Ave N, Seattle, WA 98103  
p 206.547.0100 | f 206.634.1936



# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Batch #: 1506661.00

Client Project #: 60340502.0500

Date Received: 4/13/2015

Samples Received: 45

Samples Analyzed: 43

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii

Lab ID: 15037167 Client Sample #: DH001A-001A

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1 Description: Gray sandy/brittle material with white/pink paint

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b> <b>None Detected ND</b>
Sand, Binder/Filler, Paint	Cellulose 2%	
Calcareous particles		

Lab ID: 15037168 Client Sample #: DH001A-001B

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1 Description: Gray brittle material with white paint

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b> <b>None Detected ND</b>
Binder/Filler, Paint, Granules	None Detected ND	

Lab ID: 15037169 Client Sample #: DH001A-001C

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1 Description: Gray brittle material with white/pink paint

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b> <b>None Detected ND</b>
Binder/Filler, Paint/Binder, Granules	Cellulose 1%	

Lab ID: 15037170 Client Sample #: DH001A-001D

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1 Description: Gray brittle material with white/pink paint

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b> <b>None Detected ND</b>
Binder/Filler, Calcareous particles, Paint/Binder	Cellulose 2%	

Lab ID: 15037171 Client Sample #: DH001A-001E

Location: DOD Demo, Honolulu, Hawaii

Sampled by: Client

Analyzed by: Lori Tseng

Reviewed by: Nick Ly

Date: 04/17/2015

Date: 04/17/2015  Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Batch #: 1506661.00**

Client Project #: 60340502.0500

Date Received: 4/13/2015

Samples Received: 45

Samples Analyzed: 43

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 1</b>	<b>Description:</b> Brown brittle material with white/pink paint			<b>Asbestos Type: %</b>
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>None Detected ND</b>
	Binder/Filler, Paint/Binder, Calcareous particles	Cellulose 3%		

**Lab ID: 15037172 Client Sample #: DH001A-001F**

Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 1</b>	<b>Description:</b> Trace gray/white brittle with white/pink/green paint			<b>Asbestos Type: %</b>
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>None Detected ND</b>
	Binder/Filler, Calcareous particles, Paint	Cellulose <1%		

**Lab ID: 15037173 Client Sample #: DH001A-001G**

Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 1</b>	<b>Description:</b> Gray brittle material with white paint			<b>Asbestos Type: %</b>
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>None Detected ND</b>
	Binder/Filler, Paint, Calcareous particles	Cellulose <1%		

**Lab ID: 15037174 Client Sample #: DH001A-003A**

Location: DOD Demo, Honolulu, Hawaii

Comments: Unable to estimate with confidence due to very small amount of caulking material.

<b>Layer 1 of 1</b>	<b>Description:</b> Trace gray brittle caulking material			<b>Asbestos Type: %</b>
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>None Detected ND</b>
	Caulking compound, Binder/Filler	Cellulose 1%		

**Lab ID: 15037175 Client Sample #: DH001A-003B**

Location: DOD Demo, Honolulu, Hawaii

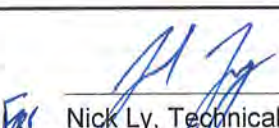
<b>Layer 1 of 1</b>	<b>Description:</b> Gray brittle caulking material			<b>Asbestos Type: %</b>
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>Chrysotile 2%</b>
	Binder/Filler, Caulking compound	Cellulose 3%		

**Sampled by:** Client

**Analyzed by:** Lori Tseng

**Reviewed by:** Nick Ly

**Date:** 04/17/2015

**Date:** 04/17/2015  Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM  
Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Batch #: 1506661.00**  
Client Project #: 60340502.0500  
Date Received: 4/13/2015  
Samples Received: 45  
Samples Analyzed: 43  
Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

**Attention: Mr. Fletcher Kimura**  
Project Location: DOD Demo, Honolulu, Hawaii

**Lab ID: 15037176      Client Sample #: DH001A-003C      Sample Status:      Not Analyzed**

**Lab ID: 15037177      Client Sample #: DH001A-004A**  
Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1      **Description:** Trace gray brittle caulking material with white paint  
Non-Fibrous Materials:      Other Fibrous Materials:%      **Asbestos Type: %**  
Binder/Filler, Caulking compound, Paint      Cellulose 2%      **None Detected ND**

**Lab ID: 15037178      Client Sample #: DH001A-004B**  
Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1      **Description:** Gray brittle caulking material with white paint  
Non-Fibrous Materials:      Other Fibrous Materials:%      **Asbestos Type: %**  
Binder/Filler, Caulking compound, Paint      Talc fibers 5%      **None Detected ND**

**Lab ID: 15037179      Client Sample #: DH001A-004C**  
Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1      **Description:** Gray brittle caulking material with white paint  
Non-Fibrous Materials:      Other Fibrous Materials:%      **Asbestos Type: %**  
Binder/Filler, Caulking compound, Paint      Talc fibers 4%      **None Detected ND**

**Lab ID: 15037180      Client Sample #: DH001A-005A**  
Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1      **Description:** Gray brittle material with blue/black paint  
Non-Fibrous Materials:      Other Fibrous Materials:%      **Asbestos Type: %**  
Binder/Filler, Paint, Calcareous particles      Cellulose 2%      **None Detected ND**

**Sampled by:** Client  
**Analyzed by:** Lori Tseng      **Date:** 04/17/2015  
**Reviewed by:** Nick Ly      **Date:** 04/17/2015 Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii

**Batch #: 1506661.00**

Client Project #: 60340502.0500

Date Received: 4/13/2015

Samples Received: 45

Samples Analyzed: 43

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

Brick

**Lab ID: 15037181 Client Sample #: DH001A-005B**

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1 Description: Gray brittle material with blue/black paint

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
Binder/Filler, Paint, Calcareous particles	Cellulose 3%	

**None Detected ND**

Brick

**Lab ID: 15037182 Client Sample #: DH001A-005C**

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1 Description: Gray brittle material with blue/black paint

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
Binder/Filler, Paint, Calcareous particles	Cellulose 2%	

**None Detected ND**

Brick

**Lab ID: 15037183 Client Sample #: DH001A-006A**

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1 Description: Gray brittle material with gravel

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
Binder/Filler, Gravel, Calcareous particles	Cellulose <1%	

**None Detected ND**

**Lab ID: 15037184 Client Sample #: DH001A-006B**

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1 Description: Gray brittle material with gravel

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
Binder/Filler, Gravel, Calcareous particles	Cellulose 1%	
	Synthetic fibers <1%	

**None Detected ND**

**Sampled by:** Client

**Analyzed by:** Lori Tseng

**Reviewed by:** Nick Ly

**Date:** 04/17/2015

**Date:** 04/17/2015 *NL* Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Batch #: 1506661.00**

Client Project #: 60340502.0500

Date Received: 4/13/2015

Samples Received: 45

Samples Analyzed: 43

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii

**Lab ID: 15037185      Client Sample #: DH001A-006C**

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1      Description: Gray brittle material

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
Binder/Filler, Calcareous particles, Fine grains	Cellulose 2%	
		<b>None Detected ND</b>

**Lab ID: 15037186      Client Sample #: DH001A-007A**

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1      Description: Gray brittle skim coat material with brown surface

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
Binder/Filler, Calcareous particles, Gravel	Cellulose 2%	
Miscellaneous particles, Mineral grains	Synthetic fibers 3%	<b>None Detected ND</b>

**Lab ID: 15037187      Client Sample #: DH001A-007B**

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1      Description: Gray brittle skim coat material with brown surface

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
Binder/Filler, Mineral grains, Calcareous particles	None Detected ND	
		<b>None Detected ND</b>

**Lab ID: 15037188      Client Sample #: DH001A-007C**

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1      Description: Gray brittle skim coat material with brown surface

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
Binder/Filler, Mineral grains, Calcareous particles	Cellulose 2%	
		<b>None Detected ND</b>
		Synthetic fibers <1%

**Sampled by:** Client  
**Analyzed by:** Lori Tseng      **Date:** 04/17/2015  
**Reviewed by:** Nick Ly      **Date:** 04/17/2015      *Nick Ly*  
 Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii

Batch #: 1506661.00

Client Project #: 60340502.0500

Date Received: 4/13/2015

Samples Received: 45

Samples Analyzed: 43

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

**Lab ID: 15037189**      **Client Sample #: DH001A-007D**

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1      Description: Gray brittle skim coat material with brown surface

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
Binder/Filler, Calcareous particles, Mineral grains	Cellulose    1%	<b>None Detected ND</b>

**Lab ID: 15037190**      **Client Sample #: DH001A-007E**

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1      Description: Gray brittle skim coat material with brown surface

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
Binder/Filler, Calcareous particles, Mineral grains	None Detected    ND	<b>None Detected ND</b>

**Lab ID: 15037191**      **Client Sample #: DH001A-008A**

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1      Description: Gray brittle material

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
Binder/Filler, Calcareous particles, Mineral grains	None Detected    ND	<b>None Detected ND</b>

**Lab ID: 15037192**      **Client Sample #: DH001A-008B**

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1      Description: Gray brittle material

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
Binder/Filler, Calcareous particles, Mineral grains	Cellulose    <1%	<b>None Detected ND</b>

**Lab ID: 15037193**      **Client Sample #: DH001A-008C**

Location: DOD Demo, Honolulu, Hawaii

**Sampled by:** Client  
**Analyzed by:** Lori Tseng      **Date:** 04/17/2015  
**Reviewed by:** Nick Ly      **Date:** 04/17/2015 Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii

Batch #: 1506661.00

Client Project #: 60340502.0500

Date Received: 4/13/2015

Samples Received: 45

Samples Analyzed: 43

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

Layer 1 of 1	Description: Gray brittle material	Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: %
	Binder/Filler, Calcareous particles, Mineral grains		Cellulose 2%	None Detected ND

Lab ID: 15037194 Client Sample #: DH001A-009A

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1	Description: White brittle caulking material with paint	Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: %
	Binder/Filler, Paint, Calcareous particles		Cellulose 2%	None Detected ND
	Caulking compound			

Lab ID: 15037195 Client Sample #: DH001A-009B

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1	Description: Clear soft caulking material with paint	Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: %
	Caulking compound, Binder/Filler, Paint		Cellulose 2%	None Detected ND
			Synthetic fibers <1%	

Lab ID: 15037196 Client Sample #: DH001A-009C

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1	Description: Clear soft caulking material with paint	Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: %
	Binder/Filler, Paint, Caulking compound		Cellulose 3%	None Detected ND

Lab ID: 15037197 Client Sample #: DH001A-010A

Location: DOD Demo, Honolulu, Hawaii

Sampled by: Client

Analyzed by: Lori Tseng

Reviewed by: Nick Ly

Date: 04/17/2015

Date: 04/17/2015 For Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM  
Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Batch #: 1506661.00**  
Client Project #: 60340502.0500  
Date Received: 4/13/2015  
Samples Received: 45  
Samples Analyzed: 43  
Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

**Attention: Mr. Fletcher Kimura**  
Project Location: DOD Demo, Honolulu, Hawaii

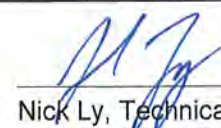
<b>Layer 1 of 2</b>	<b>Description:</b> Tan ceramic tile	Non-Fibrous Materials: Ceramic/Binder	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 2 of 2</b>	<b>Description:</b> White brittle material	Non-Fibrous Materials: Binder/Filler, Calcareous particles	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>

**Lab ID: 15037198**      **Client Sample #: DH001A-010B**  
Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 3</b>	<b>Description:</b> Tan ceramic tile	Non-Fibrous Materials: Ceramic/Binder	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 2 of 3</b>	<b>Description:</b> White brittle material	Non-Fibrous Materials: Binder/Filler, Mineral/Binder	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 3 of 3</b>	<b>Description:</b> Gray sandy/brittle material	Non-Fibrous Materials: Sand, Binder/Filler, Calcareous particles	Other Fibrous Materials:% Cellulose 3% Mineral fibers 1%	<b>Asbestos Type: %</b> <b>None Detected ND</b>

**Lab ID: 15037199**      **Client Sample #: DH001A-010C**  
Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 3</b>	<b>Description:</b> Tan ceramic tile	Non-Fibrous Materials: Ceramic/Binder	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
---------------------	--------------------------------------	--	---	--

<b>Sampled by:</b> Client	<b>Date:</b> 04/17/2015
<b>Analyzed by:</b> Lori Tseng	<b>Date:</b> 04/17/2015
<b>Reviewed by:</b> Nick Ly	<b>Date:</b> 04/17/2015  Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Batch #: 1506661.00**

Client Project #: 60340502.0500

Date Received: 4/13/2015

Samples Received: 45

Samples Analyzed: 43

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii

<b>Layer 2 of 3</b>	<b>Description:</b> Gray sandy/brittle material	Non-Fibrous Materials: Sand, Binder/Filler, Granules	Other Fibrous Materials:% Cellulose 2%	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 3 of 3</b>	<b>Description:</b> White brittle material	Non-Fibrous Materials: Binder/Filler, Mineral grains	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>

**Lab ID: 15037200      Client Sample #: DH001A-013A**

Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 2</b>	<b>Description:</b> Brown ceramic tile	Non-Fibrous Materials: Ceramic/Binder	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 2 of 2</b>	<b>Description:</b> Gray sandy/brittle material	Non-Fibrous Materials: Sand, Binder/Filler, Calcareous particles	Other Fibrous Materials:% Cellulose 3% Synthetic fibers 1%	<b>Asbestos Type: %</b> <b>None Detected ND</b>

**Lab ID: 15037201      Client Sample #: DH001A-013B**

Location: DOD Demo, Honolulu, Hawaii

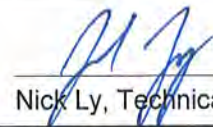
<b>Layer 1 of 2</b>	<b>Description:</b> Brown ceramic tile	Non-Fibrous Materials: Ceramic/Binder	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 2 of 2</b>	<b>Description:</b> Gray sandy/brittle material	Non-Fibrous Materials: Sand, Binder/Filler, Mineral grains	Other Fibrous Materials:% Cellulose 2% Synthetic fibers <1%	<b>Asbestos Type: %</b> <b>None Detected ND</b>

**Sampled by:** Client

**Analyzed by:** Lori Tseng

**Reviewed by:** Nick Ly

**Date:** 04/17/2015

**Date:** 04/17/2015  Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii

**Batch #: 1506661.00**

Client Project #: 60340502.0500

Date Received: 4/13/2015

Samples Received: 45

Samples Analyzed: 43

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

**Lab ID: 15037202      Client Sample #: DH001A-013C**

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 2	Description: Brown/beige ceramic tile	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
		Ceramic/Binder	None Detected ND	
Layer 2 of 2	Description: Gray brittle material	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
		Binder/Filler, Granules	None Detected ND	

**Lab ID: 15037203      Client Sample #: DH001A-015A**

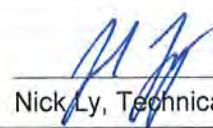
Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 2	Description: White brittle caulking material	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
		Binder/Filler, Caulking compound	Talc fibers 5%	
Layer 2 of 2	Description: Trace green soft caulking material	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
		Binder/Filler, Caulking compound	Cellulose 1%	

**Lab ID: 15037204      Client Sample #: DH001A-015B**

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 2	Description: White brittle caulking material	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
		Binder/Filler, Caulking compound	Talc fibers 4%	
Layer 2 of 2	Description: Green soft caulking material	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
		Binder/Filler, Caulking compound	Cellulose 2%	

**Sampled by:** Client  
**Analyzed by:** Lori Tseng      **Date:** 04/17/2015  
**Reviewed by:** Nick Ly      **Date:** 04/17/2015 *for*  Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Batch #: 1506661.00**

Client Project #: 60340502.0500

Date Received: 4/13/2015

Samples Received: 45

Samples Analyzed: 43

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii

**Lab ID: 15037205      Client Sample #: DH001A-015C**

Location: DOD Demo, Honolulu, Hawaii

Comments: No green caulking material present.

Layer 1 of 1      **Description:** White brittle caulking material

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
Binder/Filler, Caulking compound	Talc fibers    6%	<b>None Detected ND</b>

**Lab ID: 15037206      Client Sample #: DH001A-016A**

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1      **Description:** Gray brittle material with brown surface

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
Binder/Filler, Sand, Granules	Cellulose    2%	<b>None Detected ND</b>
	Synthetic fibers    1%	

**Lab ID: 15037207      Client Sample #: DH001A-016B**

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1      **Description:** Gray brittle material with brown surface

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
Binder/Filler, Sand, Granules	Cellulose    3%	<b>None Detected ND</b>

**Lab ID: 15037208      Client Sample #: DH001A-016C**

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1      **Description:** Gray brittle material with brown surface

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
Binder/Filler, Sand, Granules	Cellulose    2%	<b>None Detected ND</b>

**Lab ID: 15037209      Client Sample #: DH001A-017A**

Location: DOD Demo, Honolulu, Hawaii

**Sampled by:** Client

**Analyzed by:** Lori Tseng

**Reviewed by:** Nick Ly

**Date:** 04/17/2015

**Date:** 04/17/2015 *Nick Ly* Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii

**Batch #: 1506661.00**

Client Project #: 60340502.0500

Date Received: 4/13/2015

Samples Received: 45

Samples Analyzed: 43

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

<b>Layer 1 of 3</b>	<b>Description:</b> Brown vinyl tile	Non-Fibrous Materials: Vinyl/Binder, Mineral grains	Other Fibrous Materials:% Cellulose 1%	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 2 of 3</b>	<b>Description:</b> Yellow soft mastic	Non-Fibrous Materials: Mastic/Binder	Other Fibrous Materials:% Cellulose 4%	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 3 of 3</b>	<b>Description:</b> Gray sandy/brittle material	Non-Fibrous Materials: Sand, Binder/Filler, Mineral grains Gravel	Other Fibrous Materials:% Cellulose 2%	<b>Asbestos Type: %</b> <b>None Detected ND</b>

**Lab ID: 15037210**      **Client Sample #: DH001A-017B**

Location: DOD Demo, Honolulu, Hawaii

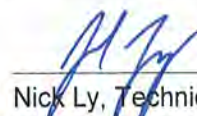
<b>Layer 1 of 4</b>	<b>Description:</b> Brown vinyl tile	Non-Fibrous Materials: Vinyl/Binder, Mineral grains	Other Fibrous Materials:% Cellulose 2%	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 2 of 4</b>	<b>Description:</b> Yellow soft mastic	Non-Fibrous Materials: Mastic/Binder	Other Fibrous Materials:% Cellulose 4% Synthetic fibers 2%	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 3 of 4</b>	<b>Description:</b> Brown vinyl tile	Non-Fibrous Materials: Vinyl/Binder, Mineral grains	Other Fibrous Materials:% Cellulose 1%	<b>Asbestos Type: %</b> <b>Chrysotile 3%</b>
<b>Layer 4 of 4</b>	<b>Description:</b> Black asphaltic mastic	Non-Fibrous Materials: Asphalt/Binder, Binder/Filler	Other Fibrous Materials:% Cellulose 2%	<b>Asbestos Type: %</b> <b>Chrysotile 2%</b>

**Sampled by:** Client

**Analyzed by:** Lori Tseng

**Reviewed by:** Nick Ly

**Date:** 04/17/2015

**Date:** 04/17/2015 *for*  Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government





# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii

**Batch #: 1506661.00**

Client Project #: 60340502.0500

Date Received: 4/13/2015

Samples Received: 45

Samples Analyzed: 43

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

Synthetic fibers 1%

**Lab ID: 15037211**

**Client Sample #: DH001A-017C**

**Sample Status:**

**Not Analyzed**

**Sampled by:** Client

**Analyzed by:** Lori Tseng

**Reviewed by:** Nick Ly

**Date:** 04/17/2015

**Date:** 04/17/2015  Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# ASBESTOS CHAIN OF CUSTODY

# 1506661

### Turn Around Time

- 1 Hour
- 2 Hours
- 4 Hours
- 24 Hours
- 2 Days
- 3 Days
- 4 Days
- 5 Days
- 10 Days

Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company AECOM  
 Address 1001 Bishop Street, Suite 1600  
Honolulu, Hawaii 96813  
 Phone (808) 954-4536

Project Manager Fletcher Kimura  
 Cell ( 808 ) 542 - 3752  
 Email fletcher.kimura@aecom.com  
 Fax ( 808 ) 523 - 8950

Project Name/Number 60340502.0500 Project Location DOD Demo, Honolulu, Hawaii

- PCM Air (NIOSH 7400)
- PLM (EPA 600/R-93-116)
- PLM Gravimetry (600/R-93-116)
- Asbestos Friable/Non-Friable (EPA 600/R-93/116)
- TEM (NIOSH 7402)
- EPA 400 Points (600/R-93-116)
- Asbestos in Vermiculite (EPA 600/R-04/004)
- Other PLEASE STOP ON FIRST POSITIVE
- TEM (AHERA)
- EPA 1000Points (600/R-93-116)
- Asbestos in Sediment (EPA 1900 Points)

Reporting Instructions Report to Fletcher Kimura. Please cc teresa.quiniola@aecom.com  
 Call ( ) - -  Fax ( ) - -  Email fletcher.kimura@aecom.com

**Total Number of Samples** 128

Sample ID	Description	A/R
1	DH001A-001A	White and pink paint on brick and concrete
2	DH001A-001B	White and pink paint on brick and concrete
3	DH001A-001C	White and pink paint on brick and concrete
4	DH001A-001D	White and pink paint on brick and concrete
5	DH001A-001E	White and pink paint on brick and concrete
6	DH001A-001F	White and pink paint on brick and concrete
7	DH001A-001G	White and pink paint on brick and concrete
8	DH001A-003A	Gray interior window caulk
9	DH001A-003B	Gray interior window caulk
10	DH001A-003C	Gray interior window caulk
11	DH001A-004A	White interior window caulk
12	DH001A-004B	White interior window caulk
13	DH001A-004C	White interior window caulk
14	DH001A-005A	Blue and black paint on brick
15	DH001A-005B	Blue and black paint on brick

	Print Name	Signature	Company	Date	Time
Sampled by	Fletcher Kimura		AECOM	7-Apr-15	9:30-10:47
Relinquish by	Fletcher Kimura		AECOM	10-Apr-15	12:30 pm

**Office Use Only**

	Print Name	Signature	Company	Date	Time
Received by	Max R		NVL	4/13/15	900 Fed Ex
Analyzed by	Lon Benson		NVL	4/17/15	1316
Called by					
Faxed/Email by					





# ASBESTOS CHAIN OF CUSTODY

# 1506661

### Turn Around Time

- 1 Hour       24 Hours       4 Days
- 2 Hours       2 Days       5 Days
- 4 Hours       3 Days       10 Days

Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company AECOM  
 Address 1001 Bishop Street, Suite 1600  
Honolulu, Hawaii 96813  
 Phone (808) 954-4536

Project Manager Fletcher Kimura  
 Cell ( 808 ) 542 - 3752  
 Email fletcher.kimura@aecom.com  
 Fax ( 808 ) 523 - 8950

Project Name/Number 60340502.0500 Project Location DOD Demo, Honolulu, Hawaii

- PCM Air (NIOSH 7400)       TEM (NIOSH 7402)       TEM (AHERA)       TEM (EPA Level II Modified)
- PLM (EPA 600/R-93-116)       EPA 400 Points (600/R-93-116)       EPA 1000Points (600/R-93-116)
- PLM Gravimetry (600/R-93-116)       Asbestos in Vermiculite (EPA 600/R-04/004)       Asbestos in Sediment (EPA 1900 Points)
- Asbestos Friable/Non-Friable (EPA 600/R-93/116)       Other PLEASE STOP ON FIRST POSITIVE

Reporting Instructions Report to Fletcher Kimura. Please cc teresa.quiniola@aecom.com  
 Call (      )       Fax (      )       Email fletcher.kimura@aecom.com

**Total Number of Samples** 128

	Sample ID	Description	A/R
1	DH001A-005C	Blue and black paint on brick	
2	DH001A-006A	Gray threshold leveling compound	
3	DH001A-006B	Gray threshold leveling compound	
4	DH001A-006C	Gray threshold leveling compound	
5	DH001A-007A	Brown skim coat on floor	
6	DH001A-007B	Brown skim coat on floor	
7	DH001A-007C	Brown skim coat on floor	
8	DH001A-007D	Brown skim coat on floor	
9	DH001A-007E	Brown skim coat on floor	
10	DH001A-008A	Gray concrete sealant	
11	DH001A-008B	Gray concrete sealant	
12	DH001A-008C	Gray concrete sealant	
13	DH001A-009A	Sink caulk	
14	DH001A-009B	Sink caulk	
15	DH001A-009C	Sink caulk	

	Print Name	Signature	Company	Date	Time
Sampled by	Fletcher Kimura		AECOM	7-Apr-15	10:53-12:45
Relinquish by	Fletcher Kimura		AECOM	10-Apr-15	12:30 pm

**Office Use Only**

	Print Name	Signature	Company	Date	Time
Received by	<u>Max R</u>		<u>NVL</u>	<u>4/13/15</u>	<u>900 Fed Rep</u>
Analyzed by	<u>Loni Tseng</u>		<u>NVL</u>	<u>4/17/15</u>	<u>13/6</u>
Called by					
Faxed/Email by					



# ASBESTOS CHAIN OF CUSTODY

# 1506661

### Turn Around Time

- 1 Hour       24 Hours       4 Days
- 2 Hours       2 Days       5 Days
- 4 Hours       3 Days       10 Days

Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company AECOM  
 Address 1001 Bishop Street, Suite 1600  
Honolulu, Hawaii 96813  
 Phone (808) 954-4536

Project Manager Fletcher Kimura  
 Cell ( 808 ) 542 - 3752  
 Email fletcher.kimura@aecom.com  
 Fax ( 808 ) 523 - 8950

Project Name/Number 60340502.0500 Project Location DOD Demo, Honolulu, Hawaii

- PCM Air (NIOSH 7400)       TEM (NIOSH 7402)       TEM (AHERA)       TEM (EPA Level II Modified)
- PLM (EPA 600/R-93-116)       EPA 400 Points (600/R-93-116)       EPA 1000Points (600/R-93-116)
- PLM Gravimetry (600/R-93-116)       Asbestos in Vermiculite (EPA 600/R-04/004)       Asbestos in Sediment (EPA 1900 Points)
- Asbestos Friable/Non-Friable (EPA 600/R-93/116)       Other PLEASE STOP ON FIRST POSITIVE

Reporting Instructions Report to Fletcher Kimura. Please cc teresa.quiniola@aecom.com  
 Call (    )       Fax (    )       Email fletcher.kimura@aecom.com

Total Number of Samples 128

Sample ID	Description	A/R
1	DH001A-010A Tan 6"x12" ceramic tile	
2	DH001A-010B Tan 6"x12" ceramic tile	
3	DH001A-010C Tan 6"x12" ceramic tile	
4	DH001A-013A Brown mosaic tile	
5	DH001A-013B Brown mosaic tile	
6	DH001A-013C Brown mosaic tile	
7	DH001A-015A Green and white interior window caulk	
8	DH001A-015B Green and white interior window caulk	
9	DH001A-015C Green and white interior window caulk	
10	DH001A-016A Brown concrete wall base	
11	DH001A-016B Brown concrete wall base	
12	DH001A-016C Brown concrete wall base	
13	DH001A-017A Mottled brown 12"x12" VFT	
14	DH001A-017B Mottled brown 12"x12" VFT	
15	DH001A-017C Mottled brown 12"x12" VFT	

	Print Name	Signature	Company	Date	Time
Sampled by	Fletcher Kimura		AECOM	7-Apr-15	12:50-14:22
Relinquish by	Fletcher Kimura		AECOM	10-Apr-15	12:30 pm

### Office Use Only

	Print Name	Signature	Company	Date	Time
Received by	<u>Max R</u>		<u>NVL</u>	<u>4/13/15</u>	<u>9:00 PM</u>
Analyzed by	<u>Lori Tseng</u>		<u>NVL</u>	<u>4/17/15</u>	<u>1316</u>
Called by					
Faxed/Email by					





April 17, 2015

Fletcher Kimura  
**AECOM**  
1001 Bishop Street, Suite 1600  
Honolulu, HI 96813



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**RE: Bulk Asbestos Fiber Analysis, NVL Batch # 1506663.00**

Dear Mr. Kimura,

Enclosed please find test results for the bulk samples submitted to our laboratory for analysis. Examination of these samples was conducted for the presence of identifiable asbestos fibers using polarized light microscopy (PLM) with dispersion staining in accordance with both U.S. EPA 600/M4-82-020, Interim Method for Determination of Asbestos in Bulk Insulation Samples, as found in 40 CFR, Part 763, Subpart E, Appendix E (formerly Subpart F, Appendix A), and U.S. EPA 600/R-93/116 (July 1993) Test Methods.

For samples containing more than one separable layer of materials, the report will include findings for each layer (labeled Layer 1 and Layer 2, etc. for each individual layer). The asbestos concentration in the sample is determined by visual estimation.

For those samples with asbestos concentrations between 1 and 10 percent based on visual estimation, the EPA recommends a procedure known as point counting (NESHAPS, 40 CFR Part 61). Point counting is a statistically more accurate means of quantification for samples with low concentrations of asbestos. If you would like us to further refine the concentration estimates of asbestos in these samples using point counting, please let me know.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. Please do not hesitate to call if there is anything further we can assist you with.

Sincerely,

  
For Nick Ly, Technical Director



Lab Code: 102063-0

**1.888.NVL.LABS**  
**1.888.(685.5227)**  
www.nvllabs.com

Enc.: Sample Results

NVL Laboratories, Inc.  
4708 Aurora Ave N, Seattle, WA 98103  
p 206.547.0100 | f 206.634.1936

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii

Batch #: 1506663.00

Client Project #: 60340502.0500

Date Received: 4/13/2015

Samples Received: 45

Samples Analyzed: 44

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

**Lab ID: 15037216      Client Sample #: DH001A-017D      Sample Status:      Not Analyzed**

Sample 017D not analyzed based on Batch 150661 sample 017B result (stop at first positive)

**Lab ID: 15037217      Client Sample #: DH001A-018A**

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 2	Description: Brown rubbery material	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
		Rubber/Binder, Calcareous particles	None Detected ND	

Layer 2 of 2	Description: Light beige soft mastic with paint	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
		Mastic/Binder, Paint	None Detected ND	

**Lab ID: 15037218      Client Sample #: DH001A-018B**

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 2	Description: Brown rubbery material	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
		Rubber/Binder, Calcareous particles	None Detected ND	

Layer 2 of 2	Description: Light beige soft mastic with paint	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
		Mastic/Binder, Paint	Cellulose 1%	

**Lab ID: 15037219      Client Sample #: DH001A-018C**

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 2	Description: Brown rubbery material	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
		Rubber/Binder, Calcareous particles	None Detected ND	

<b>Sampled by:</b> Client	
<b>Analyzed by:</b> Nadezhda Prsyazhnyuk	
<b>Reviewed by:</b> Nick Ly	

Date: 04/17/2015  
Date: 04/17/2015 Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii

**Batch #: 1506663.00**

Client Project #: 60340502.0500

Date Received: 4/13/2015

Samples Received: 45

Samples Analyzed: 44

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

**Layer 2 of 2** Description: Light beige soft mastic with paint

Non-Fibrous Materials:  
Mastic/Binder, Paint

Other Fibrous Materials:%  
None Detected ND

**Asbestos Type: %**  
**None Detected ND**

**Lab ID: 15037220** Client Sample #: **DH001A-019A**

Location: DOD Demo, Honolulu, Hawaii

**Layer 1 of 1** Description: White flaky material

Non-Fibrous Materials:  
Fine particles, Binder/Filler, Mica

Other Fibrous Materials:%  
Cellulose 7%

**Asbestos Type: %**  
**None Detected ND**

**Lab ID: 15037221** Client Sample #: **DH001A-019B**

Location: DOD Demo, Honolulu, Hawaii

**Layer 1 of 1** Description: White flaky material

Non-Fibrous Materials:  
Fine particles, Binder/Filler, Mica

Other Fibrous Materials:%  
Cellulose 15%

**Asbestos Type: %**  
**None Detected ND**

**Lab ID: 15037222** Client Sample #: **DH001A-019C**

Location: DOD Demo, Honolulu, Hawaii

**Layer 1 of 1** Description: White flaky material

Non-Fibrous Materials:  
Fine particles, Binder/Filler, Mica

Other Fibrous Materials:%  
Cellulose 10%

**Asbestos Type: %**  
**None Detected ND**

**Lab ID: 15037223** Client Sample #: **DH001A-020A**

Location: DOD Demo, Honolulu, Hawaii

**Layer 1 of 2** Description: Pink/blue tile

Non-Fibrous Materials:  
Vinyl/Binder, Calcareous particles

Other Fibrous Materials:%  
None Detected ND

**Asbestos Type: %**  
**Chrysotile 4%**

**Sampled by:** Client

**Analyzed by:** Nadezhda Prisyazhnyuk

**Reviewed by:** Nick Ly

**Date:** 04/17/2015

**Date:** 04/17/2015  Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii

**Batch #: 1506663.00**

Client Project #: 60340502.0500

Date Received: 4/13/2015

Samples Received: 45

Samples Analyzed: 44

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

<b>Layer 2 of 2</b>	<b>Description:</b> Black asphaltic mastic			
	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>	
	Asphalt/Binder, Mastic/Binder	Cellulose 3%	<b>None Detected ND</b>	

**Lab ID: 15037224**      **Client Sample #: DH001A-020B**  
Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 2</b>	<b>Description:</b> Pink/blue tile			
	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>	
	Vinyl/Binder, Calcareous particles	None Detected ND	<b>Chrysotile 5%</b>	

<b>Layer 2 of 2</b>	<b>Description:</b> Black asphaltic mastic			
	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>	
	Asphalt/Binder, Mastic/Binder	None Detected ND	<b>None Detected ND</b>	


**Lab ID: 15037225**      **Client Sample #: DH001A-020C**  
Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 2</b>	<b>Description:</b> Pink/blue tile			
	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>	
	Vinyl/Binder, Calcareous particles	None Detected ND	<b>Chrysotile 5%</b>	

<b>Layer 2 of 2</b>	<b>Description:</b> Black asphaltic mastic			
	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>	
	Asphalt/Binder, Mastic/Binder	Cellulose 1%	<b>None Detected ND</b>	

**Lab ID: 15037226**      **Client Sample #: DH001A-021A**  
Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 2</b>	<b>Description:</b> Brown with dark brown specks tile			
	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>	
	Vinyl/Binder, Calcareous particles	None Detected ND	<b>None Detected ND</b>	

<b>Sampled by:</b> Client	
<b>Analyzed by:</b> Nadezhda Prsyazhnyuk	<b>Date:</b> 04/17/2015
<b>Reviewed by:</b> Nick Ly	<b>Date:</b> 04/17/2015  Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii

**Batch #: 1506663.00**

Client Project #: 60340502.0500

Date Received: 4/13/2015

Samples Received: 45

Samples Analyzed: 44

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

<b>Layer 2 of 2</b>	<b>Description:</b> Tan and black asphaltic mastic			
	Non-Fibrous Materials:	Other Fibrous Materials: %		<b>Asbestos Type: %</b>
	Mastic/Binder, Asphalt/Binder	None Detected ND		<b>None Detected ND</b>

**Lab ID: 15037227 Client Sample #: DH001A-021B**

Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 2</b>	<b>Description:</b> Brown with dark brown specks tile			
	Non-Fibrous Materials:	Other Fibrous Materials: %		<b>Asbestos Type: %</b>
	Vinyl/Binder, Calcareous particles	None Detected ND		<b>None Detected ND</b>

<b>Layer 2 of 2</b>	<b>Description:</b> Tan and black asphaltic mastic			
	Non-Fibrous Materials:	Other Fibrous Materials: %		<b>Asbestos Type: %</b>
	Mastic/Binder, Asphalt/Binder	Cellulose 3%		<b>None Detected ND</b>

**Lab ID: 15037228 Client Sample #: DH001A-021C**

Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 3</b>	<b>Description:</b> Brown with dark brown specks tile			
	Non-Fibrous Materials:	Other Fibrous Materials: %		<b>Asbestos Type: %</b>
	Vinyl/Binder, Calcareous particles	None Detected ND		<b>None Detected ND</b>

<b>Layer 2 of 3</b>	<b>Description:</b> Black asphaltic mastic			
	Non-Fibrous Materials:	Other Fibrous Materials: %		<b>Asbestos Type: %</b>
	Asphalt/Binder, Mastic/Binder	None Detected ND		<b>None Detected ND</b>

<b>Layer 3 of 3</b>	<b>Description:</b> Trace light gray brittle material			
	Non-Fibrous Materials:	Other Fibrous Materials: %		<b>Asbestos Type: %</b>
	Fine particles, Binder/Filler	None Detected ND		<b>None Detected ND</b>

**Lab ID: 15037229 Client Sample #: DH001A-022A**

Location: DOD Demo, Honolulu, Hawaii

**Sampled by:** Client  
**Analyzed by:** Nadezhda Prisyazhnyuk **Date:** 04/17/2015  
**Reviewed by:** Nick Ly **Date:** 04/17/2015 *Nick Ly* Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii

Batch #: 1506663.00

Client Project #: 60340502.0500

Date Received: 4/13/2015

Samples Received: 45

Samples Analyzed: 44

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

Layer 1 of 1	Description: Tan compressed fibrous material with paint			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Fine particles, Adhesive/Binder, Paint	Cellulose 95%		None Detected ND

Lab ID: 15037230 Client Sample #: DH001A-022B  
Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1	Description: Tan compressed fibrous material with paint			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Fine particles, Adhesive/Binder, Paint	Cellulose 93%		None Detected ND

Lab ID: 15037231 Client Sample #: DH001A-022C  
Location: DOD Demo, Honolulu, Hawaii


Layer 1 of 1	Description: Tan compressed fibrous material with paint			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Fine particles, Adhesive/Binder, Paint	Cellulose 96%		None Detected ND

Lab ID: 15037232 Client Sample #: DH001A-022D  
Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1	Description: Tan compressed fibrous material with paint			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Fine particles, Adhesive/Binder, Paint	Cellulose 94%		None Detected ND

Lab ID: 15037233 Client Sample #: DH001A-022E  
Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1	Description: Tan compressed fibrous material with paint			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Fine particles, Adhesive/Binder, Paint	Cellulose 92%		None Detected ND

<p><b>Sampled by:</b> Client</p> <p><b>Analyzed by:</b> Nadezhda Prsyazhnyuk</p> <p><b>Reviewed by:</b> Nick Ly</p>	<p><b>Date:</b> 04/17/2015</p> <p><b>Date:</b> 04/17/2015  Nick Ly, Technical Director</p>
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Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii

Batch #: 1506663.00

Client Project #: 60340502.0500

Date Received: 4/13/2015

Samples Received: 45

Samples Analyzed: 44

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

Lab ID: 15037234 Client Sample #: DH001A-023A

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1 Description: Tan compressed fibrous material with paint

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
Fine particles, Adhesive/Binder, Paint	Cellulose 90%	

**None Detected ND**

Lab ID: 15037235 Client Sample #: DH001A-023B

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1 Description: Tan compressed fibrous material with paint

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
Fine particles, Adhesive/Binder, Paint	Cellulose 94%	

**None Detected ND**

Lab ID: 15037236 Client Sample #: DH001A-023C

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1 Description: Tan compressed fibrous material with paint

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
Fine particles, Adhesive/Binder, Paint	Cellulose 92%	

**None Detected ND**

Lab ID: 15037237 Client Sample #: DH001A-024A

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1 Description: Beige soft mastic

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
Mastic/Binder, Calcareous particles	Glass fibers 2%	

**None Detected ND**

Lab ID: 15037238 Client Sample #: DH001A-024B

Location: DOD Demo, Honolulu, Hawaii

<b>Sampled by:</b> Client	<b>Date:</b> 04/17/2015
<b>Analyzed by:</b> Nadezhda Prisyazhnyuk	<b>Date:</b> 04/17/2015 <i>NL</i>
<b>Reviewed by:</b> Nick Ly	<b>Date:</b> 04/17/2015 <i>NL</i> Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# Bulk Asbestos Fibers Analysis

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Address: 1001 Bishop Street, Suite 1600  
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**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii

**Batch #: 1506663.00**

Client Project #: 60340502.0500

Date Received: 4/13/2015

Samples Received: 45

Samples Analyzed: 44

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

<b>Layer 1 of 1</b>	<b>Description:</b> Beige soft mastic with trace adhesive and paint		
	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
	Mastic/Binder, Calcareous particles, Adhesive/Binder	None Detected ND	<b>None Detected ND</b>
	Paint		

**Lab ID: 15037239**      **Client Sample #: DH001A-024C**  
Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 2</b>	<b>Description:</b> White material with adhesive		
	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
	Synthetic/Binder, Adhesive/Binder	None Detected ND	<b>None Detected ND</b>

<b>Layer 2 of 2</b>	<b>Description:</b> Beige soft mastic		
	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
	Mastic/Binder, Calcareous particles	None Detected ND	<b>None Detected ND</b>


**Lab ID: 15037240**      **Client Sample #: DH001A-025A**  
Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 2</b>	<b>Description:</b> Tan with brown streaks tile		
	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
	Vinyl/Binder, Calcareous particles	None Detected ND	<b>None Detected ND</b>

<b>Layer 2 of 2</b>	<b>Description:</b> Trace black asphaltic mastic		
	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
	Asphalt/Binder, Mastic/Binder	None Detected ND	<b>None Detected ND</b>

**Lab ID: 15037241**      **Client Sample #: DH001A-025B**  
Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 3</b>	<b>Description:</b> Tan with brown streaks tile		
	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
	Vinyl/Binder, Calcareous particles	None Detected ND	<b>None Detected ND</b>

**Sampled by:** Client  
**Analyzed by:** Nadezhda Prisyazhnyuk      **Date:** 04/17/2015  
**Reviewed by:** Nick Ly      **Date:** 04/17/2015  Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii

**Batch #: 1506663.00**

Client Project #: 60340502.0500

Date Received: 4/13/2015

Samples Received: 45

Samples Analyzed: 44

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

<b>Layer 2 of 3</b>	<b>Description:</b> Black asphaltic mastic	Non-Fibrous Materials: Adhesive/Binder, Mastic/Binder	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 3 of 3</b>	<b>Description:</b> Gray brittle material	Non-Fibrous Materials: Fine particles, Binder/Filler, Mineral grains	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>

**Lab ID: 15037242 Client Sample #: DH001A-025C**


Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 2</b>	<b>Description:</b> Tan with brown streaks tile	Non-Fibrous Materials: Vinyl/Binder, Calcareous particles	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 2 of 2</b>	<b>Description:</b> Black asphaltic mastic	Non-Fibrous Materials: Adhesive/Binder, Mastic/Binder	Other Fibrous Materials:% Cellulose 1%	<b>Asbestos Type: %</b> <b>None Detected ND</b>

**Lab ID: 15037243 Client Sample #: DH001A-026A**

Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 3</b>	<b>Description:</b> White compacted powdery material with paint	Non-Fibrous Materials: Calcareous particles, Binder/Filler, Perlite Paint	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 2 of 3</b>	<b>Description:</b> White compacted powdery material with paper	Non-Fibrous Materials: Calcareous particles, Binder/Filler	Other Fibrous Materials:% Cellulose 45%	<b>Asbestos Type: %</b> <b>None Detected ND</b>

<b>Sampled by:</b> Client	<b>Analyzed by:</b> Nadezhda Prsyazhnyuk	<b>Date:</b> 04/17/2015	 _____ Nick Ly, Technical Director
<b>Reviewed by:</b> Nick Ly		<b>Date:</b> 04/17/2015	

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii

**Batch #: 1506663.00**

Client Project #: 60340502.0500

Date Received: 4/13/2015

Samples Received: 45

Samples Analyzed: 44

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

<b>Layer 3 of 3</b>	<b>Description:</b> White chalky material with paper	Non-Fibrous Materials: Other Fibrous Materials: %	Fine particles, Gypsum/Binder Cellulose 18%	<b>Asbestos Type: %</b> <b>None Detected ND</b>
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**Lab ID: 15037244      Client Sample #: DH001A-026B**

Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 3</b>	<b>Description:</b> White compacted powdery material with paint	Non-Fibrous Materials: Other Fibrous Materials: %	Fine particles, Binder/Filler, Perlite None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
	Paint			

<b>Layer 2 of 3</b>	<b>Description:</b> White compacted powdery material with paper	Non-Fibrous Materials: Other Fibrous Materials: %	Calcareous particles, Binder/Filler Cellulose 30%	<b>Asbestos Type: %</b> <b>None Detected ND</b>
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<b>Layer 3 of 3</b>	<b>Description:</b> White chalky material	Non-Fibrous Materials: Other Fibrous Materials: %	Gypsum/Binder Cellulose 3%	<b>Asbestos Type: %</b> <b>None Detected ND</b>
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**Lab ID: 15037245      Client Sample #: DH001A-026C**

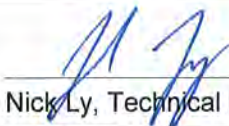
Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 3</b>	<b>Description:</b> White compacted powdery material with paint	Non-Fibrous Materials: Other Fibrous Materials: %	Fine particles, Binder/Filler, Perlite None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
	Paint			

<b>Layer 2 of 3</b>	<b>Description:</b> White compacted powdery material with paper	Non-Fibrous Materials: Other Fibrous Materials: %	Calcareous particles, Binder/Filler Cellulose 35%	<b>Asbestos Type: %</b> <b>None Detected ND</b>
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**Sampled by:** Client

**Analyzed by:** Nadezhda Prsyazhnyuk      **Date:** 04/17/2015

**Reviewed by:** Nick Ly      **Date:** 04/17/2015       Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii

Batch #: 1506663.00

Client Project #: 60340502.0500

Date Received: 4/13/2015

Samples Received: 45

Samples Analyzed: 44

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

<b>Layer 3 of 3</b>	<b>Description:</b> White chalky material with paper			
	Non-Fibrous Materials:	Other Fibrous Materials:%	<b>Asbestos Type: %</b>	
	Fine particles, Gypsum/Binder	Cellulose 25%	<b>None Detected ND</b>	

**Lab ID: 15037246**      **Client Sample #: DH001A-027A**  
Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 2</b>	<b>Description:</b> Black rubbery material			
	Non-Fibrous Materials:	Other Fibrous Materials:%	<b>Asbestos Type: %</b>	
	Rubber/Binder, Calcareous particles	None Detected ND	<b>None Detected ND</b>	

<b>Layer 2 of 2</b>	<b>Description:</b> Brown soft mastic with trace paint			
	Non-Fibrous Materials:	Other Fibrous Materials:%	<b>Asbestos Type: %</b>	
	Mastic/Binder, Paint	Talc fibers 2%	<b>None Detected ND</b>	

**Lab ID: 15037247**      **Client Sample #: DH001A-027B**  
Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 3</b>	<b>Description:</b> Black rubbery material			
	Non-Fibrous Materials:	Other Fibrous Materials:%	<b>Asbestos Type: %</b>	
	Rubber/Binder, Calcareous particles	None Detected ND	<b>None Detected ND</b>	

<b>Layer 2 of 3</b>	<b>Description:</b> Brown brittle mastic			
	Non-Fibrous Materials:	Other Fibrous Materials:%	<b>Asbestos Type: %</b>	
	Mastic/Binder	Talc fibers 3%	<b>None Detected ND</b>	

<b>Layer 3 of 3</b>	<b>Description:</b> Trace off-white material with paint			
	Non-Fibrous Materials:	Other Fibrous Materials:%	<b>Asbestos Type: %</b>	
	Fine particles, Binder/Filler, Paint	None Detected ND	<b>None Detected ND</b>	

**Lab ID: 15037248**      **Client Sample #: DH001A-027C**  
Location: DOD Demo, Honolulu, Hawaii

<b>Sampled by:</b> Client		
<b>Analyzed by:</b> Nadezhda Prysyzhnyuk	<b>Date:</b> 04/17/2015	
<b>Reviewed by:</b> Nick Ly	<b>Date:</b> 04/17/2015	Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii

**Batch #: 1506663.00**

Client Project #: 60340502.0500

Date Received: 4/13/2015

Samples Received: 45

Samples Analyzed: 44

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

<b>Layer 1 of 2</b>	<b>Description:</b> Black rubbery material	Non-Fibrous Materials: Rubber/Binder, Calcareous particles	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 2 of 2</b>	<b>Description:</b> Brown brittle mastic with paint	Non-Fibrous Materials: Mastic/Binder, Paint	Other Fibrous Materials:% Talc fibers 3%	<b>Asbestos Type: %</b> <b>None Detected ND</b>

**Lab ID: 15037249 Client Sample #: DH001A-028A**


Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 3</b>	<b>Description:</b> Tan thin soft mastic	Non-Fibrous Materials: Mastic/Binder	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 2 of 3</b>	<b>Description:</b> Beige with yellow/blue specks tile	Non-Fibrous Materials: Vinyl/Binder, Calcareous particles	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>Chrysotile 5%</b>
<b>Layer 3 of 3</b>	<b>Description:</b> Black thin asphaltic mastic	Non-Fibrous Materials: Asphalt/Binder, Mastic/Binder	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>

**Lab ID: 15037250 Client Sample #: DH001A-028B**

Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 4</b>	<b>Description:</b> Tan thin soft mastic	Non-Fibrous Materials: Mastic/Binder	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 2 of 4</b>	<b>Description:</b> Beige with yellow/blue specks tile	Non-Fibrous Materials: Vinyl/Binder, Calcareous particles	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>Chrysotile 5%</b>

<b>Sampled by:</b> Client	<b>Analyzed by:</b> Nadezhda Prysyzhnyuk	<b>Date:</b> 04/17/2015	
<b>Reviewed by:</b> Nick Ly	<b>Date:</b> 04/17/2015	Nick Ly, Technical Director	

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii

**Batch #: 1506663.00**

Client Project #: 60340502.0500

Date Received: 4/13/2015

Samples Received: 45

Samples Analyzed: 44

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

<b>Layer 3 of 4</b>	<b>Description:</b> Black asphaltic mastic	Non-Fibrous Materials: Asphalt/Binder, Mastic/Binder	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 4 of 4</b>	<b>Description:</b> Light gray brittle material	Non-Fibrous Materials: Fine particles, Binder/Filler, Mineral grains	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>

**Lab ID: 15037251 Client Sample #: DH001A-028C**

Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 3</b>	<b>Description:</b> Tan thin soft mastic	Non-Fibrous Materials: Mastic/Binder	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 2 of 3</b>	<b>Description:</b> Beige with yellow/blue specks tile	Non-Fibrous Materials: Vinyl/Binder, Calcareous particles	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>Chrysotile 4%</b>
<b>Layer 3 of 3</b>	<b>Description:</b> Black asphaltic mastic	Non-Fibrous Materials: Asphalt/Binder, Mastic/Binder	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>

**Lab ID: 15037252 Client Sample #: DH001A-029A**

Location: DOD Demo, Honolulu, Hawaii

Comments: No black asphaltic mastic present

<b>Layer 1 of 3</b>	<b>Description:</b> Blue tile	Non-Fibrous Materials: Vinyl/Binder, Calcareous particles	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 2 of 3</b>	<b>Description:</b> Tan soft mastic	Non-Fibrous Materials: Mastic/Binder	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>

<b>Sampled by:</b> Client	
<b>Analyzed by:</b> Nadezhda Prisyazhnyuk	<b>Date:</b> 04/17/2015
<b>Reviewed by:</b> Nick Ly	<b>Date:</b> 04/17/2015
	Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii

**Batch #: 1506663.00**

Client Project #: 60340502.0500

Date Received: 4/13/2015

Samples Received: 45

Samples Analyzed: 44

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

<b>Layer 3 of 3</b>	<b>Description:</b> Beige tile	Non-Fibrous Materials: Vinyl/Binder, Calcareous particles	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>Chrysotile 4%</b>
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**Lab ID: 15037253 Client Sample #: DH001A-029B**

Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 2</b>	<b>Description:</b> Blue tile	Non-Fibrous Materials: Vinyl/Binder, Calcareous particles	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
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<b>Layer 2 of 2</b>	<b>Description:</b> Tan soft mastic	Non-Fibrous Materials: Mastic/Binder	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
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**Lab ID: 15037254 Client Sample #: DH001A-029C**

Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 2</b>	<b>Description:</b> Blue tile	Non-Fibrous Materials: Vinyl/Binder, Calcareous particles	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
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<b>Layer 2 of 2</b>	<b>Description:</b> Tan soft mastic	Non-Fibrous Materials: Mastic/Binder	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
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**Lab ID: 15037255 Client Sample #: DH001A-030A**

Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 3</b>	<b>Description:</b> Trace light yellow soft mastic with paint	Non-Fibrous Materials: Mastic/Binder, Paint	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
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**Sampled by:** Client

**Analyzed by:** Nadezhda Prsyazhnyuk

**Reviewed by:** Nick Ly

**Date:** 04/17/2015

**Date:** 04/17/2015

Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii

**Batch #: 1506663.00**

Client Project #: 60340502.0500

Date Received: 4/13/2015

Samples Received: 45

Samples Analyzed: 44

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

<b>Layer 2 of 3</b>	<b>Description:</b> Light gray skim coat material with paint			
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>Asbestos Type: %</b>
	Fine particles, Binder/Filler, Paint	None Detected ND		<b>None Detected ND</b>
<b>Layer 3 of 3</b>	<b>Description:</b> Light gray brittle material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>Asbestos Type: %</b>
	Fine particles, Binder/Filler, Mineral grains	None Detected ND		<b>None Detected ND</b>

**Lab ID: 15037256 Client Sample #: DH001A-030B**

Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 2</b>	<b>Description:</b> Light gray skim coat material with paint			
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>Asbestos Type: %</b>
	Fine particles, Binder/Filler, Paint	None Detected ND		<b>None Detected ND</b>
<b>Layer 2 of 2</b>	<b>Description:</b> Light gray brittle material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>Asbestos Type: %</b>
	Fine particles, Binder/Filler, Mineral grains	None Detected ND		<b>None Detected ND</b>

**Lab ID: 15037257 Client Sample #: DH001A-030C**

Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 2</b>	<b>Description:</b> Light gray skim coat material with paint			
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>Asbestos Type: %</b>
	Fine particles, Binder/Filler, Paint	None Detected ND		<b>None Detected ND</b>
<b>Layer 2 of 2</b>	<b>Description:</b> Light gray brittle material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>Asbestos Type: %</b>
	Fine particles, Binder/Filler, Mineral grains	None Detected ND		<b>None Detected ND</b>

**Lab ID: 15037258 Client Sample #: DH001A-031A**

Location: DOD Demo, Honolulu, Hawaii

**Sampled by:** Client

**Analyzed by:** Nadezhda Prysyzhnyuk **Date:** 04/17/2015

**Reviewed by:** Nick Ly **Date:** 04/17/2015 *NL* Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii

Batch #: 1506663.00

Client Project #: 60340502.0500

Date Received: 4/13/2015

Samples Received: 45

Samples Analyzed: 44

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

Layer 1 of 1	Description: White chalky material			
	Non-Fibrous Materials:	Other Fibrous Materials: %		Asbestos Type: %
	Fine particles, Gypsum/Binder	Cellulose 3%		None Detected ND

Lab ID: 15037259 Client Sample #: DH001A-031B

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1	Description: White chalky material			
	Non-Fibrous Materials:	Other Fibrous Materials: %		Asbestos Type: %
	Fine particles, Gypsum/Binder	Cellulose 5%		None Detected ND

Lab ID: 15037260 Client Sample #: DH001A-031C

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 2	Description: White chalky material			
	Non-Fibrous Materials:	Other Fibrous Materials: %		Asbestos Type: %
	Fine particles, Gypsum/Binder	Cellulose 4%		None Detected ND
		Hair <1%		

Layer 2 of 2	Description: Trace light gray brittle material			
	Non-Fibrous Materials:	Other Fibrous Materials: %		Asbestos Type: %
	Binder/Filler, Mineral grains	None Detected ND		None Detected ND

<p><b>Sampled by:</b> Client</p> <p><b>Analyzed by:</b> Nadezhda Prysyzhnyuk</p> <p><b>Reviewed by:</b> Nick Ly</p>	<p><b>Date:</b> 04/17/2015</p> <p><b>Date:</b> 04/17/2015 <i>For</i> Nick Ly, Technical Director</p>
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Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# ASBESTOS CHAIN OF CUSTODY

# 1506663

Turn Around Time

- 1 Hour       24 Hours       4 Days
- 2 Hours       2 Days       5 Days
- 4 Hours       3 Days       10 Days

Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company AECOM  
 Address 1001 Bishop Street, Suite 1600  
Honolulu, Hawaii 96813  
 Phone (808) 954-4536

Project Manager Fletcher Kimura  
 Cell ( 808 ) 542 - 3752  
 Email fletcher.kimura@aecom.com  
 Fax ( 808 ) 523 - 8950

Project Name/Number 60340502.0500 Project Location DOD Demo, Honolulu, Hawaii

- PCM Air (NIOSH 7400)       TEM (NIOSH 7402)       TEM (AHERA)       TEM (EPA Level II Modified)
- PLM (EPA 600/R-93-116)       EPA 400 Points (600/R-93-116)       EPA 1000Points (600/R-93-116)
- PLM Gravimetry (600/R-93-116)       Asbestos in Vermiculite (EPA 600/R-04/004)       Asbestos in Sediment (EPA 1900 Points)
- Asbestos Friable/Non-Friable (EPA 600/R-93/116)       Other PLEASE STOP ON FIRST POSITIVE

Reporting Instructions Report to Fletcher Kimura. Please cc teresa.quiniola@aecom.com  
 Call (      )       Fax (      )       Email fletcher.kimura@aecom.com

**Total Number of Samples** 128

Sample ID	Description	A/R
1	DH001A-017D	Mottled brown 12"x12" VFT
2	DH001A-018A	Brown vinyl covebase
3	DH001A-018B	Brown vinyl covebase
4	DH001A-018C	Brown vinyl covebase
5	DH001A-019A	White kitchen sink insulation
6	DH001A-019B	White kitchen sink insulation
7	DH001A-019C	White kitchen sink insulation
8	DH001A-020A	Pink and Blue 9"x9" VFT
9	DH001A-020B	Pink and Blue 9"x9" VFT
10	DH001A-020C	Pink and Blue 9"x9" VFT
11	DH001A-021A	Brown with dark brown 9"x9" VFT
12	DH001A-021B	Brown with dark brown 9"x9" VFT
13	DH001A-021C	Brown with dark brown 9"x9" VFT
14	DH001A-022A	12"x12" Type A ACT
15	DH001A-022B	12"x12" Type A ACT

	Print Name	Signature	Company	Date	Time
Sampled by	Fletcher Kimura and Teresa Quiniola		AECOM	7-Apr-15, 9-Apr-15	14:27-15:13, 9:45
Relinquish by	Fletcher Kimura		AECOM	10-Apr-15	12:30 pm

**Office Use Only**

	Print Name	Signature	Company	Date	Time
Received by	<u>Max</u>		<u>NVL</u>	<u>4/13/15</u>	<u>9:00 Fed Ex</u>
Analyzed by	<u>Naolio</u>		<u>NVL</u>	<u>4/17/15</u>	<u>12:25 PM</u>
Called by					
Faxed/Email by					





# ASBESTOS CHAIN OF CUSTODY

# 1506663

Turn Around Time

- 1 Hour       24 Hours       4 Days
- 2 Hours       2 Days       5 Days
- 4 Hours       3 Days       10 Days

Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company AECOM  
 Address 1001 Bishop Street, Suite 1600  
Honolulu, Hawaii 96813  
 Phone (808) 954-4536

Project Manager Fletcher Kimura  
 Cell ( 808 ) 542 - 3752  
 Email fletcher.kimura@aecom.com  
 Fax ( 808 ) 523 - 8950

Project Name/Number 60340502.0500 Project Location DOD Demo, Honolulu, Hawaii

- PCM Air (NIOSH 7400)       TEM (NIOSH 7402)       TEM (AHERA)       TEM (EPA Level II Modified)
- PLM (EPA 600/R-93-116)       EPA 400 Points (600/R-93-116)       EPA 1000Points (600/R-93-116)
- PLM Gravimetry (600/R-93-116)       Asbestos in Vermiculite (EPA 600/R-04/004)       Asbestos in Sediment (EPA 1900 Points)
- Asbestos Friable/Non-Friable (EPA 600/R-93/116)       Other PLEASE STOP ON FIRST POSITIVE

Reporting Instructions Report to Fletcher Kimura. Please cc teresa.quiniola@aecom.com  
 Call (      )       Fax (      )       Email fletcher.kimura@aecom.com

**Total Number of Samples** 128

Sample ID	Description	A/R
1	DH001A-022C 12"x12" Type A ACT	
2	DH001A-022D 12"x12" Type A ACT	
3	DH001A-022E 12"x12" Type A ACT	
4	DH001A-023A 12"x12" Type B ACT	
5	DH001A-023B 12"x12" Type B ACT	
6	DH001A-023C 12"x12" Type B ACT	
7	DH001A-024A Conduit glue	
8	DH001A-024B Conduit glue	
9	DH001A-024C Conduit glue	
10	DH001A-025A Tan with brown streaks 12"x12" VFT	
11	DH001A-025B Tan with brown streaks 12"x12" VFT	
12	DH001A-025C Tan with brown streaks 12"x12" VFT	
13	DH001A-026A False wall drywall and joint compound	
14	DH001A-026B False wall drywall and joint compound	
15	DH001A-026C False wall drywall and joint compound	

	Print Name	Signature	Company	Date	Time
Sampled by	Teresa Quiniola	<i>Teresa Quiniola</i>	AECOM	9-Apr-15	9:45-11:00
Relinquish by	Fletcher Kimura	<i>Fletcher Kimura</i>	AECOM	10-Apr-15	12:30 pm

**Office Use Only**

	Print Name	Signature	Company	Date	Time
Received by	<i>Max R</i>	<i>[Signature]</i>	NVL	4/12/15	9:00 PM
Analyzed by	<i>Nadia</i>	<i>[Signature]</i>	NVL	4/17/15	12:25 PM
Called by					
Faxed/Email by					

# 1506663



## ASBESTOS CHAIN OF CUSTODY

### Turn Around Time

- 1 Hour       24 Hours       4 Days
- 2 Hours       2 Days       5 Days
- 4 Hours       3 Days       10 Days

Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company AECOM  
 Address 1001 Bishop Street, Suite 1600  
Honolulu, Hawaii 96813  
 Phone (808) 954-4536

Project Manager Fletcher Kimura  
 Cell ( 808 ) 542 - 3752  
 Email fletcher.kimura@aecom.com  
 Fax ( 808 ) 523 - 8950

Project Name/Number 60340502.0500 Project Location DOD Demo, Honolulu, Hawaii

- PCM Air (NIOSH 7400)       TEM (NIOSH 7402)       TEM (AHERA)       TEM (EPA Level II Modified)
- PLM (EPA 600/R-93-116)       EPA 400 Points (600/R-93-116)       EPA 1000Points (600/R-93-116)
- PLM Gravimetry (600/R-93-116)       Asbestos in Vermiculite (EPA 600/R-04/004)       Asbestos in Sediment (EPA 1900 Points)
- Asbestos Friable/Non-Friable (EPA 600/R-93/116)       Other PLEASE STOP ON FIRST POSITIVE

Reporting Instructions Report to Fletcher Kimura. Please cc teresa.quiniola@aecom.com  
 Call (      )       Fax (      )       Email fletcher.kimura@aecom.com

Total Number of Samples 128

Sample ID	Description	A/R
1	DH001A-027A	Black covebase with brown mastic
2	DH001A-027B	Black covebase with brown mastic
3	DH001A-027C	Black covebase with brown mastic
4	DH001A-028A	Beige tile with black mastic
5	DH001A-028B	Beige tile with black mastic
6	DH001A-028C	Beige tile with black mastic
7	DH001A-029A	Blue 12"x12" VFT with yellow mastic over beige tile with black mastic
8	DH001A-029B	Blue 12"x12" VFT with yellow mastic over beige tile with black mastic
9	DH001A-029C	Blue 12"x12" VFT with yellow mastic over beige tile with black mastic
10	DH001A-030A	Vault skim coat
11	DH001A-030B	Vault skim coat
12	DH001A-030C	Vault skim coat
13	DH001A-031A	White leveling compound
14	DH001A-031B	White leveling compound
15	DH001A-031C	White leveling compound

	Print Name	Signature	Company	Date	Time
Sampled by	Teresa Quiniola		AECOM	9-Apr-15	11:00-13:40
Relinquish by	Fletcher Kimura		AECOM	10-Apr-15	12:30 pm

### Office Use Only

	Print Name	Signature	Company	Date	Time
Received by	<u>Max R</u>		<u>NVL</u>	<u>4/13/15</u>	<u>9:00 Fed Exp</u>
Analyzed by	<u>Nedio</u>		<u>NVL</u>	<u>4/17/15</u>	<u>12:25 PM</u>
Called by					
Faxed/Email by					





April 17, 2015

Fletcher Kimura  
**AECOM**  
1001 Bishop Street, Suite 1600  
Honolulu, HI 96813



INDUSTRIAL  
HYGIENE  
SERVICES

Laboratory | Management | Training

**RE: Bulk Asbestos Fiber Analysis, NVL Batch # 1506664.00**

Dear Mr. Kimura,

Enclosed please find test results for the bulk samples submitted to our laboratory for analysis. Examination of these samples was conducted for the presence of identifiable asbestos fibers using polarized light microscopy (PLM) with dispersion staining in accordance with both U.S. EPA 600/M4-82-020, Interim Method for Determination of Asbestos in Bulk Insulation Samples, as found in 40 CFR, Part 763, Subpart E, Appendix E (formerly Subpart F, Appendix A), and U.S. EPA 600/R-93/116 (July 1993) Test Methods.

For samples containing more than one separable layer of materials, the report will include findings for each layer (labeled Layer 1 and Layer 2, etc. for each individual layer). The asbestos concentration in the sample is determined by visual estimation.

For those samples with asbestos concentrations between 1 and 10 percent based on visual estimation, the EPA recommends a procedure known as point counting (NESHAPS, 40 CFR Part 61). Point counting is a statistically more accurate means of quantification for samples with low concentrations of asbestos. If you would like us to further refine the concentration estimates of asbestos in these samples using point counting, please let me know.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. Please do not hesitate to call if there is anything further we can assist you with.

Sincerely,

A handwritten signature in blue ink, appearing to read "Nick Ly".

Nick Ly, Technical Director



Lab Code: 102063-0

**1.888.NVL.LABS**  
**1.888.(685.5227)**  
www.nvllabs.com

Enc.: Sample Results

NVL Laboratories, Inc.  
4708 Aurora Ave N, Seattle, WA 98103  
p 206.547.0100 | f 206.634.1936

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii

Batch #: 1506664.00

Client Project #: 60340502.0500

Date Received: 4/13/2015

Samples Received: 38

Samples Analyzed: 38

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

**Lab ID: 15037261**      **Client Sample #: DH001A-032A**

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1      Description: White soft material (on wood)

Non-Fibrous Materials:  
Calcareous particles, Binder/Filler

Other Fibrous Materials:%  
None Detected    ND

**Asbestos Type: %**  
**None Detected ND**

**Lab ID: 15037262**      **Client Sample #: DH001A-032B**

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1      Description: White soft material

Non-Fibrous Materials:  
Calcareous particles, Binder/Filler

Other Fibrous Materials:%  
None Detected    ND

**Asbestos Type: %**  
**None Detected ND**

**Lab ID: 15037263**      **Client Sample #: DH001A-032C**

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1      Description: White soft material (on trace wood)

Non-Fibrous Materials:  
Calcareous particles, Binder/Filler

Other Fibrous Materials:%  
None Detected    ND

**Asbestos Type: %**  
**None Detected ND**

**Lab ID: 15037264**      **Client Sample #: DH001A-033A**

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1      Description: Light gray hard brittle material with dark red paint

Non-Fibrous Materials:  
Binder/Filler, Mineral grains, Gravel  
Paint

Other Fibrous Materials:%  
Cellulose    2%

**Asbestos Type: %**  
**None Detected ND**

**Lab ID: 15037265**      **Client Sample #: DH001A-033B**

Location: DOD Demo, Honolulu, Hawaii

**Sampled by:** Client

**Analyzed by:** Nadezhda Prisyazhnyuk

**Reviewed by:** Nick Ly

**Date:** 04/17/2015

**Date:** 04/17/2015 Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii

Batch #: 1506664.00

Client Project #: 60340502.0500

Date Received: 4/13/2015

Samples Received: 38

Samples Analyzed: 38

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

Layer 1 of 1	Description: Light gray hard brittle material with dark red paint			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Binder/Filler, Mineral grains, Gravel	None Detected	ND	None Detected ND
	Paint			

Lab ID: 15037266 Client Sample #: DH001A-033C

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1	Description: Light gray hard brittle material with dark red paint			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Binder/Filler, Mineral grains, Gravel	None Detected	ND	None Detected ND
	Paint			

Lab ID: 15037267 Client Sample #: DH001A-033D

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1	Description: Light gray hard brittle material with dark red paint			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Binder/Filler, Mineral grains, Gravel	Cellulose	1%	None Detected ND
	Paint			

Lab ID: 15037268 Client Sample #: DH001A-033E

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1	Description: Light gray hard brittle material with dark red paint			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Binder/Filler, Mineral grains, Gravel	None Detected	ND	None Detected ND
	Paint			

Lab ID: 15037269 Client Sample #: DH001A-035A

Location: DOD Demo, Honolulu, Hawaii

<p>Sampled by: Client</p> <p>Analyzed by: Nadezhda Prsyazhnyuk</p> <p>Reviewed by: Nick Ly</p>	<p>Date: 04/17/2015</p> <p>Date: 04/17/2015</p>	<p></p> <p>Nick Ly, Technical Director</p>
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Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii

**Batch #: 1506664.00**

Client Project #: 60340502.0500

Date Received: 4/13/2015

Samples Received: 38

Samples Analyzed: 38

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

<b>Layer 1 of 2</b>	<b>Description:</b> Off-white/gray soft material	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
		Binder/Filler	None Detected ND	<b>None Detected ND</b>
<b>Layer 2 of 2</b>	<b>Description:</b> Light gray hard brittle material with dark red surface	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
		Binder/Filler, Mineral grains, Gravel	None Detected ND	<b>None Detected ND</b>

**Lab ID: 15037270 Client Sample #: DH001A-035B**

Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 1</b>	<b>Description:</b> Dark gray material	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
		Binder/Filler	None Detected ND	<b>None Detected ND</b>

**Lab ID: 15037271 Client Sample #: DH001A-035C**

Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 2</b>	<b>Description:</b> Dark gray/gray material	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
		Binder/Filler, Synthetic/Binder	None Detected ND	<b>None Detected ND</b>
<b>Layer 2 of 2</b>	<b>Description:</b> Light gray hard brittle material with dark red surface	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
		Binder/Filler, Mineral grains, Gravel	None Detected ND	<b>None Detected ND</b>

**Lab ID: 15037272 Client Sample #: DH001A-036A**

Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 1</b>	<b>Description:</b> Dark brown brittle mastic with paint	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
		Mastic/Binder, Paint	None Detected ND	<b>None Detected ND</b>

**Sampled by:** Client  
**Analyzed by:** Nadezhda Prisyazhnyuk **Date:** 04/17/2015  
**Reviewed by:** Nick Ly **Date:** 04/17/2015 *for* Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii

Batch #: 1506664.00

Client Project #: 60340502.0500

Date Received: 4/13/2015

Samples Received: 38

Samples Analyzed: 38

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

Lab ID: 15037273 Client Sample #: DH001A-036B

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1 Description: Dark brown brittle mastic with paint

Non-Fibrous Materials:

Mastic/Binder, Paint

Other Fibrous Materials: %

None Detected ND

Asbestos Type: %

None Detected ND

Lab ID: 15037274 Client Sample #: DH001A-036C

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1 Description: Dark brown brittle mastic with paint

Non-Fibrous Materials:

Mastic/Binder, Paint

Other Fibrous Materials: %

None Detected ND

Asbestos Type: %

None Detected ND

Lab ID: 15037275 Client Sample #: DH001A-037A

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1 Description: Gray brittle material

Non-Fibrous Materials:

Binder/Filler, Mineral grains, Gravel

Other Fibrous Materials: %

None Detected ND

Asbestos Type: %

None Detected ND

Lab ID: 15037276 Client Sample #: DH001A-037B

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1 Description: Gray brittle material

Non-Fibrous Materials:

Binder/Filler, Mineral grains

Other Fibrous Materials: %

None Detected ND

Asbestos Type: %

None Detected ND

Lab ID: 15037277 Client Sample #: DH001A-037C

Location: DOD Demo, Honolulu, Hawaii

Sampled by: Client

Analyzed by: Nadezhda Prysyzhnyuk

Reviewed by: Nick Ly

Date: 04/17/2015

Date: 04/17/2015

  
Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii

**Batch #: 1506664.00**

Client Project #: 60340502.0500

Date Received: 4/13/2015

Samples Received: 38

Samples Analyzed: 38

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

<b>Layer 1 of 1</b>	<b>Description:</b> Gray brittle material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>Asbestos Type: %</b>
	Binder/Filler, Mineral grains	None Detected ND		<b>None Detected ND</b>

**Lab ID: 15037278 Client Sample #: DH001A-038A**

Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 1</b>	<b>Description:</b> Light gray brittle material with paint			
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>Asbestos Type: %</b>
	Fine particles, Binder/Filler, Mineral grains	None Detected ND		<b>None Detected ND</b>
	Paint			

**Lab ID: 15037279 Client Sample #: DH001A-038B**

Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 1</b>	<b>Description:</b> Light gray brittle material with paint			
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>Asbestos Type: %</b>
	Fine particles, Binder/Filler, Mineral grains	None Detected ND		<b>None Detected ND</b>
	Paint			


**Lab ID: 15037280 Client Sample #: DH001A-038C**

Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 2</b>	<b>Description:</b> White soft material with paint			
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>Asbestos Type: %</b>
	Calcareous particles, Binder/Filler, Paint	None Detected ND		<b>None Detected ND</b>

<b>Layer 2 of 2</b>	<b>Description:</b> Gray hard material with paint			
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>Asbestos Type: %</b>
	Fine particles, Binder/Filler, Paint	None Detected ND		<b>None Detected ND</b>

**Sampled by:** Client  
**Analyzed by:** Nadezhda Prysyzhnyuk  
**Reviewed by:** Nick Ly

**Date:** 04/17/2015  
**Date:** 04/17/2015  Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii

Batch #: 1506664.00

Client Project #: 60340502.0500

Date Received: 4/13/2015

Samples Received: 38

Samples Analyzed: 38

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

**Lab ID: 15037281      Client Sample #: DH001A-038D**

Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 2</b>	<b>Description:</b> White soft material with thin mastic and paint		
	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
	Binder/Filler, Mastic/Binder, Paint	Glass fibers 3%	<b>None Detected ND</b>
<b>Layer 2 of 2</b>	<b>Description:</b> Light gray hard brittle material with paint		
	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
	Fine particles, Binder/Filler, Mineral grains	None Detected ND	<b>None Detected ND</b>
	Paint		

**Lab ID: 15037282      Client Sample #: DH001A-038E**


Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 2</b>	<b>Description:</b> White soft material with paint		
	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
	Binder/Filler, Paint	Glass fibers 4%	<b>None Detected ND</b>
<b>Layer 2 of 2</b>	<b>Description:</b> Light gray hard brittle material with paint		
	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
	Fine particles, Binder/Filler, Mineral grains	None Detected ND	<b>None Detected ND</b>
	Paint		

**Lab ID: 15037283      Client Sample #: DH001A-038F**

Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 2</b>	<b>Description:</b> Beige skim coat material with paint		
	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
	Binder/Filler, Paint	Wollastonite 3%	<b>None Detected ND</b>

<b>Sampled by:</b> Client	
<b>Analyzed by:</b> Nadezhda Prsyazhnyuk	<b>Date:</b> 04/17/2015
<b>Reviewed by:</b> Nick Ly	<b>Date:</b> 04/17/2015  Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii

**Batch #: 1506664.00**

Client Project #: 60340502.0500

Date Received: 4/13/2015

Samples Received: 38

Samples Analyzed: 38

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

<b>Layer 2 of 2</b>	<b>Description:</b> Light gray brittle material with paint	<b>Non-Fibrous Materials:</b>	<b>Other Fibrous Materials:%</b>	<b>Asbestos Type: %</b>
		Fine particles, Binder/Filler, Mineral grains	None Detected ND	None Detected ND
		Paint		

**Lab ID: 15037284**      **Client Sample #: DH001A-038G**  
Location: DOD Demo, Honolulu, Hawaii


<b>Layer 1 of 2</b>	<b>Description:</b> Beige skim coat material with paint	<b>Non-Fibrous Materials:</b>	<b>Other Fibrous Materials:%</b>	<b>Asbestos Type: %</b>
		Binder/Filler, Paint	Wollastonite 4%	None Detected ND
<b>Layer 2 of 2</b>	<b>Description:</b> Light gray brittle material with paint	<b>Non-Fibrous Materials:</b>	<b>Other Fibrous Materials:%</b>	<b>Asbestos Type: %</b>
		Fine particles, Binder/Filler, Mineral grains	None Detected ND	None Detected ND
		Paint		

**Lab ID: 15037285**      **Client Sample #: DH001A-039A**  
Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 1</b>	<b>Description:</b> Black material with paint	<b>Non-Fibrous Materials:</b>	<b>Other Fibrous Materials:%</b>	<b>Asbestos Type: %</b>
		Binder/Filler, Glass beads, Paint	None Detected ND	None Detected ND

**Lab ID: 15037286**      **Client Sample #: DH001A-039B**  
Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 1</b>	<b>Description:</b> Black material with paint	<b>Non-Fibrous Materials:</b>	<b>Other Fibrous Materials:%</b>	<b>Asbestos Type: %</b>
		Binder/Filler, Glass beads, Paint	None Detected ND	None Detected ND

**Sampled by:** Client  
**Analyzed by:** Nadezhda Prsyazhnyuk      **Date:** 04/17/2015  
**Reviewed by:** Nick Ly      **Date:** 04/17/2015  Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii

**Batch #: 1506664.00**

Client Project #: 60340502.0500

Date Received: 4/13/2015

Samples Received: 38

Samples Analyzed: 38

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

**Lab ID: 15037287      Client Sample #: DH001A-039C**

Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 2</b>	<b>Description:</b> Black material with paint	Non-Fibrous Materials: Binder/Filler, Glass beads, Paint	Other Fibrous Materials:% None Detected    ND	<b>Asbestos Type: %</b> None Detected ND
<b>Layer 2 of 2</b>	<b>Description:</b> Light gray brittle material	Non-Fibrous Materials: Binder/Filler, Mineral grains	Other Fibrous Materials:% None Detected    ND	<b>Asbestos Type: %</b> None Detected ND

**Lab ID: 15037288      Client Sample #: DH001A-041A**

Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 2</b>	<b>Description:</b> Black asphaltic fibrous material with granules	Non-Fibrous Materials: Asphalt/Binder, Granules, Mineral grains	Other Fibrous Materials:% Glass fibers 35%	<b>Asbestos Type: %</b> None Detected ND
<b>Layer 2 of 2</b>	<b>Description:</b> Black asphaltic mastic	Non-Fibrous Materials: Asphalt/Binder, Mastic/Binder	Other Fibrous Materials:% None Detected    ND	<b>Asbestos Type: %</b> None Detected ND

**Lab ID: 15037289      Client Sample #: DH001A-041B**

Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 2</b>	<b>Description:</b> Layered black asphaltic fibrous material with granules	Non-Fibrous Materials: Asphalt/Binder, Granules, Mineral grains	Other Fibrous Materials:% Glass fibers 40%	<b>Asbestos Type: %</b> None Detected ND
<b>Layer 2 of 2</b>	<b>Description:</b> Black asphaltic mastic	Non-Fibrous Materials: Asphalt/Binder, Mastic/Binder	Other Fibrous Materials:% None Detected    ND	<b>Asbestos Type: %</b> None Detected ND

**Sampled by:** Client

**Analyzed by:** Nadezhda Prsyazhnyuk

**Reviewed by:** Nick Ly

**Date:** 04/17/2015

**Date:** 04/17/2015 *N Ly* Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii

Batch #: 1506664.00

Client Project #: 60340502.0500

Date Received: 4/13/2015

Samples Received: 38

Samples Analyzed: 38

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

**Lab ID: 15037290**      **Client Sample #: DH001A-041C**

Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 2</b>	<b>Description:</b> Layered black asphaltic fibrous material with granules			
	Non-Fibrous Materials:	Other Fibrous Materials: %		<b>Asbestos Type: %</b>
	Asphalt/Binder, Granules, Mineral grains	Glass fibers 34%		<b>None Detected ND</b>
<b>Layer 2 of 2</b>	<b>Description:</b> Black asphaltic mastic			
	Non-Fibrous Materials:	Other Fibrous Materials: %		<b>Asbestos Type: %</b>
	Asphalt/Binder, Mastic/Binder	None Detected ND		<b>None Detected ND</b>

**Lab ID: 15037291**      **Client Sample #: DH001A-042A**

Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 1</b>	<b>Description:</b> Light gray brittle material with paint			
	Non-Fibrous Materials:	Other Fibrous Materials: %		<b>Asbestos Type: %</b>
	Fine particles, Binder/Filler, Mineral grains	None Detected ND		<b>None Detected ND</b>
	Paint			

**Lab ID: 15037292**      **Client Sample #: DH001A-042B**

Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 1</b>	<b>Description:</b> Light gray brittle material with paint			
	Non-Fibrous Materials:	Other Fibrous Materials: %		<b>Asbestos Type: %</b>
	Fine particles, Binder/Filler, Mineral grains	None Detected ND		<b>None Detected ND</b>
	Paint			

**Lab ID: 15037293**      **Client Sample #: DH001A-042C**

Location: DOD Demo, Honolulu, Hawaii

<b>Sampled by:</b> Client		
<b>Analyzed by:</b> Nadezhda Prysazhnyuk	<b>Date:</b> 04/17/2015	
<b>Reviewed by:</b> Nick Ly	<b>Date:</b> 04/17/2015 <i>fox</i>	Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii

**Batch #: 1506664.00**

Client Project #: 60340502.0500

Date Received: 4/13/2015

Samples Received: 38

Samples Analyzed: 38

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

<b>Layer 1 of 1</b>	<b>Description:</b> Light gray brittle material with paint	<b>Non-Fibrous Materials:</b> Fine particles, Binder/Filler, Mineral grains Paint	<b>Other Fibrous Materials:%</b> None Detected ND	<b>Asbestos Type: %</b> None Detected ND
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**Lab ID: 15037294**      **Client Sample #: DH001A-042D**  
Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 2</b>	<b>Description:</b> White soft material with paint	<b>Non-Fibrous Materials:</b> Calcareous particles, Binder/Filler, Paint	<b>Other Fibrous Materials:%</b> None Detected ND	<b>Asbestos Type: %</b> None Detected ND
<b>Layer 2 of 2</b>	<b>Description:</b> White compacted powdery material with paint	<b>Non-Fibrous Materials:</b> Calcareous particles, Binder/Filler, Paint	<b>Other Fibrous Materials:%</b> None Detected ND	<b>Asbestos Type: %</b> None Detected ND

**Lab ID: 15037295**      **Client Sample #: DH001A-042E**  
Location: DOD Demo, Honolulu, Hawaii

<b>Layer 1 of 2</b>	<b>Description:</b> White soft material with paint	<b>Non-Fibrous Materials:</b> Calcareous particles, Binder/Filler, Paint	<b>Other Fibrous Materials:%</b> None Detected ND	<b>Asbestos Type: %</b> None Detected ND
<b>Layer 2 of 2</b>	<b>Description:</b> Light gray brittle material with paint	<b>Non-Fibrous Materials:</b> Fine particles, Binder/Filler, Mineral grains Paint	<b>Other Fibrous Materials:%</b> None Detected ND	<b>Asbestos Type: %</b> None Detected ND

**Lab ID: 15037296**      **Client Sample #: DH001A-043A**  
Location: DOD Demo, Honolulu, Hawaii

<b>Sampled by:</b> Client	
<b>Analyzed by:</b> Nadezhda Prsyazhnyuk	<b>Date:</b> 04/17/2015
<b>Reviewed by:</b> Nick Ly	<b>Date:</b> 04/17/2015  Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government





# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii

Batch #: 1506664.00

Client Project #: 60340502.0500

Date Received: 4/13/2015

Samples Received: 38

Samples Analyzed: 38

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

Layer 1 of 1	Description: White soft material with paint (on trace wood)			
	Non-Fibrous Materials:	Other Fibrous Materials:%	<b>Asbestos Type: %</b>	
	Calcareous particles, Binder/Filler, Paint	None Detected ND	<b>None Detected ND</b>	

Lab ID: 15037297 Client Sample #: DH001A-043B

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1	Description: White soft material with paint			
	Non-Fibrous Materials:	Other Fibrous Materials:%	<b>Asbestos Type: %</b>	
	Calcareous particles, Binder/Filler, Paint	None Detected ND	<b>None Detected ND</b>	

Lab ID: 15037298 Client Sample #: DH001A-043C

Location: DOD Demo, Honolulu, Hawaii

Layer 1 of 1	Description: White soft material with paint (on trace wood)			
	Non-Fibrous Materials:	Other Fibrous Materials:%	<b>Asbestos Type: %</b>	
	Calcareous particles, Binder/Filler, Paint	None Detected ND	<b>None Detected ND</b>	

Sampled by: Client

Analyzed by: Nadezhda Prysyzhnyuk

Reviewed by: Nick Ly

Date: 04/17/2015

Date: 04/17/2015  Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# ASBESTOS CHAIN OF CUSTODY

# 1506664

Turn Around Time

- 1 Hour       24 Hours       4 Days
- 2 Hours       2 Days       5 Days
- 4 Hours       3 Days       10 Days

Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company AECOM  
 Address 1001 Bishop Street, Suite 1600  
Honolulu, Hawaii 96813  
 Phone (808) 954-4536

Project Manager Fletcher Kimura  
 Cell ( 808 ) 542 - 3752  
 Email fletcher.kimura@aecom.com  
 Fax ( 808 ) 523 - 8950

Project Name/Number 60340502.0500 Project Location DOD Demo, Honolulu, Hawaii

- PCM Air (NIOSH 7400)       TEM (NIOSH 7402)       TEM (AHERA)       TEM (EPA Level II Modified)
- PLM (EPA 600/R-93-116)       EPA 400 Points (600/R-93-116)       EPA 1000Points (600/R-93-116)
- PLM Gravimetry (600/R-93-116)       Asbestos in Vermiculite (EPA 600/R-04/004)       Asbestos in Sediment (EPA 1900 Points)
- Asbestos Friable/Non-Friable (EPA 600/R-93/116)       Other PLEASE STOP ON FIRST POSITIVE

Reporting Instructions Report to Fletcher Kimura. Please cc teresa.quiniola@aecom.com  
 Call (      )       Fax (      )       Email fletcher.kimura@aecom.com

Total Number of Samples 128

	Sample ID	Description	A/R
1	DH001A-032A	White and green window caulk	
2	DH001A-032B	White and green window caulk	
3	DH001A-032C	White and green window caulk	
4	DH001A-033A	Dark salmon floor paint	
5	DH001A-033B	Dark salmon floor paint	
6	DH001A-033C	Dark salmon floor paint	
7	DH001A-033D	Dark salmon floor paint	
8	DH001A-033E	Dark salmon floor paint	
9	DH001A-035A	Concrete crack sealant	
10	DH001A-035B	Concrete crack sealant	
11	DH001A-035C	Concrete crack sealant	
12	DH001A-036A	Acoustic wall tile mastic (white on black)	
13	DH001A-036B	Acoustic wall tile mastic (white on black)	
14	DH001A-036C	Acoustic wall tile mastic (white on black)	
15	DH001A-037A	Main entry concrete patch	

	Print Name	Signature	Company	Date	Time
Sampled by	Teresa Quiniola		AECOM	9-Apr-15	13:40-15:15
Relinquish by	Fletcher Kimura		AECOM	10-Apr-15	12:30 pm

Office Use Only

	Print Name	Signature	Company	Date	Time
Received by			NVL	4/13/15	9:00 AM
Analyzed by	Nadine		NVL	4/17/15	2:45 PM
Called by					
Faxed/Email by					





# ASBESTOS CHAIN OF CUSTODY

# 1506664

Turn Around

- 1 Hour
- 2 Hours
- 4 Hours
- 24 Hours
- 2 Days
- 3 Days
- 4 Days
- 5 Days
- 10 Days

Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company AECOM  
 Address 1001 Bishop Street, Suite 1600  
Honolulu, Hawaii 96813  
 Phone (808) 954-4536

Project Manager Fletcher Kimura  
 Cell ( 808 ) 542 - 3752  
 Email fletcher.kimura@aecom.com  
 Fax ( 808 ) 523 - 8950

Project Name/Number 60340502.0500 Project Location DOD Demo, Honolulu, Hawaii

- PCM Air (NIOSH 7400)
- PLM (EPA 600/R-93-116)
- PLM Gravimetry (600/R-93-116)
- Asbestos Friable/Non-Friable (EPA 600/R-93/116)
- TEM (NIOSH 7402)
- EPA 400 Points (600/R-93-116)
- Asbestos in Vermiculite (EPA 600/R-04/004)
- Other PLEASE STOP ON FIRST POSITIVE
- TEM (AHERA)
- EPA 1000Points (600/R-93-116)
- Asbestos in Sediment (EPA 1900 Points)

Reporting Instructions Report to Fletcher Kimura. Please cc teresa.quiniola@aecom.com  
 Call ( ) -  Fax ( ) -  Email fletcher.kimura@aecom.com

**Total Number of Samples** 128

Sample ID	Description	A/R
1	DH001A-037B Main entry concrete patch	
2	DH001A-037C Main entry concrete patch	
3	DH001A-038A Exterior brick paint	
4	DH001A-038B Exterior brick paint	
5	DH001A-038C Exterior brick paint	
6	DH001A-038D Exterior brick paint	
7	DH001A-038E Exterior brick paint	
8	DH001A-038F Exterior brick paint	
9	DH001A-038G Exterior brick paint	
10	DH001A-039A Stair treads	
11	DH001A-039B Stair treads	
12	DH001A-039C Stair treads	
13	DH001A-041A Shed shingles with black mastic	
14	DH001A-041B Shed shingles with black mastic	
15	DH001A-041C Shed shingles with black mastic	

	Print Name	Signature	Company	Date	Time
Sampled by	Teresa Quiniola		AECOM	9-Apr-15	15:15-15:30
Relinquish by	Fletcher Kimura		AECOM	10-Apr-15	12:30 pm

**Office Use Only**

	Print Name	Signature	Company	Date	Time
Received by			NVL	4/13/15	9:00 AM
Analyzed by			NVL	4/17/15	2:45 PM
Called by					
Faxed/Email by					

# 1506664



## ASBESTOS CHAIN OF CUSTODY

### Turn Around Time

- 1 Hour       24 Hours       4 Days
- 2 Hours       2 Days       5 Days
- 4 Hours       3 Days       10 Days

Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company AECOM  
 Address 1001 Bishop Street, Suite 1600  
Honolulu, Hawaii 96813  
 Phone (808) 954-4536

Project Manager Fletcher Kimura  
 Cell ( 808 ) 542 - 3752  
 Email fletcher.kimura@aecom.com  
 Fax ( 808 ) 523 - 8950

Project Name/Number 60340502.0500 Project Location DOD Demo, Honolulu, Hawaii

- PCM Air (NIOSH 7400)       TEM (NIOSH 7402)       TEM (AHERA)       TEM (EPA Level II Modified)
- PLM (EPA 600/R-93-116)       EPA 400 Points (600/R-93-116)       EPA 1000Points (600/R-93-116)
- PLM Gravimetry (600/R-93-116)       Asbestos in Vermiculite (EPA 600/R-04/004)       Asbestos in Sediment (EPA 1900 Points)
- Asbestos Friable/Non-Friable (EPA 600/R-93/116)       Other PLEASE STOP ON FIRST POSITIVE

Reporting Instructions Report to Fletcher Kimura. Please cc teresa.quiniola@aecom.com  
 Call ( ) -       Fax ( ) -       Email fletcher.kimura@aecom.com

Total Number of Samples 128

Sample ID	Description	A/R
1	DH001A-042A	Tan paint
2	DH001A-042B	Tan paint
3	DH001A-042C	Tan paint
4	DH001A-042D	Tan paint
5	DH001A-042E	Tan paint
6	DH001A-043A	White caulk
7	DH001A-043B	White caulk
8	DH001A-043C	White caulk
9		
10		
11		
12		
13		
14		
15		

	Print Name	Signature	Company	Date	Time
Sampled by	Teresa Quiniola and Fletcher Kimura	<i>Teresa Quiniola</i>	AECOM	9-Apr-15, 7-Apr-15	1520, 10:52
Relinquish by	Fletcher Kimura	<i>Fletcher Kimura</i>	AECOM	10-Apr-15	12:30 pm

### Office Use Only

	Print Name	Signature	Company	Date	Time
Received by	<i>Max</i>	<i>[Signature]</i>	NVL	4/13/15	9:00 Fed Ex
Analyzed by	<i>Napoleo</i>	<i>[Signature]</i>	NVL	4/17/15	2:45 PM
Called by					
Faxed/Email by					





May 6, 2015

Fletcher Kimura  
**AECOM**  
1001 Bishop Street, Suite 1600  
Honolulu, HI 96813



Laboratory | Management | Training

**RE: Bulk Asbestos Fiber Analysis, NVL Batch # 1507814.00**

Dear Mr. Kimura,

Enclosed please find test results for the bulk samples submitted to our laboratory for analysis. Examination of these samples was conducted for the presence of identifiable asbestos fibers using polarized light microscopy (PLM) with dispersion staining in accordance with both U.S. EPA 600/M4-82-020, Interim Method for Determination of Asbestos in Bulk Insulation Samples, as found in 40 CFR, Part 763, Subpart E, Appendix E (formerly Subpart F, Appendix A), and U.S. EPA 600/R-93/116 (July 1993) Test Methods.

For samples containing more than one separable layer of materials, the report will include findings for each layer (labeled Layer 1 and Layer 2, etc. for each individual layer). The asbestos concentration in the sample is determined by visual estimation.

For those samples with asbestos concentrations between 1 and 10 percent based on visual estimation, the EPA recommends a procedure known as point counting (NESHAPS, 40 CFR Part 61). Point counting is a statistically more accurate means of quantification for samples with low concentrations of asbestos. If you would like us to further refine the concentration estimates of asbestos in these samples using point counting, please let me know.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. Please do not hesitate to call if there is anything further we can assist you with.

Sincerely,

A handwritten signature in black ink, appearing to read 'Nick Ly', is written over a white background.

Nick Ly, Technical Director



Lab Code: 102063-0

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600

Honolulu, HI 96813

**Batch #: 1507814.00**

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 15

Samples Analyzed: 15

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii.

**Lab ID: 15042986 Client Sample #: DH001A-034A**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1 Description: White/tan fibrous material

Non-Fibrous Materials:  
Binder/Filler, Fine particles

Other Fibrous Materials:%  
Cellulose 85%

**Asbestos Type: %  
None Detected ND**

**Lab ID: 15042987 Client Sample #: DH001A-034B**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1 Description: White/tan fibrous material

Non-Fibrous Materials:  
Binder/Filler, Fine particles

Other Fibrous Materials:%  
Cellulose 83%

**Asbestos Type: %  
None Detected ND**

**Lab ID: 15042988 Client Sample #: DH001A-034C**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1 Description: White/tan fibrous material

Non-Fibrous Materials:  
Binder/Filler, Fine particles

Other Fibrous Materials:%  
Cellulose 82%

**Asbestos Type: %  
None Detected ND**

**Lab ID: 15042989 Client Sample #: DH001A-040A**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1 Description: White soft material

Non-Fibrous Materials:  
Binder/Filler, Paint, Wood flakes

Other Fibrous Materials:%  
Cellulose 2%

**Asbestos Type: %  
None Detected ND**

**Lab ID: 15042990 Client Sample #: DH001A-040B**

Location: DOD Demo, Honolulu, Hawaii.

**Sampled by:** Client

**Analyzed by:** Jason J. Stuhr

**Reviewed by:** Nick Ly

**Date:** 05/06/2015

**Date:** 05/06/2015

Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii.

Batch #: 1507814.00

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 15

Samples Analyzed: 15

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

Layer 1 of 1	Description: Off-white soft material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Binder/Filler, Paint, Miscellaneous particles	None Detected	ND	None Detected ND

Lab ID: 15042991 Client Sample #: DH001A-040C

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1	Description: Off-white soft material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Binder/Filler, Paint, Miscellaneous particles	Cellulose	2%	None Detected ND
	Wood flakes			

Lab ID: 15042992 Client Sample #: DH001A-044A

Location: DOD Demo, Honolulu, Hawaii.

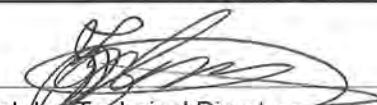
Layer 1 of 3	Description: Black asphaltic material with mineral grains			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Asphalt/Binder, Mineral grains	Glass fibers	2%	None Detected ND

Layer 2 of 3	Description: Black asphaltic fibrous built-up material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Asphalt/Binder	Glass fibers	70%	None Detected ND
		Cellulose	5%	

Layer 3 of 3	Description: Black asphaltic brittle material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Asphalt/Binder	Glass fibers	2%	None Detected ND

Lab ID: 15042993 Client Sample #: DH001A-044B

Location: DOD Demo, Honolulu, Hawaii.

<p>Sampled by: Client</p> <p>Analyzed by: Jason J. Stuhr</p> <p>Reviewed by: Nick Ly</p>	<p>Date: 05/06/2015</p> <p>Date: 05/06/2015</p>	 <p>Nick Ly, Technical Director</p>
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Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii.

Batch #: 1507814.00

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 15

Samples Analyzed: 15

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

<b>Layer 1 of 3</b>	<b>Description:</b> Black asphaltic material with mineral grains	Non-Fibrous Materials: Asphalt/Binder, Mineral grains	Other Fibrous Materials:% Glass fibers 3%	<b>Asbestos Type: % None Detected ND</b>
<b>Layer 2 of 3</b>	<b>Description:</b> Black asphaltic fibrous built-up material	Non-Fibrous Materials: Asphalt/Binder	Other Fibrous Materials:% Glass fibers 71% Cellulose 6%	<b>Asbestos Type: % None Detected ND</b>
<b>Layer 3 of 3</b>	<b>Description:</b> Black asphaltic brittle material	Non-Fibrous Materials: Asphalt/Binder	Other Fibrous Materials:% Glass fibers 3%	<b>Asbestos Type: % None Detected ND</b>

Lab ID: 15042994 Client Sample #: DH001A-044C

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 3</b>	<b>Description:</b> Black asphaltic material with mineral grains	Non-Fibrous Materials: Asphalt/Binder, Mineral grains	Other Fibrous Materials:% Glass fibers 2%	<b>Asbestos Type: % None Detected ND</b>
<b>Layer 2 of 3</b>	<b>Description:</b> Black asphaltic fibrous built-up material	Non-Fibrous Materials: Asphalt/Binder, Wood flakes	Other Fibrous Materials:% Glass fibers 71% Cellulose 7%	<b>Asbestos Type: % None Detected ND</b>
<b>Layer 3 of 3</b>	<b>Description:</b> Black asphaltic brittle material	Non-Fibrous Materials: Asphalt/Binder	Other Fibrous Materials:% Glass fibers 2%	<b>Asbestos Type: % None Detected ND</b>

Lab ID: 15042995 Client Sample #: DH001A-045A

Location: DOD Demo, Honolulu, Hawaii.

Sampled by: Client

Analyzed by: Jason J. Stuhr

Reviewed by: Nick Ly

Date: 05/06/2015

Date: 05/06/2015

Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii.

**Batch #: 1507814.00**

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 15

Samples Analyzed: 15


Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

<b>Layer 1 of 3</b>	<b>Description:</b> Black asphaltic material with mineral grains	Non-Fibrous Materials: Asphalt/Binder, Mineral grains	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 2 of 3</b>	<b>Description:</b> Black asphaltic fibrous material with granules	Non-Fibrous Materials: Asphalt/Binder, Granules	Other Fibrous Materials:% Glass fibers 60%	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 3 of 3</b>	<b>Description:</b> Black asphaltic material	Non-Fibrous Materials: Asphalt/Binder, Miscellaneous particles	Other Fibrous Materials:% Cellulose 6%	<b>Asbestos Type: %</b> <b>None Detected ND</b>

**Lab ID: 15042996**      **Client Sample #: DH001A-045B**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 5</b>	<b>Description:</b> Black asphaltic material with mineral grains	Non-Fibrous Materials: Asphalt/Binder, Mineral grains	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 2 of 5</b>	<b>Description:</b> Black asphaltic fibrous material with granules	Non-Fibrous Materials: Asphalt/Binder, Granules	Other Fibrous Materials:% Glass fibers 58%	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 3 of 5</b>	<b>Description:</b> Black asphaltic material	Non-Fibrous Materials: Asphalt/Binder, Miscellaneous particles	Other Fibrous Materials:% Cellulose 4%	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 4 of 5</b>	<b>Description:</b> Black asphaltic fibrous material	Non-Fibrous Materials: Asphalt/Binder	Other Fibrous Materials:% Glass fibers 62%	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 5 of 5</b>	<b>Description:</b> Black asphaltic material	Non-Fibrous Materials: Asphalt/Binder	Other Fibrous Materials:% Glass fibers 2%	<b>Asbestos Type: %</b> <b>None Detected ND</b>

<b>Sampled by:</b> Client	
<b>Analyzed by:</b> Jason J. Stuhr	<b>Date:</b> 05/06/2015
<b>Reviewed by:</b> Nick Ly	<b>Date:</b> 05/06/2015
	 Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii.

**Batch #: 1507814.00**

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 15

Samples Analyzed: 15

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

**Lab ID: 15042997      Client Sample #: DH001A-045C**


Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 5</b>	<b>Description:</b> Black asphaltic material with mineral grains	Non-Fibrous Materials: Asphalt/Binder, Mineral grains	Other Fibrous Materials:% None Detected    ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 2 of 5</b>	<b>Description:</b> Black asphaltic fibrous material with granules	Non-Fibrous Materials: Asphalt/Binder, Granules	Other Fibrous Materials:% Glass fibers    54%	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 3 of 5</b>	<b>Description:</b> Black asphaltic material	Non-Fibrous Materials: Asphalt/Binder, Miscellaneous particles	Other Fibrous Materials:% Cellulose      2%	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 4 of 5</b>	<b>Description:</b> Black asphaltic fibrous material	Non-Fibrous Materials: Asphalt/Binder	Other Fibrous Materials:% Glass fibers    58%	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 5 of 5</b>	<b>Description:</b> Black asphaltic material	Non-Fibrous Materials: Asphalt/Binder	Other Fibrous Materials:% Glass fibers    2% Cellulose      2%	<b>Asbestos Type: %</b> <b>None Detected ND</b>

**Lab ID: 15042998      Client Sample #: DH001A-046A**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 1</b>	<b>Description:</b> Black asphaltic material with fibrous elements	Non-Fibrous Materials: Asphalt/Binder, Mineral grains, Diatoms	Other Fibrous Materials:% Cellulose    18% Glass fibers    7%	<b>Asbestos Type: %</b> <b>None Detected ND</b>
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**Sampled by:** Client  
**Analyzed by:** Jason J. Stuhr      **Date:** 05/06/2015  
**Reviewed by:** Nick Ly              **Date:** 05/06/2015      Nick Ly, Technical Director 

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii.

Batch #: 1507814.00

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 15

Samples Analyzed: 15

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

Lab ID: 15042999 Client Sample #: DH001A-046B

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1 Description: Black asphaltic material with fibrous elements

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b> <b>None Detected ND</b>
Asphalt/Binder, Mineral grains, Diatoms	Cellulose 21%	
	Glass fibers 8%	

Lab ID: 15043000 Client Sample #: DH001A-046C

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1 Description: Black asphaltic material with fibrous elements

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b> <b>None Detected ND</b>
Asphalt/Binder, Mineral grains, Diatoms	Cellulose 20%	
	Glass fibers 9%	

Sampled by: Client

Analyzed by: Jason J. Stuhr

Reviewed by: Nick Ly

Date: 05/06/2015

Date: 05/06/2015

  
Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# 1507814



## ASBESTOS CHAIN OF CUSTODY

### Turn Around Time

- 1 Hour       24 Hours       4 Days
- 2 Hours       2 Days       5 Days
- 4 Hours       3 Days       10 Days

Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company AECOM  
 Address 1001 Bishop Street, Suite 1600  
Honolulu, Hawaii 96813  
 Phone (808) 954-4536

Project Manager Fletcher Kimura  
 Cell ( 808 ) 542 - 3752  
 Email fletcher.kimura@aecom.com  
 Fax ( 808 ) 523 - 8950

Project Name/Number 60340502.0500 Project Location DOD Demo, Honolulu, Hawaii

- PCM Air (NIOSH 7400)       TEM (NIOSH 7402)       TEM (AHERA)       TEM (EPA Level II Modified)
- PLM (EPA 600/R-93-116)       EPA 400 Points (600/R-93-116)       EPA 1000Points (600/R-93-116)
- PLM Gravimetry (600/R-93-116)       Asbestos in Vermiculite (EPA 600/R-04/004)       Asbestos in Sediment (EPA 1900 Points)
- Asbestos Friable/Non-Friable (EPA 600/R-93/116)       Other PLEASE STOP ON FIRST POSITIVE

Reporting Instructions Report to Fletcher Kimura. Please cc.teresa.quiniola@aecom.com  
 Call ( )       Fax ( )       Email fletcher.kimura@aecom.com

Total Number of Samples 15

Sample ID	Description	A/R
1	DH001A-034A	White acoustic ceiling tile
2	DH001A-034B	White acoustic ceiling tile
3	DH001A-034C	White acoustic ceiling tile
4	DH001A-040A	Flashing mastic
5	DH001A-040B	Flashing mastic
6	DH001A-040C	Flashing mastic
7	DH001A-044A	High roof field
8	DH001A-044B	High roof field
9	DH001A-044C	High roof field
10	DH001A-045A	Low roof field
11	DH001A-045B	Low roof field
12	DH001A-045C	Low roof field
13	DH001A-046A	Vent mastic
14	DH001A-046B	Vent mastic
15	DH001A-046C	Vent mastic

	Print Name	Signature	Company	Date	Time
Sampled by	Fletcher Kimura		AECOM	4/24/15	--
Relinquish by	Fletcher Kimura		AECOM	4/29/15	11:00 am

### Office Use Only

	Print Name	Signature	Company	Date	Time
Received by			NVL Labs	4/30/15	9:35 am FedEx
Analyzed by	Jason J. Stahr		NVL	5-6-15	14:49
Called by					
Faxed/Email by					

May 5, 2015

Fletcher Kimura  
**AECOM**  
1001 Bishop Street, Suite 1600  
Honolulu, HI 96813



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**RE: Bulk Asbestos Fiber Analysis, NVL Batch # 1507790.00**

Dear Mr. Kimura,

Enclosed please find test results for the bulk samples submitted to our laboratory for analysis. Examination of these samples was conducted for the presence of identifiable asbestos fibers using polarized light microscopy (PLM) with dispersion staining in accordance with both U.S. EPA 600/M4-82-020, Interim Method for Determination of Asbestos in Bulk Insulation Samples, as found in 40 CFR, Part 763, Subpart E, Appendix E (formerly Subpart F, Appendix A), and U.S. EPA 600/R-93/116 (July 1993) Test Methods.

For samples containing more than one separable layer of materials, the report will include findings for each layer (labeled Layer 1 and Layer 2, etc. for each individual layer). The asbestos concentration in the sample is determined by visual estimation.

For those samples with asbestos concentrations between 1 and 10 percent based on visual estimation, the EPA recommends a procedure known as point counting (NESHAPS, 40 CFR Part 61). Point counting is a statistically more accurate means of quantification for samples with low concentrations of asbestos. If you would like us to further refine the concentration estimates of asbestos in these samples using point counting, please let me know.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. Please do not hesitate to call if there is anything further we can assist you with.

Sincerely,

A handwritten signature in black ink, appearing to read "Nick Ly", written over a white oval background.

Nick Ly, Technical Director



Lab Code: 102063-0

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii.

Batch #: 1507790.00

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 31

Samples Analyzed: 29

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

**Lab ID: 15042623**      **Client Sample #: DH002A-001A**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Light gray flaky material

Non-Fibrous Materials:  
Paint/Binder, Fine particles

Other Fibrous Materials:%  
None Detected    ND

**Asbestos Type: %**  
**None Detected ND**

**Lab ID: 15042624**      **Client Sample #: DH002A-001B**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: White/green flaky material

Non-Fibrous Materials:  
Paint/Binder, Fine particles

Other Fibrous Materials:%  
Cellulose    2%

**Asbestos Type: %**  
**None Detected ND**

**Lab ID: 15042625**      **Client Sample #: DH002A-001C**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Pale green/tan flaky material

Non-Fibrous Materials:  
Paint/Binder, Fine particles

Other Fibrous Materials:%  
None Detected    ND

**Asbestos Type: %**  
**None Detected ND**

**Lab ID: 15042626**      **Client Sample #: DH002A-001D**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Gray/white flaky material

Non-Fibrous Materials:  
Paint/Binder, Fine particles

Other Fibrous Materials:%  
Cellulose    2%

**Asbestos Type: %**  
**None Detected ND**

**Lab ID: 15042627**      **Client Sample #: DH002A-001E**

Location: DOD Demo, Honolulu, Hawaii.

**Sampled by:** Client

**Analyzed by:** Jason J. Stuhr

**Reviewed by:** Nick Ly

**Date:** 05/05/2015

**Date:** 05/05/2015

  
Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii.

**Batch #: 1507790.00**

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 31

Samples Analyzed: 29

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

<b>Layer 1 of 1</b>	<b>Description:</b> Green/white flaky material			
	Non-Fibrous Materials:	Other Fibrous Materials: %		<b>Asbestos Type: %</b>
	Paint/Binder, Fine particles	Cellulose 2%		<b>None Detected ND</b>

**Lab ID: 15042628**      **Client Sample #: DH002A-001F**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 1</b>	<b>Description:</b> Gray flaky material			
	Non-Fibrous Materials:	Other Fibrous Materials: %		<b>Asbestos Type: %</b>
	Paint/Binder, Fine particles	Cellulose 2%		<b>None Detected ND</b>

**Lab ID: 15042629**      **Client Sample #: DH002A-001G**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 1</b>	<b>Description:</b> Gray/white flaky material			
	Non-Fibrous Materials:	Other Fibrous Materials: %		<b>Asbestos Type: %</b>
	Paint/Binder, Fine particles	None Detected ND		<b>None Detected ND</b>

**Lab ID: 15042630**      **Client Sample #: DH002A-002A**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 1</b>	<b>Description:</b> Off-white brittle material			
	Non-Fibrous Materials:	Other Fibrous Materials: %		<b>Asbestos Type: %</b>
	Binder/Filler, Miscellaneous particles	Cellulose 4%		<b>None Detected ND</b>

**Lab ID: 15042631**      **Client Sample #: DH002A-002B**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 1</b>	<b>Description:</b> Off-white brittle material			
	Non-Fibrous Materials:	Other Fibrous Materials: %		<b>Asbestos Type: %</b>
	Binder/Filler, Miscellaneous particles	Cellulose 5%		<b>None Detected ND</b>

**Sampled by:** Client

**Analyzed by:** Jason J. Stuhr

**Reviewed by:** Nick Ly

**Date:** 05/05/2015

**Date:** 05/05/2015

  
Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii.

Batch #: 1507790.00

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 31

Samples Analyzed: 29

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

**Lab ID: 15042632      Client Sample #: DH002A-002C**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Off-white brittle material

Non-Fibrous Materials:  
Binder/Filler, Miscellaneous particles

Other Fibrous Materials:%  
Cellulose 4%

**Asbestos Type: %**  
**None Detected ND**

**Lab ID: 15042633      Client Sample #: DH002A-003A**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 2      Description: White/green thin brittle material

Non-Fibrous Materials:  
Paint/Binder, Fine particles

Other Fibrous Materials:%  
None Detected ND

**Asbestos Type: %**  
**None Detected ND**

Layer 2 of 2      Description: Light gray soft material with fibrous elements

Non-Fibrous Materials:  
Putty Compound, Miscellaneous particles

Other Fibrous Materials:%  
None Detected ND

**Asbestos Type: %**  
**Chrysotile 3%**

**Lab ID: 15042634      Client Sample #: DH002A-003B**

**Sample Status: Not Analyzed**

**Lab ID: 15042635      Client Sample #: DH002A-003C**

**Sample Status: Not Analyzed**

**Lab ID: 15042636      Client Sample #: DH002A-004A**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: White soft material

Non-Fibrous Materials:  
Synthetic/Binder, Miscellaneous particles

Other Fibrous Materials:%  
None Detected ND

**Asbestos Type: %**  
**None Detected ND**

**Sampled by:** Client

**Analyzed by:** Jason J. Stuhr

**Reviewed by:** Nick Ly

**Date:** 05/05/2015

**Date:** 05/05/2015

Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii.

Batch #: 1507790.00

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 31

Samples Analyzed: 29

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

**Lab ID: 15042637**      **Client Sample #: DH002A-004B**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: White soft material

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
Synthetic/Binder, Miscellaneous particles	None Detected    ND	<b>None Detected ND</b>

**Lab ID: 15042638**      **Client Sample #: DH002A-004C**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: White soft material

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
Synthetic/Binder, Miscellaneous particles	Cellulose    2%	<b>None Detected ND</b>

**Lab ID: 15042639**      **Client Sample #: DH002A-005A**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Dark brown/tan brittle material

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
Mastic/Binder, Fine particles	None Detected    ND	<b>None Detected ND</b>

**Lab ID: 15042640**      **Client Sample #: DH002A-005B**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Dark brown/tan brittle material

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
Mastic/Binder, Fine particles, Metal	Cellulose    2%	<b>None Detected ND</b>

**Lab ID: 15042641**      **Client Sample #: DH002A-005C**

Location: DOD Demo, Honolulu, Hawaii.

**Sampled by:** Client

**Analyzed by:** Jason J. Stuhr

**Reviewed by:** Nick Ly

**Date:** 05/05/2015

**Date:** 05/05/2015

Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii.

**Batch #: 1507790.00**

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 31

Samples Analyzed: 29

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

<b>Layer 1 of 1</b>	Description: Dark brown/tan brittle material		<b>Asbestos Type: %</b>
	Non-Fibrous Materials:	Other Fibrous Materials: %	
	Mastic/Binder, Fine particles, Metal	Cellulose 2%	<b>None Detected ND</b>

**Lab ID: 15042642 Client Sample #: DH002A-006A**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 2</b>	Description: White compacted powdery material with paint		<b>Asbestos Type: %</b>
	Non-Fibrous Materials:	Other Fibrous Materials: %	
	Calcareous particles, Binder/Filler, Paint	Cellulose 2%	<b>None Detected ND</b>

<b>Layer 2 of 2</b>	Description: White chalky material with paper		<b>Asbestos Type: %</b>
	Non-Fibrous Materials:	Other Fibrous Materials: %	
	Gypsum/Binder	Cellulose 18%	<b>None Detected ND</b>
		Glass fibers 5%	

**Lab ID: 15042643 Client Sample #: DH002A-006B**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 2</b>	Description: White compacted powdery material with paint		<b>Asbestos Type: %</b>
	Non-Fibrous Materials:	Other Fibrous Materials: %	
	Calcareous particles, Binder/Filler, Paint	Cellulose 3%	<b>None Detected ND</b>

<b>Layer 2 of 2</b>	Description: White chalky material with paper		<b>Asbestos Type: %</b>
	Non-Fibrous Materials:	Other Fibrous Materials: %	
	Gypsum/Binder, Fine particles	Cellulose 23%	<b>None Detected ND</b>
		Glass fibers 2%	

**Lab ID: 15042644 Client Sample #: DH002A-006C**

Location: DOD Demo, Honolulu, Hawaii.

**Sampled by:** Client

**Analyzed by:** Jason J. Stuhr

**Reviewed by:** Nick Ly

**Date:** 05/05/2015

**Date:** 05/05/2015



Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii.

**Batch #: 1507790.00**

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 31

Samples Analyzed: 29

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

<b>Layer 1 of 2</b>	<b>Description:</b> White compacted powdery material with paint	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
	Calcareous particles, Binder/Filler, Paint		Cellulose 2%	<b>None Detected ND</b>
<b>Layer 2 of 2</b>	<b>Description:</b> White chalky material with paper	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
	Gypsum/Binder, Fine particles		Cellulose 20%	<b>None Detected ND</b>
			Glass fibers 3%	

**Lab ID: 15042645 Client Sample #: DH002A-007A**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 2</b>	<b>Description:</b> Tan with dark brown streaks vinyl	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
	Vinyl/Binder, Quartz		Cellulose 2%	<b>None Detected ND</b>
<b>Layer 2 of 2</b>	<b>Description:</b> Black asphaltic mastic	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
	Mastic/Binder, Miscellaneous particles		None Detected ND	<b>Chrysotile 3%</b>

**Lab ID: 15042646 Client Sample #: DH002A-007B**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 2</b>	<b>Description:</b> Tan with dark brown streaks vinyl	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
	Vinyl/Binder, Quartz		Cellulose 3%	<b>None Detected ND</b>
<b>Layer 2 of 2</b>	<b>Description:</b> Black asphaltic mastic	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
	Mastic/Binder, Miscellaneous particles		None Detected ND	<b>Chrysotile 2%</b>

**Lab ID: 15042647 Client Sample #: DH002A-007C**

Location: DOD Demo, Honolulu, Hawaii.

<b>Sampled by:</b> Client		
<b>Analyzed by:</b> Jason J. Stuhr	<b>Date:</b> 05/05/2015	
<b>Reviewed by:</b> Nick Ly	<b>Date:</b> 05/05/2015	Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii.

**Batch #: 1507790.00**

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 31

Samples Analyzed: 29

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

<b>Layer 1 of 2</b>	<b>Description:</b> Tan with dark brown streaks vinyl	Non-Fibrous Materials: Vinyl/Binder, Quartz	Other Fibrous Materials:% Cellulose 2%	<b>Asbestos Type: %</b> <b>None Detected ND</b>
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<b>Layer 2 of 2</b>	<b>Description:</b> Black asphaltic mastic	Non-Fibrous Materials: Mastic/Binder, Miscellaneous particles	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>Chrysotile 2%</b>
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**Lab ID: 15042648      Client Sample #: DH002A-008A**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 2</b>	<b>Description:</b> Brown rubbery material	Non-Fibrous Materials: Rubber/Binder, Fine grains, Paint	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
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<b>Layer 2 of 2</b>	<b>Description:</b> Brown brittle mastic	Non-Fibrous Materials: Mastic/Binder, Fine particles	Other Fibrous Materials:% Talc fibers 2% Cellulose 2%	<b>Asbestos Type: %</b> <b>None Detected ND</b>
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**Lab ID: 15042649      Client Sample #: DH002A-008B**

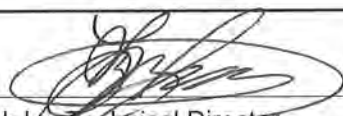
Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 2</b>	<b>Description:</b> Brown rubbery material	Non-Fibrous Materials: Rubber/Binder, Fine grains	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
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<b>Layer 2 of 2</b>	<b>Description:</b> Brown brittle mastic	Non-Fibrous Materials: Mastic/Binder, Fine particles	Other Fibrous Materials:% Talc fibers 2%	<b>Asbestos Type: %</b> <b>None Detected ND</b>
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**Lab ID: 15042650      Client Sample #: DH002A-008C**

Location: DOD Demo, Honolulu, Hawaii.

<b>Sampled by:</b> Client		
<b>Analyzed by:</b> Jason J. Stuhr	<b>Date:</b> 05/05/2015	 Nick Ly, Technical Director
<b>Reviewed by:</b> Nick Ly	<b>Date:</b> 05/05/2015	

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii.

**Batch #: 1507790.00**

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 31

Samples Analyzed: 29

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

<b>Layer 1 of 2</b>	<b>Description:</b> Brown rubbery material	Non-Fibrous Materials: Rubber/Binder, Fine grains	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
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<b>Layer 2 of 2</b>	<b>Description:</b> Brown brittle mastic	Non-Fibrous Materials: Mastic/Binder, Fine particles	Other Fibrous Materials:% Talc fibers 3%	<b>Asbestos Type: %</b> <b>None Detected ND</b>
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**Lab ID: 15042651      Client Sample #: DH002A-009A**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 1</b>	<b>Description:</b> Light gray compressed fibrous material with paint	Non-Fibrous Materials: Binder/Filler, Foamed glass, Paint Miscellaneous particles	Other Fibrous Materials:% Cellulose 40% Glass fibers 35%	<b>Asbestos Type: %</b> <b>None Detected ND</b>
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**Lab ID: 15042652      Client Sample #: DH002A-009B**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 1</b>	<b>Description:</b> Light gray compressed fibrous material with paint	Non-Fibrous Materials: Binder/Filler, Foamed glass, Paint Miscellaneous particles	Other Fibrous Materials:% Cellulose 42% Glass fibers 34%	<b>Asbestos Type: %</b> <b>None Detected ND</b>
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**Lab ID: 15042653      Client Sample #: DH002A-009C**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 1</b>	<b>Description:</b> Light gray compressed fibrous material with paint	Non-Fibrous Materials: Binder/Filler, Foamed glass, Paint Miscellaneous particles	Other Fibrous Materials:% Cellulose 41% Glass fibers 35%	<b>Asbestos Type: %</b> <b>None Detected ND</b>
---------------------	---	---	--	--

**Sampled by:** Client

**Analyzed by:** Jason J. Stuhr

**Reviewed by:** Nick Ly

**Date:** 05/05/2015

**Date:** 05/05/2015

  
Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# ASBESTOS CHAIN OF CUSTODY

# 1507790

Turn Around Time

- 1 Hour       24 Hours       4 Days
- 2 Hours       2 Days       5 Days
- 4 Hours       3 Days       10 Days

Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company AECOM  
 Address 1001 Bishop Street, Suite 1600  
Honolulu, Hawaii 96813  
 Phone (808) 954-4536

Project Manager Fletcher Kimura  
 Cell ( 808 ) 542 - 3752  
 Email fletcher.kimura@aecom.com  
 Fax ( 808 ) 523 - 8950

Project Name/Number 60340502.0500 Project Location DOD Demo, Honolulu, Hawaii

- PCM Air (NIOSH 7400)       TEM (NIOSH 7402)       TEM (AHERA)       TEM (EPA Level II Modified)
- PLM (EPA 600/R-93-116)       EPA 400 Points (600/R-93-116)       EPA 1000Points (600/R-93-116)
- PLM Gravimetry (600/R-93-116)       Asbestos in Vermiculite (EPA 600/R-04/004)       Asbestos in Sediment (EPA 1900 Points)
- Asbestos Friable/Non-Friable (EPA 600/R-93/116)       Other PLEASE STOP ON FIRST POSITIVE

Reporting Instructions Report to Fletcher Kimura. Please cc teresa.quiniola@aecom.com  
 Call ( )       Fax ( )       Email fletcher.kimura@aecom.com

Total Number of Samples 260

Sample ID	Description	A/R
1	DH002A-001A White brick and concrete paint	
2	DH002A-001B White brick and concrete paint	
3	DH002A-001C White brick and concrete paint	
4	DH002A-001D White brick and concrete paint	
5	DH002A-001E White brick and concrete paint	
6	DH002A-001F White brick and concrete paint	
7	DH002A-001G White brick and concrete paint	
8	DH002A-002A Plaster concrete crack filler	
9	DH002A-002B Plaster concrete crack filler	
10	DH002A-002C Plaster concrete crack filler	
11	DH002A-003A Interior window and door frame caulk	
12	DH002A-003B Interior window and door frame caulk	
13	DH002A-003C Interior window and door frame caulk	
14	DH002A-004A Silicone crack filler	
15	DH002A-004B Silicone crack filler	

	Print Name	Signature	Company	Date	Time
Sampled by	Fletcher Kimura and Ryan Shinmoto	<i>[Signature]</i>	AECOM	4/15, 4/16/15	--
Relinquish by	Fletcher Kimura	<i>[Signature]</i>	AECOM	4/29/15	11:00 am

Office Use Only

	Print Name	Signature	Company	Date	Time
Received by	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	4/30/15	9:15am Fedex
Analyzed by	Jason J. Stovall	<i>[Signature]</i>	NVL	5-5-15	15:32
Called by					
Faxed/Email by					



# ASBESTOS CHAIN OF CUSTODY

# 1507790

Turn Around T

- 1 Hour       24 Hours       4 Days
- 2 Hours       2 Days       5 Days
- 4 Hours       3 Days       10 Days

Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company AECOM Project Manager Fletcher Kimura  
 Address 1001 Bishop Street, Suite 1600 Cell ( 808 ) 542 - 3752  
Honolulu, Hawaii 96813 Email fletcher.kimura@aecom.com  
 Phone (808) 954-4536 Fax ( 808 ) 523 - 8950

Project Name/Number 60340502.0500 Project Location DOD Demo, Honolulu, Hawaii

- PCM Air (NIOSH 7400)       TEM (NIOSH 7402)       TEM (AHERA)       TEM (EPA Level II Modified)
- PLM (EPA 600/R-93-116)       EPA 400 Points (600/R-93-116)       EPA 1000Points (600/R-93-116)
- PLM Gravimetry (600/R-93-116)       Asbestos in Vermiculite (EPA 600/R-04/004)       Asbestos in Sediment (EPA 1900 Points)
- Asbestos Friable/Non-Friable (EPA 600/R-93/116)       Other PLEASE STOP ON FIRST POSITIVE

Reporting Instructions Report to Fletcher Kimura. Please cc.teresa.quiniola@aecom.com  
 Call ( )       Fax ( )       Email fletcher.kimura@aecom.com

Total Number of Samples 260

Sample ID	Description	A/R
1	DH002A-009C Type A 2'x4' acoustic ceiling tile	
2	DH002A-010A Type B 2'x4' acoustic ceiling tile	
3	DH002A-010B Type B 2'x4' acoustic ceiling tile	
4	DH002A-010C Type B 2'x4' acoustic ceiling tile	
5	DH002A-012A 9"x9" dark brown VFT and mastic	
6	DH002A-012B 9"x9" dark brown VFT and mastic	
7	DH002A-012C 9"x9" dark brown VFT and mastic	
8	DH002A-013A Type C 1'x1' acoustic ceiling tile and mastic	
9	DH002A-013B Type C 1'x1' acoustic ceiling tile and mastic	
10	DH002A-013C Type C 1'x1' acoustic ceiling tile and mastic	
11	DH002A-014A Interior window caulk	
12	DH002A-014B Interior window caulk	
13	DH002A-014C Interior window caulk	
14	DH002A-015A Textured cement	
15	DH002A-015B Textured cement	

	Print Name	Signature	Company	Date	Time
Sampled by	Fletcher Kimura and Ryan Shinmoto	<i>[Signature]</i>	AECOM	4/15, 4/21/15	--
Relinquish by	Fletcher Kimura	<i>[Signature]</i>	AECOM	4/29/15	11:00 am

Office Use Only

	Print Name	Signature	Company	Date	Time
Received by	<i>[Signature]</i>	<i>[Signature]</i>	Nuvlabs	4/30/15	9:15am
Analyzed by	J. Stahr	<i>[Signature]</i>	Nuvlabs	5-5-15	15:32
Called by					
Faxed/Email by					





May 6, 2015

Fletcher Kimura  
**AECOM**  
1001 Bishop Street, Suite 1600  
Honolulu, HI 96813



Laboratory | Management | Training

**RE: Bulk Asbestos Fiber Analysis, NVL Batch # 1507791.00**

Dear Mr. Kimura,

Enclosed please find test results for the bulk samples submitted to our laboratory for analysis. Examination of these samples was conducted for the presence of identifiable asbestos fibers using polarized light microscopy (PLM) with dispersion staining in accordance with both U.S. EPA 600/M4-82-020, Interim Method for Determination of Asbestos in Bulk Insulation Samples, as found in 40 CFR, Part 763, Subpart E, Appendix E (formerly Subpart F, Appendix A), and U.S. EPA 600/R-93/116 (July 1993) Test Methods.

For samples containing more than one separable layer of materials, the report will include findings for each layer (labeled Layer 1 and Layer 2, etc. for each individual layer). The asbestos concentration in the sample is determined by visual estimation.

For those samples with asbestos concentrations between 1 and 10 percent based on visual estimation, the EPA recommends a procedure known as point counting (NESHAPS, 40 CFR Part 61). Point counting is a statistically more accurate means of quantification for samples with low concentrations of asbestos. If you would like us to further refine the concentration estimates of asbestos in these samples using point counting, please let me know.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. Please do not hesitate to call if there is anything further we can assist you with.

Sincerely,

A handwritten signature in black ink, appearing to read 'Nick Ly', is written over a faint, larger version of the signature.

*N* Nick Ly, Technical Director



Lab Code: 102063-0

1.888.NVL.LABS  
1.888.(605.5227)  
www.nvllabs.com

Enc.: Sample Results

NVL Laboratories, Inc.

4708 Aurora Ave N, Seattle, WA 98103

p 206.547.0100 | f 206.634.1936

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii.

Batch #: 1507791.00

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 29

Samples Analyzed: 24

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

Lab ID: 15042654 Client Sample #: DH002A-010A

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1 Description: Gray fibrous material with paint

Non-Fibrous Materials:  
Paint, Perlite, Binder/Filler

Other Fibrous Materials:%  
Cellulose 30%  
Glass fibers 20%

Asbestos Type: %  
None Detected ND

Lab ID: 15042655 Client Sample #: DH002A-010B

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1 Description: Gray fibrous material with paint

Non-Fibrous Materials:  
Paint, Perlite, Binder/Filler

Other Fibrous Materials:%  
Cellulose 35%  
Glass fibers 17%

Asbestos Type: %  
None Detected ND

Lab ID: 15042656 Client Sample #: DH002A-010C

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1 Description: Gray fibrous material with paint

Non-Fibrous Materials:  
Paint, Perlite, Binder/Filler

Other Fibrous Materials:%  
Cellulose 36%  
Glass fibers 17%

Asbestos Type: %  
None Detected ND

Lab ID: 15042657 Client Sample #: DH002A-012A

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 2 Description: Brown vinyl tile

Non-Fibrous Materials:  
Vinyl/Binder, Binder/Filler

Other Fibrous Materials:%  
None Detected ND


Asbestos Type: %  
Chrysotile 2%

Sampled by: Client

Analyzed by: Dhafar Mohammedi

Reviewed by: Nick Ly

Date: 05/06/2015

Date: 05/06/2015  Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii.

Batch #: 1507791.00

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 29

Samples Analyzed: 24

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

Layer 2 of 2	Description: Black asphaltic mastic	Non-Fibrous Materials: Asphalt/Binder, Binder/Filler	Other Fibrous Materials:% Cellulose 2%	Asbestos Type: % Chrysotile 2%
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Lab ID: 15042658	Client Sample #: DH002A-012B	Sample Status:	Not Analyzed
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Lab ID: 15042659	Client Sample #: DH002A-012C	Sample Status:	Not Analyzed
------------------	------------------------------	----------------	--------------

Lab ID: 15042660	Client Sample #: DH002A-013A
------------------	------------------------------

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 2	Description: Gray fibrous material with paint	Non-Fibrous Materials: Paint, Perlite, Binder/Filler	Other Fibrous Materials:% Cellulose 35% Glass fibers 18%	Asbestos Type: % None Detected ND
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Layer 2 of 2	Description: Brown brittle mastic with paint and trace tan fibrous material	Non-Fibrous Materials: Mastic/Binder, Paint, Binder/Filler	Other Fibrous Materials:% Cellulose 3%	Asbestos Type: % None Detected ND
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Lab ID: 15042661	Client Sample #: DH002A-013B
------------------	------------------------------

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 2	Description: Gray fibrous material with paint	Non-Fibrous Materials: Paint, Perlite, Binder/Filler	Other Fibrous Materials:% Cellulose 36% Glass fibers 18%	Asbestos Type: % None Detected ND
--------------	---	---	--	--------------------------------------

Sampled by: Client

Analyzed by: Dhafar Mohammedi

Reviewed by: Nick Ly

Date: 05/06/2015

Date: 05/06/2015  Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii.

**Batch #: 1507791.00**

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 29

Samples Analyzed: 24

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

<b>Layer 2 of 2</b>	<b>Description:</b> Brown brittle mastic			
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>Asbestos Type: %</b>
	Mastic/Binder, Binder/Filler	Cellulose 2%		<b>None Detected ND</b>

**Lab ID: 15042662**      **Client Sample #: DH002A-013C**  
Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 2</b>	<b>Description:</b> Tan compressed fibrous material with paint			
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>Asbestos Type: %</b>
	Binder/Filler, Paint	Cellulose 83%		<b>None Detected ND</b>

<b>Layer 2 of 2</b>	<b>Description:</b> Brown brittle mastic			
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>Asbestos Type: %</b>
	Binder/Filler, Mastic/Binder	Cellulose 4%		<b>None Detected ND</b>

**Lab ID: 15042663**      **Client Sample #: DH002A-014A**  
Location: DOD Demo, Honolulu, Hawaii.


<b>Layer 1 of 1</b>	<b>Description:</b> Gray brittle material with paint			
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>Asbestos Type: %</b>
	Binder/Filler, Caulking compound, Paint	None Detected ND		<b>Chrysotile &lt;1%</b>

**Lab ID: 15042664**      **Client Sample #: DH002A-014B**  
Location: DOD Demo, Honolulu, Hawaii.

Comments: Small sample size

<b>Layer 1 of 1</b>	<b>Description:</b> Gray brittle material with paint			
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>Asbestos Type: %</b>
	Binder/Filler, Caulking compound, Paint	None Detected ND		<b>Chrysotile 2%</b>

**Lab ID: 15042665**      **Client Sample #: DH002A-014C**      **Sample Status: Not Analyzed**

<b>Sampled by:</b> Client	
<b>Analyzed by:</b> Dhafar Mohammedi	<b>Date:</b> 05/06/2015
<b>Reviewed by:</b> Nick Ly	<b>Date:</b> 05/06/2015  Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Batch #: 1507791.00**

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 29

Samples Analyzed: 24

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii.

**Lab ID: 15042666      Client Sample #: DH002A-015A**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Trace gray brittle material with paint

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
Binder/Filler, Paint	None Detected    ND	

**None Detected ND**

**Lab ID: 15042667      Client Sample #: DH002A-015B**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Trace gray brittle material with paint

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
Binder/Filler, Paint	None Detected    ND	

**None Detected ND**

**Lab ID: 15042668      Client Sample #: DH002A-015C**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Trace gray brittle material with paint

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
Binder/Filler, Paint	None Detected    ND	

**None Detected ND**

**Lab ID: 15042669      Client Sample #: DH002A-016A**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Gray/tan sandy/brittle material

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
Sand, Binder/Filler	None Detected    ND	

**None Detected ND**

**Lab ID: 15042670      Client Sample #: DH002A-016B**

Location: DOD Demo, Honolulu, Hawaii.

<b>Sampled by:</b> Client	 <hr/> Nick Ly, Technical Director
<b>Analyzed by:</b> Dhafar Mohammedi	
<b>Reviewed by:</b> Nick Ly	

**Date:** 05/06/2015

**Date:** 05/06/2015

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii.

Batch #: 1507791.00

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 29

Samples Analyzed: 24

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

Layer 1 of 1	Description: Gray sandy/brittle material	Non-Fibrous Materials: Sand, Binder/Filler	Other Fibrous Materials:% Cellulose 2%	Asbestos Type: % None Detected ND
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Lab ID: 15042671 Client Sample #: DH002A-016C

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1	Description: Gray sandy/brittle material with tan surface	Non-Fibrous Materials: Sand, Binder/Filler	Other Fibrous Materials:% Cellulose <1%	Asbestos Type: % None Detected ND
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Lab ID: 15042672 Client Sample #: DH002A-016D

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1	Description: Gray sandy/brittle material with tan surface	Non-Fibrous Materials: Sand, Binder/Filler	Other Fibrous Materials:% Cellulose <1%	Asbestos Type: % None Detected ND
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Lab ID: 15042673 Client Sample #: DH002A-016E

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1	Description: Gray sandy/brittle material with tan surface	Non-Fibrous Materials: Sand, Binder/Filler	Other Fibrous Materials:% None Detected ND	Asbestos Type: % None Detected ND
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Lab ID: 15042674 Client Sample #: DH002A-017A

Location: DOD Demo, Honolulu, Hawaii.


Layer 1 of 1	Description: Yellow fibrous material	Non-Fibrous Materials: Binder/Filler	Other Fibrous Materials:% Glass fibers 95%	Asbestos Type: % None Detected ND
--------------	--------------------------------------	---	---	--------------------------------------

Sampled by: Client

Analyzed by: Dhafar Mohammedi

Reviewed by: Nick Ly

Date: 05/06/2015

Date: 05/06/2015  Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii.

Batch #: 1507791.00

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 29

Samples Analyzed: 24

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

Lab ID: 15042675 Client Sample #: DH002A-017B

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1 Description: Yellow fibrous material

Non-Fibrous Materials:  
Binder/Filler

Other Fibrous Materials:%  
Glass fibers 97%

Asbestos Type: %  
None Detected ND

Lab ID: 15042676 Client Sample #: DH002A-017C

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1 Description: Yellow fibrous material

Non-Fibrous Materials:  
Binder/Filler

Other Fibrous Materials:%  
Glass fibers 97%

Asbestos Type: %  
None Detected ND

Lab ID: 15042677 Client Sample #: DH002A-018A

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1 Description: White soft/elastic material with debris

Non-Fibrous Materials:  
Binder/Filler, Caulking compound

Other Fibrous Materials:%  
Cellulose 2%

Asbestos Type: %  
None Detected ND

Lab ID: 15042678 Client Sample #: DH002A-018B

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1 Description: White soft/elastic material

Non-Fibrous Materials:  
Binder/Filler, Caulking compound

Other Fibrous Materials:%  
Cellulose 2%

Asbestos Type: %  
None Detected ND

Lab ID: 15042679 Client Sample #: DH002A-018C

Location: DOD Demo, Honolulu, Hawaii.

<p><b>Sampled by:</b> Client</p> <p><b>Analyzed by:</b> Dhafar Mohammedi</p> <p><b>Reviewed by:</b> Nick Ly</p>	<p><b>Date:</b> 05/06/2015</p> <p><b>Date:</b> 05/06/2015  Nick Ly, Technical Director</p>
---	---

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii.

Batch #: 1507791.00

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 29

Samples Analyzed: 24

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

Layer 1 of 1	Description: White brittle material			
	Non-Fibrous Materials:	Other Fibrous Materials:%	<b>Asbestos Type: %</b>	
	Binder/Filler, Caulking compound	Cellulose 3%	<b>None Detected ND</b>	

Lab ID: 15042680 Client Sample #: DH002A-019A

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1	Description: Light gray flat compressed powdery material with paint and fibrous material			
	Non-Fibrous Materials:	Other Fibrous Materials:%	<b>Asbestos Type: %</b>	
	Binder/Filler, Calcareous particles, Paint	Cellulose 2%	<b>Amosite 25%</b>	

Lab ID: 15042681 Client Sample #: DH002A-019B Sample Status: Not Analyzed


Lab ID: 15042682 Client Sample #: DH002A-019C Sample Status: Not Analyzed

Sampled by: Client

Analyzed by: Dhafar Mohammedi

Reviewed by: Nick Ly

Date: 05/06/2015

Date: 05/06/2015  Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# ASBESTOS CHAIN OF CUSTODY

# 1507791

Turn Around Time:  
 1 Hour     24 Hours     4 Days  
 2 Hours     2 Days     5 Days  
 4 Hours     3 Days     10 Days  
 Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company: AECOM Project Manager: Fletcher Kimura  
 Address: 1001 Bishop Street, Suite 1600 Cell: (808) 542-3752  
Honolulu, Hawaii 96813 Email: fletcher.kimura@aecom.com  
 Phone: (808) 954-4536 Fax: (808) 523-8950

Project Name/Number: 60340502.0500 Project Location: DOD Demo, Honolulu, Hawaii

- PCM Air (NIOSH 7400)
- PLM (EPA 600/R-93-116)
- PLM Gravimetry (600/R-93-116)
- Asbestos Friable/Non-Friable (EPA 600/R-93/116)
- TEM (NIOSH 7402)
- EPA 400 Points (600/R-93-116)
- Asbestos in Vermiculite (EPA 600/R-04/004)
- Other: PLEASE STOP ON FIRST POSITIVE
- TEM (AHERA)
- EPA 1000 Points (600/R-93-116)
- Asbestos in Sediment (EPA 1900 Points)

Reporting Instructions: Report to Fletcher Kimura. Please cc teresa.quiniola@aecom.com  
 Call ( ) -     Fax ( ) -     Email: fletcher.kimura@aecom.com

Total Number of Samples: 260

Sample ID	Description	A/R
1	DH002A-015C Textured cement	
2	DH002A-016A Orange skim coat	
3	DH002A-016B Orange skim coat	
4	DH002A-016C Orange skim coat	
5	DH002A-016D Orange skim coat	
6	DH002A-016E Orange skim coat	
7	DH002A-017A Plenum insulation	
8	DH002A-017B Plenum insulation	
9	DH002A-017C Plenum insulation	
10	DH002A-018A Sink caulk	
11	DH002A-018B Sink caulk	
12	DH002A-018C Sink caulk	
13	DH002A-019A Acoustic ceiling tile backer board	
14	DH002A-019B Acoustic ceiling tile backer board	
15	DH002A-019C Acoustic ceiling tile backer board	

Print Name	Signature	Company	Date	Time
Sampled by: Fletcher Kimura and Ryan Shinmoto		AECOM	4/15-4/17, 4/21/15	--
Relinquish by: Fletcher Kimura		AECOM	4/29/15	11:00 am

**Office Use Only**

Print Name	Signature	Company	Date	Time
Received by: Fatima Khan		Nvl Labs	4/30/15	9:15am Fletcher
Analyzed by: Dhakar U.			5-6-15	11 AM
Called by:				
Faxed/Email by:				



# ASBESTOS CHAIN OF CUSTODY

# 1507791

Turn Around Time

- 1 Hour     24 Hours     4 Days  
 2 Hours     2 Days     5 Days  
 4 Hours     3 Days     10 Days

Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company AECOM  
 Address 1001 Bishop Street, Suite 1600  
Honolulu, Hawaii 96813  
 Phone (808) 954-4536

Project Manager Fletcher Kimura  
 Cell ( 808 ) 542 - 3752  
 Email fletcher.kimura@aecom.com  
 Fax ( 808 ) 523 - 8950

Project Name/Number 60340502.0500 Project Location DOD Demo, Honolulu, Hawaii

- PCM Air (NIOSH 7400)     TEM (NIOSH 7402)     TEM (AHERA)     TEM (EPA Level II Modified)  
 PLM (EPA 600/R-93-116)     EPA 400 Points (600/R-93-116)     EPA 1000Points (600/R-93-116)  
 PLM Gravimetry (600/R-93-116)     Asbestos in Vermiculite (EPA 600/R-04/004)     Asbestos in Sediment (EPA 1900 Points)  
 Asbestos Friable/Non-Friable (EPA 600/R-93/116)     Other PLEASE STOP ON FIRST POSITIVE

Reporting Instructions Report to Fletcher Kimura. Please cc teresa.quiniola@aecom.com  
 Call ( )     Fax ( )     Email fletcher.kimura@aecom.com

Total Number of Samples 260

	Sample ID	Description	A/R
1	DH002A-009C	Type A 2'x4' acoustic ceiling tile	
2	DH002A-010A	Type B 2'x4' acoustic ceiling tile	
3	DH002A-010B	Type B 2'x4' acoustic ceiling tile	
4	DH002A-010C	Type B 2'x4' acoustic ceiling tile	
5	DH002A-012A	9"x9" dark brown VFT and mastic	
6	DH002A-012B	9"x9" dark brown VFT and mastic	
7	DH002A-012C	9"x9" dark brown VFT and mastic	
8	DH002A-013A	Type C 1'x1' acoustic ceiling tile and mastic	
9	DH002A-013B	Type C 1'x1' acoustic ceiling tile and mastic	
10	DH002A-013C	Type C 1'x1' acoustic ceiling tile and mastic	
11	DH002A-014A	Interior window caulk	
12	DH002A-014B	Interior window caulk	
13	DH002A-014C	Interior window caulk	
14	DH002A-015A	Textured cement	
15	DH002A-015B	Textured cement	

	Print Name	Signature	Company	Date	Time
Sampled by	Fletcher Kimura and Ryan Shinmoto	<i>[Signature]</i>	AECOM	4/15, 4/21/15	--
Relinquish by	Fletcher Kimura	<i>[Signature]</i>	AECOM	4/29/15	11:00 am

Office Use Only

	Print Name	Signature	Company	Date	Time
Received by	<i>[Signature]</i>	<i>[Signature]</i>	Nuvlabs	4/30/15	9:50am FedEx
Analyzed by	<i>[Signature]</i>	<i>[Signature]</i>		5-6-15	1145
Called by					
Faxed/Email by					

May 5, 2015

Fletcher Kimura

**AECOM**

1001 Bishop Street, Suite 1600  
Honolulu, HI 96813



INDUSTRIAL  
HYGIENE  
SERVICES

Laboratory | Management | Training

**RE: Bulk Asbestos Fiber Analysis, NVL Batch # 1507792.00**

Dear Mr. Kimura,

Enclosed please find test results for the bulk samples submitted to our laboratory for analysis. Examination of these samples was conducted for the presence of identifiable asbestos fibers using polarized light microscopy (PLM) with dispersion staining in accordance with both U.S. EPA 600/M4-82-020, Interim Method for Determination of Asbestos in Bulk Insulation Samples, as found in 40 CFR, Part 763, Subpart E, Appendix E (formerly Subpart F, Appendix A), and U.S. EPA 600/R-93/116 (July 1993) Test Methods.

For samples containing more than one separable layer of materials, the report will include findings for each layer (labeled Layer 1 and Layer 2, etc. for each individual layer). The asbestos concentration in the sample is determined by visual estimation.

For those samples with asbestos concentrations between 1 and 10 percent based on visual estimation, the EPA recommends a procedure known as point counting (NESHAPS, 40 CFR Part 61). Point counting is a statistically more accurate means of quantification for samples with low concentrations of asbestos. If you would like us to further refine the concentration estimates of asbestos in these samples using point counting, please let me know.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. Please do not hesitate to call if there is anything further we can assist you with.

Sincerely,

A handwritten signature in black ink, appearing to read "Nick Ly", written over a horizontal line.

Nick Ly, Technical Director



Lab Code: 102063-0

1.888.NVL.LABS  
1.888.(685.5227)  
www.nvllabs.com

Enc.: Sample Results

NVL Laboratories, Inc.

4708 Aurora Ave N, Seattle, WA 98103

p 206.547.0100 | f 206.634.1936



# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii.

Batch #: 1507792.00

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 30

Samples Analyzed: 28

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

**Lab ID: 15042683      Client Sample #: DH002A-020A**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Gray thin soft material

Non-Fibrous Materials:  
Binder/Filler, Quartz, Miscellaneous particles

Other Fibrous Materials:%  
Cellulose    2%

Asbestos Type: %  
None Detected ND

**Lab ID: 15042684      Client Sample #: DH002A-020B**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 2      Description: Gray thin soft material

Non-Fibrous Materials:  
Binder/Filler, Quartz, Miscellaneous particles

Other Fibrous Materials:%  
Cellulose    2%

Asbestos Type: %  
None Detected ND

Layer 2 of 2      Description: Clear soft adhesive

Non-Fibrous Materials:  
Adhesive/Binder, Fine particles

Other Fibrous Materials:%  
None Detected    ND

Asbestos Type: %  
None Detected ND

**Lab ID: 15042685      Client Sample #: DH002A-020C**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Gray thin soft material

Non-Fibrous Materials:  
Binder/Filler, Quartz, Miscellaneous particles

Other Fibrous Materials:%  
None Detected    ND

Asbestos Type: %  
None Detected ND

**Lab ID: 15042686      Client Sample #: DH002A-021A**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Black soft elastic material

Non-Fibrous Materials:  
Binder/Filler, Fine particles

Other Fibrous Materials:%  
None Detected    ND

Asbestos Type: %  
None Detected ND

Sampled by: Client

Analyzed by: Jason J. Stuhr

Reviewed by: Nick Ly

Date: 05/05/2015

Date: 05/05/2015

Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii.

Batch #: 1507792.00

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 30

Samples Analyzed: 28

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

**Lab ID: 15042687**      **Client Sample #: DH002A-021B**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Black soft elastic material

Non-Fibrous Materials:  
Binder/Filler, Fine particles

Other Fibrous Materials:%  
Cellulose 2%

**Asbestos Type: %**  
**None Detected ND**

**Lab ID: 15042688**      **Client Sample #: DH002A-021C**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Black soft elastic material

Non-Fibrous Materials:  
Binder/Filler, Fine particles

Other Fibrous Materials:%  
Cellulose 3%

**Asbestos Type: %**  
**None Detected ND**

**Lab ID: 15042689**      **Client Sample #: DH002A-022A**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 3      Description: Tan ceramic material

Non-Fibrous Materials:  
Ceramic/Binder, Granules

Other Fibrous Materials:%  
None Detected ND

**Asbestos Type: %**  
**None Detected ND**

Layer 2 of 3      Description: Gray hard sandy material

Non-Fibrous Materials:  
Binder/Filler, Mineral grains, Granules

Other Fibrous Materials:%  
Cellulose 2%

**Asbestos Type: %**  
**None Detected ND**

Layer 3 of 3      Description: White hard sandy material

Non-Fibrous Materials:  
Binder/Filler, Granules, Miscellaneous particles

Other Fibrous Materials:%  
None Detected ND

**Asbestos Type: %**  
**None Detected ND**

**Lab ID: 15042690**      **Client Sample #: DH002A-022B**

Location: DOD Demo, Honolulu, Hawaii.

**Sampled by:** Client

**Analyzed by:** Jason J. Stuhr

**Reviewed by:** Nick Ly

**Date:** 05/05/2015

**Date:** 05/05/2015

  
Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii.

**Batch #: 1507792.00**

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 30

Samples Analyzed: 28

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

<b>Layer 1 of 3</b>	<b>Description:</b> Tan ceramic material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>Asbestos Type: %</b>
	Ceramic/Binder, Granules	None Detected ND		<b>None Detected ND</b>
<b>Layer 2 of 3</b>	<b>Description:</b> Trace gray hard sandy material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>Asbestos Type: %</b>
	Binder/Filler, Mineral grains, Granules	None Detected ND		<b>None Detected ND</b>
<b>Layer 3 of 3</b>	<b>Description:</b> White hard sandy material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>Asbestos Type: %</b>
	Binder/Filler, Granules, Miscellaneous particles	None Detected ND		<b>None Detected ND</b>

**Lab ID: 15042691 Client Sample #: DH002A-022C**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 2</b>	<b>Description:</b> Tan ceramic material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>Asbestos Type: %</b>
	Ceramic/Binder, Granules	None Detected ND		<b>None Detected ND</b>
<b>Layer 2 of 2</b>	<b>Description:</b> White hard sandy material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>Asbestos Type: %</b>
	Binder/Filler, Granules, Miscellaneous particles	None Detected ND		<b>None Detected ND</b>

**Lab ID: 15042692 Client Sample #: DH002A-023A**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 4</b>	<b>Description:</b> Gray ceramic material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>Asbestos Type: %</b>
	Ceramic/Binder	None Detected ND		<b>None Detected ND</b>
<b>Layer 2 of 4</b>	<b>Description:</b> White sandy material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>Asbestos Type: %</b>
	Binder/Filler, Granules, Quartz	Talc fibers 2%		<b>None Detected ND</b>

**Sampled by:** Client

**Analyzed by:** Jason J. Stuhr

**Reviewed by:** Nick Ly

**Date:** 05/05/2015

**Date:** 05/05/2015



Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

## Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii.

**Batch #: 1507792.00**

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 30

Samples Analyzed: 28

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

<b>Layer 3 of 4</b>	<b>Description:</b> Gray sandy hard material Non-Fibrous Materials: Binder/Filler, Mineral grains, Granules	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 4 of 4</b>	<b>Description:</b> Off-white sandy hard material Non-Fibrous Materials: Binder/Filler, Quartz	Other Fibrous Materials:% Cellulose 2%	<b>Asbestos Type: %</b> <b>None Detected ND</b>

**Lab ID: 15042693      Client Sample #: DH002A-023B**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 2</b>	<b>Description:</b> Gray ceramic material Non-Fibrous Materials: Ceramic/Binder	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 2 of 2</b>	<b>Description:</b> Gray hard sandy material Non-Fibrous Materials: Binder/Filler, Mineral grains, Quartz	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>

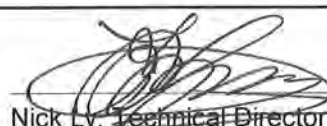
**Lab ID: 15042694      Client Sample #: DH002A-023C**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 2</b>	<b>Description:</b> Gray ceramic material Non-Fibrous Materials: Ceramic/Binder	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 2 of 2</b>	<b>Description:</b> Gray hard sandy material Non-Fibrous Materials: Binder/Filler, Mineral grains, Quartz	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>

**Lab ID: 15042695      Client Sample #: DH002A-024A**

Location: DOD Demo, Honolulu, Hawaii.

<b>Sampled by:</b> Client		
<b>Analyzed by:</b> Jason J. Stuhr	<b>Date:</b> 05/05/2015	 Nick Ly, Technical Director
<b>Reviewed by:</b> Nick Ly	<b>Date:</b> 05/05/2015	

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii.

**Batch #: 1507792.00**

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 30

Samples Analyzed: 28

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

<b>Layer 1 of 2</b>	<b>Description:</b> Tan ceramic material	Non-Fibrous Materials: Ceramic/Binder	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
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<b>Layer 2 of 2</b>	<b>Description:</b> Gray sandy hard material	Non-Fibrous Materials: Binder/Filler, Mineral grains, Quartz	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
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**Lab ID: 15042696      Client Sample #: DH002A-024B**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 2</b>	<b>Description:</b> Tan ceramic material	Non-Fibrous Materials: Ceramic/Binder	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
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<b>Layer 2 of 2</b>	<b>Description:</b> Gray sandy hard material	Non-Fibrous Materials: Binder/Filler, Mineral grains, Quartz	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
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**Lab ID: 15042697      Client Sample #: DH002A-024C**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 2</b>	<b>Description:</b> Tan ceramic material	Non-Fibrous Materials: Ceramic/Binder	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
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<b>Layer 2 of 2</b>	<b>Description:</b> Gray sandy hard material	Non-Fibrous Materials: Binder/Filler, Mineral grains, Quartz	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
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**Lab ID: 15042698      Client Sample #: DH002A-025A**

Location: DOD Demo, Honolulu, Hawaii.

**Sampled by:** Client

**Analyzed by:** Jason J. Stuhr

**Reviewed by:** Nick Ly

**Date:** 05/05/2015

**Date:** 05/05/2015



Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii.

**Batch #: 1507792.00**

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 30

Samples Analyzed: 28

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

<b>Layer 1 of 3</b>	<b>Description:</b> Light tan ceramic material	Non-Fibrous Materials: Ceramic/Binder	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 2 of 3</b>	<b>Description:</b> Gray thin brittle material	Non-Fibrous Materials: Binder/Filler, Fine particles, Fine grains	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 3 of 3</b>	<b>Description:</b> Light gray hard sandy material	Non-Fibrous Materials: Binder/Filler, Granules, Mica	Other Fibrous Materials:% Cellulose 5% Spider silk 2%	<b>Asbestos Type: %</b> <b>None Detected ND</b>

**Lab ID: 15042699 Client Sample #: DH002A-025B**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 3</b>	<b>Description:</b> Light tan ceramic material	Non-Fibrous Materials: Ceramic/Binder	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 2 of 3</b>	<b>Description:</b> Gray thin brittle material	Non-Fibrous Materials: Binder/Filler, Fine particles, Fine grains	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 3 of 3</b>	<b>Description:</b> Light gray hard sandy material	Non-Fibrous Materials: Binder/Filler, Granules, Mica	Other Fibrous Materials:% Cellulose 6%	<b>Asbestos Type: %</b> <b>None Detected ND</b>

**Lab ID: 15042700 Client Sample #: DH002A-025C**

Location: DOD Demo, Honolulu, Hawaii.

**Sampled by:** Client

**Analyzed by:** Jason J. Stuhr

**Reviewed by:** Nick Ly

**Date:** 05/05/2015

**Date:** 05/05/2015

  
Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii.

**Batch #: 1507792.00**

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 30

Samples Analyzed: 28

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

<b>Layer 1 of 2</b>	<b>Description:</b> Light tan ceramic material	Non-Fibrous Materials: Ceramic/Binder	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 2 of 2</b>	<b>Description:</b> Gray hard sandy material	Non-Fibrous Materials: Binder/Filler, Fine grains, Miscellaneous particles Insect parts	Other Fibrous Materials:% Spider silk 2%	<b>Asbestos Type: %</b> <b>None Detected ND</b>

**Lab ID: 15042701 Client Sample #: DH002A-026A**


Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 3</b>	<b>Description:</b> Gray thin soft material	Non-Fibrous Materials: Binder/Filler, Fine particles	Other Fibrous Materials:% Cellulose 2%	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 2 of 3</b>	<b>Description:</b> Gray/tan fibrous material	Non-Fibrous Materials: Binder/Filler, Miscellaneous particles	Other Fibrous Materials:% Cellulose 75% Glass fibers 10%	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 3 of 3</b>	<b>Description:</b> Dark yellow fibrous material	Non-Fibrous Materials: Fine particles	Other Fibrous Materials:% Glass fibers 98%	<b>Asbestos Type: %</b> <b>None Detected ND</b>

**Lab ID: 15042702 Client Sample #: DH002A-026B**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 3</b>	<b>Description:</b> Gray thin soft material	Non-Fibrous Materials: Binder/Filler, Fine particles	Other Fibrous Materials:% Cellulose 3%	<b>Asbestos Type: %</b> <b>None Detected ND</b>
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<b>Sampled by:</b> Client	<b>Date:</b> 05/05/2015	
<b>Analyzed by:</b> Jason J. Stuhr	<b>Date:</b> 05/05/2015	
<b>Reviewed by:</b> Nick Ly	Nick Ly, Technical Director	

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii.

**Batch #: 1507792.00**

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 30

Samples Analyzed: 28

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

<p><b>Layer 2 of 3</b>    <b>Description:</b> Gray/tan fibrous material</p> <p style="padding-left: 100px;">Non-Fibrous Materials: Binder/Filler, Miscellaneous particles, Metal foil</p>	<p>Other Fibrous Materials: % Cellulose 60% Glass fibers 11%</p>	<p><b>Asbestos Type: %</b> <b>None Detected ND</b></p>
<p><b>Layer 3 of 3</b>    <b>Description:</b> Dark yellow fibrous material</p> <p style="padding-left: 100px;">Non-Fibrous Materials: Fine particles</p>	<p>Other Fibrous Materials: % Glass fibers 98%</p>	<p><b>Asbestos Type: %</b> <b>None Detected ND</b></p>

**Lab ID: 15042703    Client Sample #: DH002A-026C**


Location: DOD Demo, Honolulu, Hawaii.

<p><b>Layer 1 of 3</b>    <b>Description:</b> Gray thin soft material</p> <p style="padding-left: 100px;">Non-Fibrous Materials: Binder/Filler, Fine particles</p>	<p>Other Fibrous Materials: % Cellulose 5%</p>	<p><b>Asbestos Type: %</b> <b>None Detected ND</b></p>
<p><b>Layer 2 of 3</b>    <b>Description:</b> Gray/tan/blue fibrous material</p> <p style="padding-left: 100px;">Non-Fibrous Materials: Binder/Filler, Miscellaneous particles, Metal foil</p>	<p>Other Fibrous Materials: % Cellulose 58% Glass fibers 10%</p>	<p><b>Asbestos Type: %</b> <b>None Detected ND</b></p>
<p><b>Layer 3 of 3</b>    <b>Description:</b> Yellow fibrous material</p> <p style="padding-left: 100px;">Non-Fibrous Materials: Fine particles</p>	<p>Other Fibrous Materials: % Glass fibers 98%</p>	<p><b>Asbestos Type: %</b> <b>None Detected ND</b></p>

**Lab ID: 15042704    Client Sample #: DH002A-027A**

Location: DOD Demo, Honolulu, Hawaii.

<p><b>Layer 1 of 1</b>    <b>Description:</b> Gray hard sandy material with surface material</p> <p style="padding-left: 100px;">Non-Fibrous Materials: Binder/Filler, Mineral grains, Quartz</p>	<p>Other Fibrous Materials: % None Detected ND</p>	<p><b>Asbestos Type: %</b> <b>None Detected ND</b></p>
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**Sampled by:** Client  
**Analyzed by:** Jason J. Stuhr      **Date:** 05/05/2015  
**Reviewed by:** Nick Ly              **Date:** 05/05/2015       Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii.

Batch #: 1507792.00

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 30

Samples Analyzed: 28

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

Lab ID: 15042705 Client Sample #: DH002A-027B

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1 Description: Gray hard sandy material

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
Binder/Filler, Mineral grains, Quartz	Spider silk 2%	

**None Detected ND**

Lab ID: 15042706 Client Sample #: DH002A-027C

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1 Description: Gray hard sandy material with surface material

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
Binder/Filler, Mineral grains, Quartz	None Detected ND	

**None Detected ND**

Lab ID: 15042707 Client Sample #: DH002A-029A

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1 Description: White flaky material with fibrous elements

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
Binder/Filler, Fine particles	None Detected ND	

**Chrysotile 3%**

Lab ID: 15042708 Client Sample #: DH002A-029B


Sample Status: Not Analyzed

Lab ID: 15042709 Client Sample #: DH002A-029C

Sample Status: Not Analyzed

Lab ID: 15042710 Client Sample #: DH002A-030A

Location: DOD Demo, Honolulu, Hawaii.

<b>Sampled by:</b> Client	
<b>Analyzed by:</b> Jason J. Stuhr	<b>Date:</b> 05/05/2015
<b>Reviewed by:</b> Nick Ly	<b>Date:</b> 05/05/2015 

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii.

Batch #: 1507792.00

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 30

Samples Analyzed: 28

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

Layer 1 of 1	Description: Light gray compressed fibrous material with paint			Asbestos Type: %
	Non-Fibrous Materials:	Other Fibrous Materials:%		None Detected ND
	Binder/Filler, Foamed glass, Fine particles	Glass fibers 65%		
	Insect parts, Paint	Cellulose 10%		

Lab ID: 15042711 Client Sample #: DH002A-030B

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1	Description: Light gray compressed fibrous material with paint			Asbestos Type: %
	Non-Fibrous Materials:	Other Fibrous Materials:%		None Detected ND
	Binder/Filler, Foamed glass, Fine particles	Glass fibers 67%		
	Paint	Cellulose 12%		

Lab ID: 15042712 Client Sample #: DH002A-030C

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1	Description: Light gray compressed fibrous material with paint			Asbestos Type: %
	Non-Fibrous Materials:	Other Fibrous Materials:%		None Detected ND
	Binder/Filler, Foamed glass, Fine particles	Glass fibers 52%		
	Paint	Cellulose 19%		

Sampled by: Client

Analyzed by: Jason J. Stuhr

Reviewed by: Nick Ly

Date: 05/05/2015

Date: 05/05/2015

Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# ASBESTOS CHAIN OF CUSTODY

# 1507792

Turn Around Time

- 1 Hour       24 Hours       4 Days
- 2 Hours       2 Days       5 Days
- 4 Hours       3 Days       10 Days

Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company AECOM Project Manager Fletcher Kimura  
 Address 1001 Bishop Street, Suite 1600 Cell ( 808 ) 542 - 3752  
Honolulu, Hawaii 96813 Email fletcher.kimura@aecom.com  
 Phone (808) 954-4536 Fax ( 808 ) 523 - 8950

Project Name/Number 60340502.0500 Project Location DOD Demo, Honolulu, Hawaii

- PCM Air (NIOSH 7400)       TEM (NIOSH 7402)       TEM (AHERA)       TEM (EPA Level II Modified)
- PLM (EPA 600/R-93-116)       EPA 400 Points (600/R-93-116)       EPA 1000Points (600/R-93-116)
- PLM Gravimetry (600/R-93-116)       Asbestos in Vermiculite (EPA 600/R-04/004)       Asbestos in Sediment (EPA 1900 Points)
- Asbestos Friable/Non-Friable (EPA 600/R-93/116)       Other PLEASE STOP ON FIRST POSITIVE

Reporting Instructions Report to Fletcher Kimura. Please cc teresa.quiniola@aecom.com  
 Call ( )       Fax ( )       Email fletcher.kimura@aecom.com

**Total Number of Samples** 260

Sample ID	Description	A/R
1	DH002A-020A Flooring treads	
2	DH002A-020B Flooring treads	
3	DH002A-020C Flooring treads	
4	DH002A-021A Black residual mastic	
5	DH002A-021B Black residual mastic	
6	DH002A-021C Black residual mastic	
7	DH002A-022A 12"x6" Tan ceramic tile	
8	DH002A-022B 12"x6" Tan ceramic tile	
9	DH002A-022C 12"x6" Tan ceramic tile	
10	DH002A-023A 6"x6" Beige ceramic tile	
11	DH002A-023B 6"x6" Beige ceramic tile	
12	DH002A-023C 6"x6" Beige ceramic tile	
13	DH002A-024A Mosaic tile	
14	DH002A-024B Mosaic tile	
15	DH002A-024C Mosaic tile	

	Print Name	Signature	Company	Date	Time
Sampled by	Fletcher Kimura and Ryan Shinmoto	<i>[Signature]</i>	AECOM	4/16, 4/17/15	--
Relinquish by	Fletcher Kimura	<i>[Signature]</i>	AECOM	4/29/15	11:00 am

**Office Use Only**

	Print Name	Signature	Company	Date	Time
Received by	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	4/30/15	9:15am Fedler
Analyzed by	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	5-5-15	11:26am
Called by					
Faxed/Email by					



# ASBESTOS CHAIN OF CUSTODY

# 1507792

Turn Around Time

- 1 Hour       24 Hours       4 Days
- 2 Hours       2 Days       5 Days
- 4 Hours       3 Days       10 Days

Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company AECOM  
 Address 1001 Bishop Street, Suite 1600  
Honolulu, Hawaii 96813  
 Phone (808) 954-4536

Project Manager Fletcher Kimura  
 Cell ( 808 ) 542 - 3752  
 Email fletcher.kimura@aecom.com  
 Fax ( 808 ) 523 - 8950

Project Name/Number 60340502.0500 Project Location DOD Demo, Honolulu, Hawaii

- PCM Air (NIOSH 7400)       TEM (NIOSH 7402)       TEM (AHERA)       TEM (EPA Level II Modified)
- PLM (EPA 600/R-93-116)       EPA 400 Points (600/R-93-116)       EPA 1000Points (600/R-93-116)
- PLM Gravimetry (600/R-93-116)       Asbestos in Vermiculite (EPA 600/R-04/004)       Asbestos in Sediment (EPA 1900 Points)
- Asbestos Friable/Non-Friable (EPA 600/R-93/116)       Other PLEASE STOP ON FIRST POSITIVE

Reporting Instructions Report to Fletcher Kimura. Please cc teresa.quiniola@aecom.com  
 Call (      )       Fax (      )       Email fletcher.kimura@aecom.com

Total Number of Samples 260

Sample ID	Description	A/R
1	DH002A-025A 4"x4" Tan ceramic tile	
2	DH002A-025B 4"x4" Tan ceramic tile	
3	DH002A-025C 4"x4" Tan ceramic tile	
4	DH002A-026A Pipe insulation	
5	DH002A-026B Pipe insulation	
6	DH002A-026C Pipe insulation	
7	DH002A-027A Concrete wall base	
8	DH002A-027B Concrete wall base	
9	DH002A-027C Concrete wall base	
10	DH002A-029A Sink insulation	
11	DH002A-029B Sink insulation	
12	DH002A-029C Sink insulation	
13	DH002A-030A Type D 2x4 Acoustic ceiling tile	
14	DH002A-030B Type D 2x4 Acoustic ceiling tile	
15	DH002A-030C Type D 2x4 Acoustic ceiling tile	

	Print Name	Signature	Company	Date	Time
Sampled by	Fletcher Kimura and Ryan Shinmolo		AECOM	4/16, 4/17, 4/21/15	--
Relinquish by	Fletcher Kimura		AECOM	4/29/15	11:00 am

Office Use Only

	Print Name	Signature	Company	Date	Time
Received by			Nuvlabs	4/30/15	G. Sanfeller
Analyzed by			NVL	5-5-15	11:26
Called by					
Faxed/Email by					



May 5, 2015

Fletcher Kimura  
**AECOM**  
1001 Bishop Street, Suite 1600  
Honolulu, HI 96813



Laboratory | Management | Training

**RE: Bulk Asbestos Fiber Analysis, NVL Batch # 1507794.00**

Dear Mr. Kimura,

Enclosed please find test results for the bulk samples submitted to our laboratory for analysis. Examination of these samples was conducted for the presence of identifiable asbestos fibers using polarized light microscopy (PLM) with dispersion staining in accordance with both U.S. EPA 600/M4-82-020, Interim Method for Determination of Asbestos in Bulk Insulation Samples, as found in 40 CFR, Part 763, Subpart E, Appendix E (formerly Subpart F, Appendix A), and U.S. EPA 600/R-93/116 (July 1993) Test Methods.

For samples containing more than one separable layer of materials, the report will include findings for each layer (labeled Layer 1 and Layer 2, etc. for each individual layer). The asbestos concentration in the sample is determined by visual estimation.

For those samples with asbestos concentrations between 1 and 10 percent based on visual estimation, the EPA recommends a procedure known as point counting (NESHAPS, 40 CFR Part 61). Point counting is a statistically more accurate means of quantification for samples with low concentrations of asbestos. If you would like us to further refine the concentration estimates of asbestos in these samples using point counting, please let me know.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. Please do not hesitate to call if there is anything further we can assist you with.

Sincerely,

A handwritten signature in black ink, appearing to read 'Nick Ly', enclosed within a large, loopy oval scribble.

Nick Ly, Technical Director



Lab Code: 102083-0



# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii.

Batch #: 1507794.00

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 30

Samples Analyzed: 30

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

Lab ID: 15042714 Client Sample #: DH002A-031A

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1 Description: Light Gray woven fibrous material with silver paint

Non-Fibrous Materials:

Other Fibrous Materials: %

Asbestos Type: %

Binder/Filler, Paint

Glass fibers 80%

None Detected ND

Lab ID: 15042715 Client Sample #: DH002A-031B

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1 Description: Light Gray woven fibrous material with silver paint

Non-Fibrous Materials:

Other Fibrous Materials: %

Asbestos Type: %

Binder/Filler, Paint

Glass fibers 82%

None Detected ND

Lab ID: 15042716 Client Sample #: DH002A-031C

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1 Description: Light Gray woven fibrous material with silver paint

Non-Fibrous Materials:

Other Fibrous Materials: %

Asbestos Type: %

Binder/Filler, Paint

Glass fibers 81%

None Detected ND

Lab ID: 15042717 Client Sample #: DH002A-032A

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1 Description: Trace gray brittle material with paint

Non-Fibrous Materials:

Other Fibrous Materials: %

Asbestos Type: %

Fine particles, Binder/Filler, Paint

Cellulose <1%

None Detected ND

Lab ID: 15042718 Client Sample #: DH002A-032B

Location: DOD Demo, Honolulu, Hawaii.

Sampled by: Client

Analyzed by: Dhafar Mohammedi

Reviewed by: Nick Ly

Date: 05/05/2015

Date: 05/05/2015

Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii.

**Batch #: 1507794.00**

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 30

Samples Analyzed: 30

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

<b>Layer 1 of 1</b>	<b>Description:</b> Trace gray brittle material with paint			
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>Asbestos Type: %</b>
	Fine particles, Binder/Filler, Paint	Cellulose <1%		<b>None Detected ND</b>

**Lab ID: 15042719 Client Sample #: DH002A-032C**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 1</b>	<b>Description:</b> Gray sandy/brittle material with paint			
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>Asbestos Type: %</b>
	Binder/Filler, Sand, Paint	Cellulose 2%		<b>None Detected ND</b>

**Lab ID: 15042720 Client Sample #: DH002A-032D**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 1</b>	<b>Description:</b> Trace gray brittle material with paint			
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>Asbestos Type: %</b>
	Binder/Filler, Paint, Fine particles	Cellulose 2%		<b>None Detected ND</b>

**Lab ID: 15042721 Client Sample #: DH002A-032E**

Location: DOD Demo, Honolulu, Hawaii.


<b>Layer 1 of 1</b>	<b>Description:</b> Trace gray sandy material with multilayered paint			
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>Asbestos Type: %</b>
	Sand, Paint, Binder/Filler	Cellulose 2%		<b>None Detected ND</b>

**Lab ID: 15042722 Client Sample #: DH002A-033A**

Location: DOD Demo, Honolulu, Hawaii.

Comments: Small sample size

<b>Layer 1 of 1</b>	<b>Description:</b> Trace off-white flaky material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>Asbestos Type: %</b>
	Paint/Binder	None Detected ND		<b>None Detected ND</b>

<b>Sampled by:</b> Client		
<b>Analyzed by:</b> Dhafar Mohammadi	<b>Date:</b> 05/05/2015	
<b>Reviewed by:</b> Nick Ly	<b>Date:</b> 05/05/2015	Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii.

Batch #: 1507794.00

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 30

Samples Analyzed: 30

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

**Lab ID: 15042723**      **Client Sample #: DH002A-033B**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Off-white flaky material

Non-Fibrous Materials:  
Paint/Binder

Other Fibrous Materials:%  
None Detected    ND

**Asbestos Type: %**  
**None Detected ND**

**Lab ID: 15042724**      **Client Sample #: DH002A-033C**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Off-white flaky material

Non-Fibrous Materials:  
Paint/Binder

Other Fibrous Materials:%  
None Detected    ND

**Asbestos Type: %**  
**None Detected ND**

**Lab ID: 15042725**      **Client Sample #: DH002A-033D**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Gray flaky material

Non-Fibrous Materials:  
Paint/Binder

Other Fibrous Materials:%  
None Detected    ND

**Asbestos Type: %**  
**None Detected ND**

**Lab ID: 15042726**      **Client Sample #: DH002A-033E**

Location: DOD Demo, Honolulu, Hawaii.

Comments: Small sample size

Layer 1 of 1      Description: Off-white flaky material

Non-Fibrous Materials:  
Paint/Binder

Other Fibrous Materials:%  
None Detected    ND

**Asbestos Type: %**  
**None Detected ND**

**Lab ID: 15042727**      **Client Sample #: DH002A-033F**

Location: DOD Demo, Honolulu, Hawaii.

Comments: Small sample size

**Sampled by:** Client

**Analyzed by:** Dhafar Mohammedi

**Reviewed by:** Nick Ly

**Date:** 05/05/2015

**Date:** 05/05/2015

Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii.

**Batch #: 1507794.00**

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 30

Samples Analyzed: 30

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

<b>Layer 1 of 1</b>	<b>Description:</b> Off-white flaky material			
	Non-Fibrous Materials:	Other Fibrous Materials:%	<b>Asbestos Type: %</b>	
	Paint/Binder	None Detected ND	<b>None Detected ND</b>	

**Lab ID: 15042728**      **Client Sample #: DH002A-033G**  
Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 1</b>	<b>Description:</b> Gray flaky material			
	Non-Fibrous Materials:	Other Fibrous Materials:%	<b>Asbestos Type: %</b>	
	Paint/Binder	None Detected ND	<b>None Detected ND</b>	

**Lab ID: 15042729**      **Client Sample #: DH002A-034A**  
Location: DOD Demo, Honolulu, Hawaii.


<b>Layer 1 of 1</b>	<b>Description:</b> Black soft material			
	Non-Fibrous Materials:	Other Fibrous Materials:%	<b>Asbestos Type: %</b>	
	Binder/Filler	None Detected ND	<b>None Detected ND</b>	

**Lab ID: 15042730**      **Client Sample #: DH002A-034B**  
Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 1</b>	<b>Description:</b> Black soft material			
	Non-Fibrous Materials:	Other Fibrous Materials:%	<b>Asbestos Type: %</b>	
	Binder/Filler	None Detected ND	<b>None Detected ND</b>	

**Lab ID: 15042731**      **Client Sample #: DH002A-034C**  
Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 1</b>	<b>Description:</b> Black flaky material with trace paint			
	Non-Fibrous Materials:	Other Fibrous Materials:%	<b>Asbestos Type: %</b>	
	Binder/Filler, Paint	Cellulose <1%	<b>None Detected ND</b>	

<p><b>Sampled by:</b> Client</p> <p><b>Analyzed by:</b> Dhafar Mohammadi</p> <p><b>Reviewed by:</b> Nick Ly</p>	<p><b>Date:</b> 05/05/2015</p> <p><b>Date:</b> 05/05/2015</p>	 Nick Ly, Technical Director
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Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii.

Batch #: 1507794.00

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 30

Samples Analyzed: 30

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

**Lab ID: 15042732      Client Sample #: DH002A-036A**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 3	Description: White compacted powdery material with paint Non-Fibrous Materials: Calcareous binder, Calcareous particles, Paint	Other Fibrous Materials:%	<b>Asbestos Type: %</b> None Detected ND
		Cellulose 2%	
		Glass fibers 2%	

Layer 2 of 3	Description: White chalky material with paper Non-Fibrous Materials: Binder/Filler, Gypsum/Binder	Other Fibrous Materials:%	<b>Asbestos Type: %</b> None Detected ND
		Cellulose 22%	
		Glass fibers 4%	

Layer 3 of 3	Description: Yellow fibrous material Non-Fibrous Materials: Binder/Filler	Other Fibrous Materials:%	<b>Asbestos Type: %</b> None Detected ND
		Glass fibers 95%	

**Lab ID: 15042733      Client Sample #: DH002A-036B**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 2	Description: White compacted powdery material with paint & paper Non-Fibrous Materials: Binder/Filler, Calcareous particles, Paint	Other Fibrous Materials:%	<b>Asbestos Type: %</b> None Detected ND
		Cellulose 12%	

Layer 2 of 2	Description: White chalky material with paper Non-Fibrous Materials: Binder/Filler, Gypsum/Binder	Other Fibrous Materials:%	<b>Asbestos Type: %</b> None Detected ND
		Cellulose 23%	
		Glass fibers 5%	

**Lab ID: 15042734      Client Sample #: DH002A-036C**

Location: DOD Demo, Honolulu, Hawaii.

Sampled by: Client

Analyzed by: Dhafar Mohammedi

Reviewed by: Nick Ly

Date: 05/05/2015

Date: 05/05/2015

Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii.

**Batch #: 1507794.00**

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 30

Samples Analyzed: 30

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

<b>Layer 1 of 2</b>	<b>Description:</b> White compacted powdery material with paint	Non-Fibrous Materials: Binder/Filler, Calcareous particles, Paint	Other Fibrous Materials:% Cellulose 2%	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 2 of 2</b>	<b>Description:</b> White chalky material with paper	Non-Fibrous Materials: Binder/Filler, Gypsum/Binder	Other Fibrous Materials:% Cellulose 23% Glass fibers 4%	<b>Asbestos Type: %</b> <b>None Detected ND</b>

**Lab ID: 15042735 Client Sample #: DH002A-037A**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 2</b>	<b>Description:</b> Brown rubbery material	Non-Fibrous Materials: Rubber/Binder, Binder/Filler	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 2 of 2</b>	<b>Description:</b> Brown brittle mastic	Non-Fibrous Materials: Binder/Filler, Mastic/Binder, Fine particles	Other Fibrous Materials:% Cellulose 2%	<b>Asbestos Type: %</b> <b>None Detected ND</b>

**Lab ID: 15042736 Client Sample #: DH002A-037B**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 2</b>	<b>Description:</b> Brown rubbery material with trace paint	Non-Fibrous Materials: Rubber/Binder, Binder/Filler, Paint	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 2 of 2</b>	<b>Description:</b> Brown brittle mastic with debris	Non-Fibrous Materials: Binder/Filler, Mastic/Binder, Fine particles	Other Fibrous Materials:% Cellulose 3% Synthetic fibers 2%	<b>Asbestos Type: %</b> <b>None Detected ND</b>

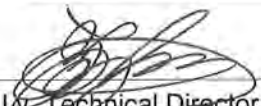
**Sampled by:** Client

**Analyzed by:** Dhafar Mohammedi

**Reviewed by:** Nick Ly

**Date:** 05/05/2015

**Date:** 05/05/2015

  
Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii.

**Batch #: 1507794.00**

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 30

Samples Analyzed: 30

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

**Lab ID: 15042737      Client Sample #: DH002A-037C**

Location: DOD Demo, Honolulu, Hawaii.

<p><b>Layer 1 of 2</b>      <b>Description:</b> Brown rubbery material</p> <p style="padding-left: 40px;">Non-Fibrous Materials: Rubber/Binder, Binder/Filler</p>	<p>Other Fibrous Materials:% None Detected    ND</p>	<p><b>Asbestos Type: %</b> <b>None Detected ND</b></p>
<p><b>Layer 2 of 2</b>      <b>Description:</b> Brown brittle mastic with debris</p> <p style="padding-left: 40px;">Non-Fibrous Materials: Binder/Filler, Mastic/Binder, Fine particles</p>	<p>Other Fibrous Materials:% Cellulose    4%</p>	<p><b>Asbestos Type: %</b> <b>None Detected ND</b></p>

**Lab ID: 15042738      Client Sample #: DH002A-038A**


Location: DOD Demo, Honolulu, Hawaii.

<p><b>Layer 1 of 2</b>      <b>Description:</b> Off-white vinyl tile</p> <p style="padding-left: 40px;">Non-Fibrous Materials: Vinyl/Binder, Quartz</p>	<p>Other Fibrous Materials:% Cellulose    2%</p>	<p><b>Asbestos Type: %</b> <b>None Detected ND</b></p>
<p><b>Layer 2 of 2</b>      <b>Description:</b> Black asphaltic mastic</p> <p style="padding-left: 40px;">Non-Fibrous Materials: Asphalt/Binder, Binder/Filler</p>	<p>Other Fibrous Materials:% Cellulose    3%</p>	<p><b>Asbestos Type: %</b> <b>None Detected ND</b></p>

**Lab ID: 15042739      Client Sample #: DH002A-038B**

Location: DOD Demo, Honolulu, Hawaii.

<p><b>Layer 1 of 2</b>      <b>Description:</b> Off-white/tan vinyl tile</p> <p style="padding-left: 40px;">Non-Fibrous Materials: Vinyl/Binder, Quartz</p>	<p>Other Fibrous Materials:% Cellulose    2%</p>	<p><b>Asbestos Type: %</b> <b>None Detected ND</b></p>
<p><b>Layer 2 of 2</b>      <b>Description:</b> Black asphaltic mastic</p> <p style="padding-left: 40px;">Non-Fibrous Materials: Asphalt/Binder, Binder/Filler</p>	<p>Other Fibrous Materials:% Cellulose    3%</p>	<p><b>Asbestos Type: %</b> <b>None Detected ND</b></p>

**Sampled by:** Client  
**Analyzed by:** Dhafar Mohammadi      **Date:** 05/05/2015  
**Reviewed by:** Nick Ly      **Date:** 05/05/2015      Nick Ly, Technical Director 

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii.

Batch #: 1507794.00

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 30

Samples Analyzed: 30

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

**Lab ID: 15042740**      **Client Sample #: DH002A-038C**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 2      Description: Off-white/tan vinyl tile

Non-Fibrous Materials:

Vinyl/Binder, Quartz

Other Fibrous Materials:%

Cellulose 2%

**Asbestos Type: %**

**None Detected ND**

Layer 2 of 2      Description: Black asphaltic mastic

Non-Fibrous Materials:

Asphalt/Binder, Binder/Filler

Other Fibrous Materials:%

Cellulose 3%

**Asbestos Type: %**

**None Detected ND**

**Lab ID: 15042741**      **Client Sample #: DH002A-039A**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: White compacted powdery material with paint

Non-Fibrous Materials:

Calcareous binder, Calcareous particles, Paint

Other Fibrous Materials:%

Cellulose 2%

**Asbestos Type: %**

**None Detected ND**

**Lab ID: 15042742**      **Client Sample #: DH002A-039B**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Off-white soft material with paint and trace white powdery material

Non-Fibrous Materials:

Calcareous particles, Paint, Caulking compound

Other Fibrous Materials:%

Cellulose 2%

**Asbestos Type: %**

**None Detected ND**

**Lab ID: 15042743**      **Client Sample #: DH002A-039C**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: White compacted powdery material with paint

Non-Fibrous Materials:

Calcareous binder, Calcareous particles, Paint

Other Fibrous Materials:%

Cellulose 2%

**Asbestos Type: %**

**None Detected ND**

**Sampled by:** Client

**Analyzed by:** Dhafar Mohammedi

**Reviewed by:** Nick Ly

**Date:** 05/05/2015

**Date:** 05/05/2015

  
Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# ASBESTOS CHAIN OF CUSTODY

# 1507794

Turn Around Time

- 1 Hour       24 Hours       4 Days
- 2 Hours       2 Days       5 Days
- 4 Hours       3 Days       10 Days

Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company AECOM  
 Address 1001 Bishop Street, Suite 1600  
Honolulu, Hawaii 96813  
 Phone (808) 954-4536

Project Manager Fletcher Kimura  
 Cell ( 808 ) 542 - 3752  
 Email fletcher.kimura@aecom.com  
 Fax ( 808 ) 523 - 8950

Project Name/Number 60340502.0500 Project Location DOD Demo, Honolulu, Hawaii

- PCM Air (NIOSH 7400)       TEM (NIOSH 7402)       TEM (AHERA)       TEM (EPA Level II Modified)
- PLM (EPA 600/R-93-116)       EPA 400 Points (600/R-93-116)       EPA 1000Points (600/R-93-116)
- PLM Gravimetry (600/R-93-116)       Asbestos in Vermiculite (EPA 600/R-04/004)       Asbestos in Sediment (EPA 1900 Points)
- Asbestos Friable/Non-Friable (EPA 600/R-93/116)       Other PLEASE STOP ON FIRST POSITIVE

Reporting Instructions Report to Fletcher Kimura. Please cc teresa.quiniola@aecom.com  
 Call ( ) - -       Fax ( ) - -       Email fletcher.kimura@aecom.com

Total Number of Samples 260

Sample ID	Description	A/R
1	DH002A-031A	Dust duct
2	DH002A-031B	Dust duct
3	DH002A-031C	Dust duct
4	DH002A-032A	Interior concrete paint
5	DH002A-032B	Interior concrete paint
6	DH002A-032C	Interior concrete paint
7	DH002A-032D	Interior concrete paint
8	DH002A-032E	Interior concrete paint
9	DH002A-033A	Corrugated metal coating
10	DH002A-033B	Corrugated metal coating
11	DH002A-033C	Corrugated metal coating
12	DH002A-033D	Corrugated metal coating
13	DH002A-033E	Corrugated metal coating
14	DH002A-033F	Corrugated metal coating
15	DH002A-033G	Corrugated metal coating

	Print Name	Signature	Company	Date	Time
Sampled by	Fletcher Kimura and Ryan Shinmoto		AECOM	4/16, 4/17/15	--
Relinquish by	Fletcher Kimura		AECOM	4/29/15	11:00 am

Office Use Only

	Print Name	Signature	Company	Date	Time
Received by			NVL Labs	4/30/15	9:55 am FedEx
Analyzed by				5-5-15	1:45
Called by					
Faxed/Email by					





# ASBESTOS CHAIN OF CUSTODY

# 1507794

Turn Around Time

- 1 Hour
- 2 Hours
- 4 Hours
- 2 Days
- 3 Days
- 5 Days
- 10 Days

Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company AECOM  
 Address 1001 Bishop Street, Suite 1600  
Honolulu, Hawaii 96813  
 Phone (808) 954-4536

Project Manager Fletcher Kimura  
 Cell ( 808 ) 542-3752  
 Email fletcher.kimura@aecom.com  
 Fax ( 808 ) 523-8950

Project Name/Number 60340502.0500 Project Location DOD Demo, Honolulu, Hawaii

- PCM Air (NIOSH 7400)
- PLM (EPA 600/R-93-116)
- PLM Gravimetry (600/R-93-116)
- Asbestos Friable/Non-Friable (EPA 600/R-93/116)
- TEM (NIOSH 7402)
- EPA 400 Points (600/R-93-116)
- Asbestos in Vermiculite (EPA 600/R-04/004)
- Other PLEASE STOP ON FIRST POSITIVE
- TEM (AHERA)
- EPA 1000 Points (600/R-93-116)
- Asbestos in Sediment (EPA 1900 Points)

Reporting Instructions Report to Fletcher Kimura. Please cc teresa.quiniola@aecom.com  
 Call ( ) -  Fax ( ) -  Email fletcher.kimura@aecom.com

Total Number of Samples 260

Sample ID	Description	A/R
1	DH002A-034A	Wall rivet mastic
2	DH002A-034B	Wall rivet mastic
3	DH002A-034C	Wall rivet mastic
4	DH002A-036A	Drywall and joint compound
5	DH002A-036B	Drywall and joint compound
6	DH002A-036C	Drywall and joint compound
7	DH002A-037A	Dark brown cove base
8	DH002A-037B	Dark brown cove base
9	DH002A-037C	Dark brown cove base
10	DH002A-038A	12"x12" Tan vinyl floor tile
11	DH002A-038B	12"x12" Tan vinyl floor tile
12	DH002A-038C	12"x12" Tan vinyl floor tile
13	DH002A-039A	Interior window caulk
14	DH002A-039B	Interior window caulk
15	DH002A-039C	Interior window caulk

	Print Name	Signature	Company	Date	Time
Sampled by	Fletcher Kimura and Ryan Shinmoto	<i>[Signature]</i>	AECOM	4/17/15	--
Relinquish by	Fletcher Kimura	<i>[Signature]</i>	AECOM	4/29/15	11:00 am

**Office Use Only**

	Print Name	Signature	Company	Date	Time
Received by	<i>[Signature]</i>	<i>[Signature]</i>	NVL Labs	4/20/15	9:55 am
Analyzed by	<i>[Signature]</i>	<i>[Signature]</i>	NVL Labs	5-5-15	1445
Called by					
Faxed/Email by					



May 4, 2015

Fletcher Kimura  
**AECOM**  
1001 Bishop Street, Suite 1600  
Honolulu, HI 96813



INDUSTRIAL  
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Laboratory | Management | Training

**RE: Bulk Asbestos Fiber Analysis, NVL Batch # 1507795.00**

Dear Mr. Kimura,

Enclosed please find test results for the bulk samples submitted to our laboratory for analysis. Examination of these samples was conducted for the presence of identifiable asbestos fibers using polarized light microscopy (PLM) with dispersion staining in accordance with both U.S. EPA 600/M4-82-020, Interim Method for Determination of Asbestos in Bulk Insulation Samples, as found in 40 CFR, Part 763, Subpart E, Appendix E (formerly Subpart F, Appendix A), and U.S. EPA 600/R-93/116 (July 1993) Test Methods.

For samples containing more than one separable layer of materials, the report will include findings for each layer (labeled Layer 1 and Layer 2, etc. for each individual layer). The asbestos concentration in the sample is determined by visual estimation.

For those samples with asbestos concentrations between 1 and 10 percent based on visual estimation, the EPA recommends a procedure known as point counting (NESHAPS, 40 CFR Part 61). Point counting is a statistically more accurate means of quantification for samples with low concentrations of asbestos. If you would like us to further refine the concentration estimates of asbestos in these samples using point counting, please let me know.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. Please do not hesitate to call if there is anything further we can assist you with.

Sincerely,

A handwritten signature in black ink, appearing to read "Nick Ly", enclosed within a large, loopy oval scribble.

Nick Ly, Technical Director



Lab Code: 102063-0

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii.

Batch #: 1507795.00

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 30

Samples Analyzed: 30

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

Lab ID: 15042744 Client Sample #: DH002A-040A

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1 Description: Light gray compressed fibrous material with paint

Non-Fibrous Materials:	Other Fibrous Materials:%
Fine particles, Perlite, Paint	Cellulose 60%
	Glass fibers 8%

Asbestos Type: %  
None Detected ND

Lab ID: 15042745 Client Sample #: DH002A-040B

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1 Description: Light gray compressed fibrous material with paint

Non-Fibrous Materials:	Other Fibrous Materials:%
Fine particles, Perlite, Glass beads	Cellulose 55%
Paint	Glass fibers 15%

Asbestos Type: %  
None Detected ND

Lab ID: 15042746 Client Sample #: DH002A-040C

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1 Description: Light gray compressed fibrous material with paint

Non-Fibrous Materials:	Other Fibrous Materials:%
Fine particles, Perlite, Glass beads	Cellulose 60%
Paint	Glass fibers 10%

Asbestos Type: %  
None Detected ND

Lab ID: 15042747 Client Sample #: DH002A-041A

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1 Description: White soft material with paint

Non-Fibrous Materials:	Other Fibrous Materials:%
Calcareous particles, Binder/Filler, Paint	None Detected ND

Asbestos Type: %  
None Detected ND

Sampled by: Client

Analyzed by: Nadezhda Prsyazhnyuk

Reviewed by: Nick Ly

Date: 05/04/2015

Date: 05/04/2015

Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii.

**Batch #: 1507795.00**

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 30

Samples Analyzed: 30

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

**Lab ID: 15042748 Client Sample #: DH002A-041B**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 1</b>	<b>Description:</b> White soft material with paint			
	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>	
	Calcareous particles, Binder/Filler, Paint	None Detected ND	<b>None Detected ND</b>	

**Lab ID: 15042749 Client Sample #: DH002A-041C**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 1</b>	<b>Description:</b> White soft material with paint			
	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>	
	Calcareous particles, Binder/Filler, Paint	None Detected ND	<b>None Detected ND</b>	

**Lab ID: 15042750 Client Sample #: DH002A-042A**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 2</b>	<b>Description:</b> Brown with dark brown streaks wall vinyl and thin mastic			
	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>	
	Vinyl/Binder, Mastic/Binder	None Detected ND	<b>None Detected ND</b>	
<b>Layer 2 of 2</b>	<b>Description:</b> Tan compressed fibrous material			
	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>	
	Fine particles, Adhesive/Binder	Cellulose 98%	<b>None Detected ND</b>	

**Lab ID: 15042751 Client Sample #: DH002A-042B**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 3</b>	<b>Description:</b> Brown with dark brown streaks wall vinyl and thin mastic			
	Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>	
	Vinyl/Binder, Mastic/Binder	None Detected ND	<b>None Detected ND</b>	

**Sampled by:** Client

**Analyzed by:** Nadezhda Prysyzhnyuk

**Reviewed by:** Nick Ly

**Date:** 05/04/2015

**Date:** 05/04/2015

Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii.

**Batch #: 1507795.00**

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 30

Samples Analyzed: 30

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

<b>Layer 2 of 3</b>	<b>Description:</b> Tan compressed fibrous material	Non-Fibrous Materials: Fine particles, Adhesive/Binder	Other Fibrous Materials:% Cellulose 98%	<b>Asbestos Type: % None Detected ND</b>
<b>Layer 3 of 3</b>	<b>Description:</b> Brown paper with adhesive	Non-Fibrous Materials: Fine particles, Adhesive/Binder	Other Fibrous Materials:% Cellulose 93%	<b>Asbestos Type: % None Detected ND</b>

**Lab ID: 15042752 Client Sample #: DH002A-042C**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 3</b>	<b>Description:</b> Brown with dark brown streaks wall vinyl and thin mastic	Non-Fibrous Materials: Vinyl/Binder, Mastic/Binder	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: % None Detected ND</b>
<b>Layer 2 of 3</b>	<b>Description:</b> Tan compressed fibrous material	Non-Fibrous Materials: Fine particles, Adhesive/Binder	Other Fibrous Materials:% Cellulose 98%	<b>Asbestos Type: % None Detected ND</b>
<b>Layer 3 of 3</b>	<b>Description:</b> Dark tan paper with adhesive	Non-Fibrous Materials: Fine particles, Adhesive/Binder	Other Fibrous Materials:% Cellulose 95%	<b>Asbestos Type: % None Detected ND</b>

**Lab ID: 15042753 Client Sample #: DH002A-043A**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 2</b>	<b>Description:</b> White wall vinyl with mastic	Non-Fibrous Materials: Vinyl/Binder, Mastic/Binder	Other Fibrous Materials:% Glass fibers 3%	<b>Asbestos Type: % None Detected ND</b>
<b>Layer 2 of 2</b>	<b>Description:</b> Yellow fibrous material	Non-Fibrous Materials: Fine particles	Other Fibrous Materials:% Glass fibers 98%	<b>Asbestos Type: % None Detected ND</b>

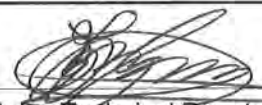
**Sampled by:** Client

**Analyzed by:** Nadezhda Prsyazhnyuk

**Reviewed by:** Nick Ly

**Date:** 05/04/2015

**Date:** 05/04/2015

  
 Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii.

**Batch #: 1507795.00**

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 30

Samples Analyzed: 30

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

**Lab ID: 15042754      Client Sample #: DH002A-043B**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 2</b>	<b>Description:</b> White wall vinyl with mastic Non-Fibrous Materials: Vinyl/Binder, Mastic/Binder	Other Fibrous Materials:% Glass fibers 5%	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 2 of 2</b>	<b>Description:</b> Yellow fibrous material Non-Fibrous Materials: Fine particles	Other Fibrous Materials:% Glass fibers 98%	<b>Asbestos Type: %</b> <b>None Detected ND</b>

**Lab ID: 15042755      Client Sample #: DH002A-043C**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 2</b>	<b>Description:</b> White wall vinyl with mastic Non-Fibrous Materials: Vinyl/Binder, Mastic/Binder	Other Fibrous Materials:% Glass fibers 2%	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 2 of 2</b>	<b>Description:</b> Yellow fibrous material Non-Fibrous Materials: Fine particles	Other Fibrous Materials:% Glass fibers 98%	<b>Asbestos Type: %</b> <b>None Detected ND</b>


**Lab ID: 15042756      Client Sample #: DH002A-044A**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 1</b>	<b>Description:</b> Trace gray skim coat material with red paint Non-Fibrous Materials: Fine particles, Binder/Filler, Paint	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
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**Lab ID: 15042757      Client Sample #: DH002A-044B**

Location: DOD Demo, Honolulu, Hawaii.

<b>Sampled by:</b> Client		
<b>Analyzed by:</b> Nadezhda Prysyzhnyuk	<b>Date:</b> 05/04/2015	 Nick Ly, Technical Director
<b>Reviewed by:</b> Nick Ly	<b>Date:</b> 05/04/2015	

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii.

**Batch #: 1507795.00**

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 30

Samples Analyzed: 30

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

<b>Layer 1 of 1</b>	<b>Description:</b> Trace gray skim coat material with red paint			
	Non-Fibrous Materials:	Other Fibrous Materials: %		<b>Asbestos Type: %</b>
	Fine particles, Binder/Filler, Paint	None Detected	ND	<b>None Detected ND</b>

**Lab ID: 15042758**      **Client Sample #: DH002A-044C**  
Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 1</b>	<b>Description:</b> Trace gray skim coat material with red paint			
	Non-Fibrous Materials:	Other Fibrous Materials: %		<b>Asbestos Type: %</b>
	Fine particles, Binder/Filler, Paint	None Detected	ND	<b>None Detected ND</b>

**Lab ID: 15042759**      **Client Sample #: DH002A-045A**  
Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 1</b>	<b>Description:</b> Red material			
	Non-Fibrous Materials:	Other Fibrous Materials: %		<b>Asbestos Type: %</b>
	Binder/Filler	Cellulose	<1%	<b>None Detected ND</b>

**Lab ID: 15042760**      **Client Sample #: DH002A-045B**  
Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 1</b>	<b>Description:</b> Red material			
	Non-Fibrous Materials:	Other Fibrous Materials: %		<b>Asbestos Type: %</b>
	Binder/Filler	Cellulose	<1%	<b>None Detected ND</b>
		Synthetic fibers	1%	

**Lab ID: 15042761**      **Client Sample #: DH002A-045C**  
Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 1</b>	<b>Description:</b> Red material with paper and trace paint			
	Non-Fibrous Materials:	Other Fibrous Materials: %		<b>Asbestos Type: %</b>
	Binder/Filler, Fine particles, Paint	Cellulose	30%	<b>None Detected ND</b>

**Sampled by:** Client

**Analyzed by:** Nadezhda Prysyzhnyuk

**Reviewed by:** Nick Ly

**Date:** 05/04/2015

**Date:** 05/04/2015

  
Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii.

Batch #: 1507795.00

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 30

Samples Analyzed: 30

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

**Lab ID: 15042762 Client Sample #: DH002A-046A**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 2</b>	<b>Description:</b> Multicolor woven fibrous material with mastic			
	Non-Fibrous Materials:	Other Fibrous Materials: %		<b>Asbestos Type: %</b>
	Fine particles, Mastic/Binder	Synthetic fibers 90%		<b>None Detected ND</b>
<b>Layer 2 of 2</b>	<b>Description:</b> Gray soft material with mastic			
	Non-Fibrous Materials:	Other Fibrous Materials: %		<b>Asbestos Type: %</b>
	Calcareous particles, Binder/Filler, Mastic/Binder	Glass fibers 7%		<b>None Detected ND</b>

**Lab ID: 15042763 Client Sample #: DH002A-046B**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 2</b>	<b>Description:</b> Multicolor woven fibrous material with mastic			
	Non-Fibrous Materials:	Other Fibrous Materials: %		<b>Asbestos Type: %</b>
	Fine particles, Mastic/Binder	Synthetic fibers 92%		<b>None Detected ND</b>
<b>Layer 2 of 2</b>	<b>Description:</b> Gray soft material with mastic			
	Non-Fibrous Materials:	Other Fibrous Materials: %		<b>Asbestos Type: %</b>
	Calcareous particles, Binder/Filler, Mastic/Binder	Glass fibers 9%		<b>None Detected ND</b>

**Lab ID: 15042764 Client Sample #: DH002A-046C**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 2</b>	<b>Description:</b> Multicolor woven fibrous material with mastic			
	Non-Fibrous Materials:	Other Fibrous Materials: %		<b>Asbestos Type: %</b>
	Fine particles, Mastic/Binder	Synthetic fibers 88%		<b>None Detected ND</b>
<b>Layer 2 of 2</b>	<b>Description:</b> Gray soft material with mastic			
	Non-Fibrous Materials:	Other Fibrous Materials: %		<b>Asbestos Type: %</b>
	Calcareous particles, Binder/Filler, Mastic/Binder	Glass fibers 8%		<b>None Detected ND</b>

**Sampled by:** Client

**Analyzed by:** Nadezhda Prsyazhnyuk

**Reviewed by:** Nick Ly

**Date:** 05/04/2015

**Date:** 05/04/2015

  
Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii.

**Batch #: 1507795.00**

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 30

Samples Analyzed: 30

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

**Lab ID: 15042765 Client Sample #: DH002A-047A**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 2</b>	<b>Description:</b> Dark brown brittle mastic		
	Non-Fibrous Materials: Mastic/Binder	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 2 of 2</b>	<b>Description:</b> Gray skim coat material with paint		
	Non-Fibrous Materials: Fine particles, Binder/Filler, Paint	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>

**Lab ID: 15042766 Client Sample #: DH002A-047B**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 2</b>	<b>Description:</b> Dark brown brittle mastic		
	Non-Fibrous Materials: Mastic/Binder	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 2 of 2</b>	<b>Description:</b> Gray skim coat material with paint		
	Non-Fibrous Materials: Fine particles, Binder/Filler, Paint	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>

**Lab ID: 15042767 Client Sample #: DH002A-047C**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 2</b>	<b>Description:</b> Dark brown brittle mastic		
	Non-Fibrous Materials: Mastic/Binder	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 2 of 2</b>	<b>Description:</b> Gray skim coat material with paint		
	Non-Fibrous Materials: Fine particles, Binder/Filler, Paint	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>

**Sampled by:** Client

**Analyzed by:** Nadezhda Prysyzhnyuk

**Reviewed by:** Nick Ly

**Date:** 05/04/2015

**Date:** 05/04/2015

  
Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii.

**Batch #: 1507795.00**

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 30

Samples Analyzed: 30

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

**Lab ID: 15042768 Client Sample #: DH002A-048A**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1 Description: Silver paint with red paint

Non-Fibrous Materials:

Metallic paint, Paint

Other Fibrous Materials: %

None Detected ND

**Asbestos Type: %**

**None Detected ND**

**Lab ID: 15042769 Client Sample #: DH002A-048B**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 2 Description: Silver paint

Non-Fibrous Materials:

Metallic paint

Other Fibrous Materials: %

None Detected ND

**Asbestos Type: %**

**None Detected ND**

Layer 2 of 2 Description: Black thin material with paint

Non-Fibrous Materials:

Binder/Filler, Paint

Other Fibrous Materials: %

None Detected ND

**Asbestos Type: %**

**None Detected ND**

**Lab ID: 15042770 Client Sample #: DH002A-048C**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1 Description: Black material with silver paint

Non-Fibrous Materials:

Binder/Filler, Metallic paint

Other Fibrous Materials: %

None Detected ND

**Asbestos Type: %**

**None Detected ND**

**Lab ID: 15042771 Client Sample #: DH002A-049A**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1 Description: White woven fibrous material with dark orange soft material

Non-Fibrous Materials:

Fine particles, Binder/Filler

Other Fibrous Materials: %

Synthetic fibers 30%

Glass fibers 25%

**Asbestos Type: %**

**None Detected ND**

**Sampled by:** Client

**Analyzed by:** Nadezhda Prysyzhnyuk

**Reviewed by:** Nick Ly

**Date:** 05/04/2015

**Date:** 05/04/2015

  
Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600

Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii.

**Batch #: 1507795.00**

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 30

Samples Analyzed: 30

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

**Lab ID: 15042772      Client Sample #: DH002A-049B**

Location: DOD Demo, Honolulu, Hawaii.

**Layer 1 of 1      Description:** White woven fibrous material with dark orange soft material

Non-Fibrous Materials:	Other Fibrous Materials: %
Fine particles, Binder/Filler	Synthetic fibers 27%
	Glass fibers 32%

**Asbestos Type: %  
None Detected ND**

**Lab ID: 15042773      Client Sample #: DH002A-049C**

Location: DOD Demo, Honolulu, Hawaii.

**Layer 1 of 1      Description:** White woven fibrous material with dark orange soft material

Non-Fibrous Materials:	Other Fibrous Materials: %
Fine particles, Binder/Filler	Synthetic fibers 20%
	Glass fibers 40%

**Asbestos Type: %  
None Detected ND**

**Sampled by:** Client

**Analyzed by:** Nadezhda Prsyazhnyuk

**Reviewed by:** Nick Ly

**Date:** 05/04/2015

**Date:** 05/04/2015

  
Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# ASBESTOS CHAIN OF CUSTODY

# 1507795

Turn Around Time  
 1 Hour     2 Days     5 Days  
 2 Hours     3 Days     10 Days  
 4 Hours  
 Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company AECOM  
 Address 1001 Bishop Street, Suite 1600  
Honolulu, Hawaii 96813  
 Phone (808) 954-4536

Project Manager Fletcher Kimura  
 Cell (808) 542-3752  
 Email fletcher.kimura@aecom.com  
 Fax (808) 523-8950

Project Name/Number 60340502.0500 Project Location DOD Demo, Honolulu, Hawaii

- PCM Air (NIOSH 7400)     TEM (NIOSH 7402)     TEM (AHERA)     TEM (EPA Level II Modified)
- PLM (EPA 600/R-93-116)     EPA 400 Points (600/R-93-116)     EPA 1000Points (600/R-93-116)
- PLM Gravimetry (600/R-93-116)     Asbestos in Vermiculite (EPA 600/R-04/004)     Asbestos in Sediment (EPA 1900 Points)
- Asbestos Friable/Non-Friable (EPA 600/R-93/116)     Other PLEASE STOP ON FIRST POSITIVE

Reporting Instructions Report to Fletcher Kimura. Please cc teresa.quiniola@aecom.com  
 Call ( ) -     Fax ( ) -     Email fletcher.kimura@aecom.com

Total Number of Samples 260

Sample ID	Description	A/R
1	DH002A-040A Type E 2'x4' Acoustic ceiling tile	
2	DH002A-040B Type E 2'x4' Acoustic ceiling tile	
3	DH002A-040C Type E 2'x4' Acoustic ceiling tile	
4	DH002A-041A Door frame caulk	
5	DH002A-041B Door frame caulk	
6	DH002A-041C Door frame caulk	
7	DH002A-042A Partition wall	
8	DH002A-042B Partition wall	
9	DH002A-042C Partition wall	
10	DH002A-043A Type F 2'x4' Acoustic ceiling tile	
11	DH002A-043B Type F 2'x4' Acoustic ceiling tile	
12	DH002A-043C Type F 2'x4' Acoustic ceiling tile	
13	DH002A-044A Red skim coat	
14	DH002A-044B Red skim coat	
15	DH002A-044C Red skim coat	

	Print Name	Signature	Company	Date	Time
Sampled by	Fletcher Kimura and Ryan Shinmoto		AECOM	4/17, 4/21/15	--
Relinquish by	Fletcher Kimura		AECOM	4/29/15	11:00 am

**Office Use Only**

	Print Name	Signature	Company	Date	Time
Received by			NVL Labs	4/30/15	9:15am
Analyzed by	Nadilo		NVL	5/4/15	10:20AM
Called by					
Faxed/Email by					





# ASBESTOS CHAIN OF CUSTODY

# 1507795

Turn Around Time

- 1 Hour       24 Hours       4 Days
- 2 Hours       2 Days       5 Days
- 4 Hours       3 Days       10 Days

Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company AECOM  
 Address 1001 Bishop Street, Suite 1600  
Honolulu, Hawaii 96813  
 Phone (808) 954-4536

Project Manager Fletcher Kimura  
 Cell ( 808 ) 542 - 3752  
 Email fletcher.kimura@aecom.com  
 Fax ( 808 ) 523 - 8950

Project Name/Number 60340502.0500 Project Location DOD Demo, Honolulu, Hawaii

- PCM Air (NIOSH 7400)       TEM (NIOSH 7402)       TEM (AHERA)       TEM (EPA Level II Modified)
- PLM (EPA 600/R-93-116)       EPA 400 Points (600/R-93-116)       EPA 1000Points (600/R-93-116)
- PLM Gravimetry (600/R-93-116)       Asbestos in Vermiculite (EPA 600/R-04/004)       Asbestos in Sediment (EPA 1900 Points)
- Asbestos Friable/Non-Friable (EPA 600/R-93/116)       Other PLEASE STOP ON FIRST POSITIVE

Reporting Instructions Report to Fletcher Kimura. Please cc teresa.quiniola@aecom.com  
 Call (      )       Fax (      )       Email fletcher.kimura@aecom.com

Total Number of Samples 260

Sample ID	Description	A/R
1	DH002A-045A Residual caulking	
2	DH002A-045B Residual caulking	
3	DH002A-045C Residual caulking	
4	DH002A-046A Carpet and glue	
5	DH002A-046B Carpet and glue	
6	DH002A-046C Carpet and glue	
7	DH002A-047A Brown mastic	
8	DH002A-047B Brown mastic	
9	DH002A-047C Brown mastic	
10	DH002A-048A Silver paint on compressors	
11	DH002A-048B Silver paint on compressors	
12	DH002A-048C Silver paint on compressors	
13	DH002A-049A Orange vacuum hose	
14	DH002A-049B Orange vacuum hose	
15	DH002A-049C Orange vacuum hose	

	Print Name	Signature	Company	Date	Time
Sampled by	Fletcher Kimura and Ryan Shinmoto		AECOM	4/16, 4/17, 4/24/15	--
Relinquish by	Fletcher Kimura		AECOM	4/29/15	11:00 am

Office Use Only

	Print Name	Signature	Company	Date	Time
Received by	<u>John Martin</u>		<u>NVL Labs</u>	<u>4/30/15</u>	<u>5:50 AM</u>
Analyzed by	<u>Nadie</u>		<u>NVL</u>	<u>5/14/15</u>	<u>10:20 AM</u>
Called by					
Faxed/Email by					



May 1, 2015

Fletcher Kimura  
**AECOM**  
1001 Bishop Street, Suite 1600  
Honolulu, HI 96813



Laboratory | Management | Training

**RE: Bulk Asbestos Fiber Analysis, NVL Batch # 1507796.00**

Dear Mr. Kimura,

Enclosed please find test results for the bulk samples submitted to our laboratory for analysis. Examination of these samples was conducted for the presence of identifiable asbestos fibers using polarized light microscopy (PLM) with dispersion staining in accordance with both U.S. EPA 600/M4-82-020, Interim Method for Determination of Asbestos in Bulk Insulation Samples, as found in 40 CFR, Part 763, Subpart E, Appendix E (formerly Subpart F, Appendix A), and U.S. EPA 600/R-93/116 (July 1993) Test Methods.

For samples containing more than one separable layer of materials, the report will include findings for each layer (labeled Layer 1 and Layer 2, etc. for each individual layer). The asbestos concentration in the sample is determined by visual estimation.

For those samples with asbestos concentrations between 1 and 10 percent based on visual estimation, the EPA recommends a procedure known as point counting (NESHAPS, 40 CFR Part 61). Point counting is a statistically more accurate means of quantification for samples with low concentrations of asbestos. If you would like us to further refine the concentration estimates of asbestos in these samples using point counting, please let me know.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. Please do not hesitate to call if there is anything further we can assist you with.

Sincerely,

A handwritten signature in black ink, appearing to read "Nick Ly".

Nick Ly, Technical Director



Lab Code: 102063-0

**1.888.NVL.LABS**  
**1.888.(685.5227)**  
www.nvllabs.com

Enc.: Sample Results

NVL Laboratories, Inc.  
4708 Aurora Ave N, Seattle, WA 98103  
p 206.547.0100 | f 206.634.1936

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii.

Batch #: 1507796.00

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 41

Samples Analyzed: 39

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

**Lab ID: 15042774**      **Client Sample #: DH002A-050A**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Tan fibrous material

Non-Fibrous Materials:  
Binder/Filler

Other Fibrous Materials:%  
Cellulose 70%

**Asbestos Type: %**  
**None Detected ND**

**Lab ID: 15042775**      **Client Sample #: DH002A-050B**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Tan fibrous material

Non-Fibrous Materials:  
Binder/Filler, Fine particles

Other Fibrous Materials:%  
Cellulose 65%  
Synthetic fibers 1%

**Asbestos Type: %**  
**None Detected ND**

**Lab ID: 15042776**      **Client Sample #: DH002A-050C**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Tan fibrous material

Non-Fibrous Materials:  
Binder/Filler

Other Fibrous Materials:%  
Cellulose 68%

**Asbestos Type: %**  
**None Detected ND**

**Lab ID: 15042777**      **Client Sample #: DH002A-051A**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: White/gray soft mastic with paint

Non-Fibrous Materials:  
Mastic/Binder, Paint

Other Fibrous Materials:%  
Cellulose 2%

**Asbestos Type: %**  
**None Detected ND**

**Lab ID: 15042778**      **Client Sample #: DH002A-051B**

Location: DOD Demo, Honolulu, Hawaii.

**Sampled by:** Client

**Analyzed by:** Lori Tseng

**Reviewed by:** Nick Ly

**Date:** 05/01/2015

**Date:** 05/01/2015

  
Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii.

Batch #: 1507796.00

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 41

Samples Analyzed: 39

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

Layer 1 of 1 Description: Gray/white soft mastic with paper

Non-Fibrous Materials:	Other Fibrous Materials:%
Binder/Filler, Mastic/Binder	Cellulose 13%
	Synthetic fibers 2%

Asbestos Type: %  
None Detected ND

Lab ID: 15042779 Client Sample #: DH002A-051C

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1 Description: Gray soft mastic

Non-Fibrous Materials:	Other Fibrous Materials:%
Mastic/Binder, Metal	Cellulose 2%

Asbestos Type: %  
None Detected ND

Lab ID: 15042780 Client Sample #: DH002A-052A

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1 Description: White fibrous material with green paint

Non-Fibrous Materials:	Other Fibrous Materials:%
Binder/Filler, Paint	Synthetic fibers 60%

Asbestos Type: %  
None Detected ND

Lab ID: 15042781 Client Sample #: DH002A-052B

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1 Description: White fibrous material with blue paint

Non-Fibrous Materials:	Other Fibrous Materials:%
Binder/Filler, Paint	Synthetic fibers 61%
	Cellulose 3%

Asbestos Type: %  
None Detected ND

Lab ID: 15042782 Client Sample #: DH002A-052C

Location: DOD Demo, Honolulu, Hawaii.

Sampled by: Client

Analyzed by: Lori Tseng

Reviewed by: Nick Ly

Date: 05/01/2015

Date: 05/01/2015

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii.

Batch #: 1507796.00

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 41

Samples Analyzed: 39

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

Layer 1 of 1 Description: White fibrous material with green paint

Non-Fibrous Materials:  
Binder/Filler, Paint

Other Fibrous Materials:%  
Synthetic fibers 61%  
Cellulose 2%

Asbestos Type: %  
None Detected ND

Lab ID: 15042783 Client Sample #: DH002A-053A

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1 Description: Gray sandy/brittle material with paint

Non-Fibrous Materials:  
Sand, Binder/Filler, Paint  
Mineral grains

Other Fibrous Materials:%  
Cellulose 2%

Asbestos Type: %  
None Detected ND

Lab ID: 15042784 Client Sample #: DH002A-053B

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1 Description: Gray brittle material with paint

Non-Fibrous Materials:  
Binder/Filler, Paint, Fine grains

Other Fibrous Materials:%  
Cellulose 2%  
Synthetic fibers <1%

Asbestos Type: %  
None Detected ND

Lab ID: 15042785 Client Sample #: DH002A-053C

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1 Description: Gray brittle material with paint

Non-Fibrous Materials:  
Binder/Filler, Paint, Fine grains

Other Fibrous Materials:%  
None Detected ND

Asbestos Type: %  
None Detected ND

Lab ID: 15042786 Client Sample #: DH002A-053D

Location: DOD Demo, Honolulu, Hawaii.

Comments: No concrete present.

Sampled by: Client

Analyzed by: Lori Tseng

Reviewed by: Nick Ly

Date: 05/01/2015

Date: 05/01/2015

Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii.

Batch #: 1507796.00

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 41

Samples Analyzed: 39

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

Layer 1 of 1	Description: Tan/green paint with debris			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Paint/Binder, Miscellaneous particles	Cellulose 2%		None Detected ND
		Spider silk 1%		

Lab ID: 15042787 Client Sample #: DH002A-053E

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1	Description: Green/white paint			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Paint, Binder/Filler	Cellulose 2%		None Detected ND

Lab ID: 15042788 Client Sample #: DH002A-053F

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1	Description: Gray sandy/brittle material with paint			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Binder/Filler, Sand, Paint	Cellulose 3%		None Detected ND
	Calcareous particles	Spider silk 2%		

Lab ID: 15042789 Client Sample #: DH002A-053G

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1	Description: Gray brittle material with tan paint and debris			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Binder/Filler, Paint, Miscellaneous particles	Cellulose 2%		None Detected ND
		Spider silk 1%		

Lab ID: 15042790 Client Sample #: DH002A-054A

Location: DOD Demo, Honolulu, Hawaii.

Sampled by: Client		
Analyzed by: Lori Tseng	Date: 05/01/2015	
Reviewed by: Nick Ly	Date: 05/01/2015	Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii.

**Batch #: 1507796.00**

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 41

Samples Analyzed: 39

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

<b>Layer 1 of 1</b>	<b>Description:</b> Gray brittle caulking material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>Asbestos Type: %</b>
	Binder/Filler, Putty Compound	Cellulose 2%		<b>None Detected ND</b>

**Lab ID: 15042791**      **Client Sample #: DH002A-054B**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 1</b>	<b>Description:</b> Gray brittle caulking material with fibrous mesh			
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>Asbestos Type: %</b>
	Putty Compound, Binder/Filler, Fine particles/Binder	Cellulose 4%		<b>None Detected ND</b>
		Spider silk 2%		

**Lab ID: 15042792**      **Client Sample #: DH002A-054C**

Location: DOD Demo, Honolulu, Hawaii.


<b>Layer 1 of 1</b>	<b>Description:</b> White putty material with gray surface			
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>Asbestos Type: %</b>
	Putty Compound, Binder/Filler	Cellulose 2%		<b>Chrysotile 3%</b>

**Lab ID: 15042793**      **Client Sample #: DH002A-055A**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 1</b>	<b>Description:</b> Gray putty material with paint and paper			
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>Asbestos Type: %</b>
	Putty Compound, Paint, Binder/Filler	Cellulose 20%		<b>Chrysotile 2%</b>

**Lab ID: 15042794**      **Client Sample #: DH002A-055B**      **Sample Status: Not Analyzed**

<b>Sampled by:</b> Client		
<b>Analyzed by:</b> Lori Tseng	<b>Date:</b> 05/01/2015	
<b>Reviewed by:</b> Nick Ly	<b>Date:</b> 05/01/2015	Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii.

**Batch #: 1507796.00**

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 41

Samples Analyzed: 39

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

**Lab ID: 15042795      Client Sample #: DH002A-055C      Sample Status:      Not Analyzed**

**Lab ID: 15042796      Client Sample #: DH002A-056A**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 2	Description: Orange foamy material	Non-Fibrous Materials: Synthetic foam	Other Fibrous Materials:% None Detected    ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
Layer 2 of 2	Description: Trace gray brittle material with paint	Non-Fibrous Materials: Binder/Filler, Paint, Sand	Other Fibrous Materials:% Cellulose    2%	<b>Asbestos Type: %</b> <b>None Detected ND</b>

**Lab ID: 15042797      Client Sample #: DH002A-056B**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1	Description: Orange foamy material	Non-Fibrous Materials: Synthetic foam	Other Fibrous Materials:% None Detected    ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
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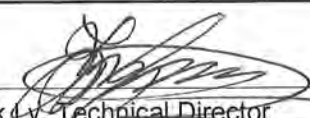
**Lab ID: 15042798      Client Sample #: DH002A-056C**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1	Description: Orange foamy material	Non-Fibrous Materials: Synthetic foam	Other Fibrous Materials:% None Detected    ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
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**Lab ID: 15042799      Client Sample #: DH002A-057A**

Location: DOD Demo, Honolulu, Hawaii.

<p><b>Sampled by:</b> Client</p> <p><b>Analyzed by:</b> Lori Tseng</p> <p><b>Reviewed by:</b> Nick Ly</p>	<p><b>Date:</b> 05/01/2015</p> <p><b>Date:</b> 05/01/2015</p>	 <p>Nick Ly, Technical Director</p>
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Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii.

**Batch #: 1507796.00**

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 41

Samples Analyzed: 39

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

<b>Layer 1 of 1</b>	<b>Description:</b> Black brittle mastic with paint			<b>Asbestos Type: %</b>
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>None Detected ND</b>
	Mastic/Binder, Paint, Fine grains	Cellulose 2%		

**Lab ID: 15042800 Client Sample #: DH002A-057B**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 1</b>	<b>Description:</b> Black brittle mastic with paint			<b>Asbestos Type: %</b>
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>None Detected ND</b>
	Mastic/Binder, Paint, Fine grains	Cellulose 1%		

**Lab ID: 15042801 Client Sample #: DH002A-057C**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 1</b>	<b>Description:</b> Black soft mastic with paint			<b>Asbestos Type: %</b>
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>None Detected ND</b>
	Mastic/Binder, Paint, Fine grains	Cellulose 2%		

**Lab ID: 15042802 Client Sample #: DH002A-058A**

Location: DOD Demo, Honolulu, Hawaii.


<b>Layer 1 of 1</b>	<b>Description:</b> Silver flakey paint			<b>Asbestos Type: %</b>
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>None Detected ND</b>
	Metallic paint, Fine grains	Cellulose 3%		

**Lab ID: 15042803 Client Sample #: DH002A-058B**

Location: DOD Demo, Honolulu, Hawaii.

Comments: Unable to analyze silver paint as a separate layer

<b>Layer 1 of 1</b>	<b>Description:</b> Silver/green paint with rusted material			<b>Asbestos Type: %</b>
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>None Detected ND</b>
	Paint, Metallic paint, Metal	Cellulose 1%		

<p><b>Sampled by:</b> Client</p> <p><b>Analyzed by:</b> Lori Tseng</p> <p><b>Reviewed by:</b> Nick Ly</p>	<p><b>Date:</b> 05/01/2015</p> <p><b>Date:</b> 05/01/2015</p>	 <p>Nick Ly, Technical Director</p>
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Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii.

**Batch #: 1507796.00**

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 41

Samples Analyzed: 39

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

**Lab ID: 15042804      Client Sample #: DH002A-058C**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Silver paint

Non-Fibrous Materials:  
Metallic paint, Fine grains

Other Fibrous Materials:%  
Cellulose    2%

**Asbestos Type: %**  
**None Detected ND**

**Lab ID: 15042805      Client Sample #: DH002A-058D**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Silver paint with rusted material

Non-Fibrous Materials:  
Metallic paint, Fine grains, Metal

Other Fibrous Materials:%  
Cellulose    3%

**Asbestos Type: %**  
**None Detected ND**

**Lab ID: 15042806      Client Sample #: DH002A-058E**

Location: DOD Demo, Honolulu, Hawaii.

Comments: Unable to analyze silver paint as a separate layer

Layer 1 of 1      Description: Silver/gray paint

Non-Fibrous Materials:  
Metallic paint, Paint/Binder

Other Fibrous Materials:%  
Cellulose    2%

**Asbestos Type: %**  
**None Detected ND**

**Lab ID: 15042807      Client Sample #: DH002A-059A**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: White/tan woven fibrous material

Non-Fibrous Materials:  
Binder/Filler

Other Fibrous Materials:%  
Synthetic fibers    65%

**Asbestos Type: %**  
**None Detected ND**

**Lab ID: 15042808      Client Sample #: DH002A-059B**

Location: DOD Demo, Honolulu, Hawaii.

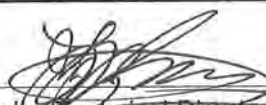
**Sampled by:** Client

**Analyzed by:** Lori Tseng

**Reviewed by:** Nick Ly

**Date:** 05/01/2015

**Date:** 05/01/2015

  
 Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Batch #: 1507796.00**

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 41

Samples Analyzed: 39

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 1</b>	<b>Description:</b> White/tan woven fibrous material			<b>Asbestos Type: %</b>
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>None Detected ND</b>
	Binder/Filler	Synthetic fibers 60%		

**Lab ID: 15042809 Client Sample #: DH002A-059C**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 1</b>	<b>Description:</b> White/tan woven fibrous material with debris			<b>Asbestos Type: %</b>
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>None Detected ND</b>
	Binder/Filler, Wood flakes	Synthetic fibers 61%		
		Wood fibers 4%		

**Lab ID: 15042810 Client Sample #: DH002A-060A**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 1</b>	<b>Description:</b> White/green soft paint			<b>Asbestos Type: %</b>
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>None Detected ND</b>
	Paint/Binder, Binder/Filler	Cellulose 2%		

**Lab ID: 15042811 Client Sample #: DH002A-060B**

Location: DOD Demo, Honolulu, Hawaii.

Comments: Unable to analyze silver paint as a separate layer

<b>Layer 1 of 1</b>	<b>Description:</b> White/silver paint			<b>Asbestos Type: %</b>
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>None Detected ND</b>
	Paint/Binder, Metallic paint	Cellulose 1%		

**Lab ID: 15042812 Client Sample #: DH002A-060C**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 1</b>	<b>Description:</b> White/green soft paint			<b>Asbestos Type: %</b>
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>None Detected ND</b>
	Paint/Binder, Fine grains	Cellulose 2%		

**Sampled by:** Client

**Analyzed by:** Lori Tseng

**Reviewed by:** Nick Ly

**Date:** 05/01/2015

**Date:** 05/01/2015

  
Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii.

Batch #: 1507796.00

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 41

Samples Analyzed: 39

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

Lab ID: 15042813 Client Sample #: DH002A-060D

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1 Description: White/green soft paint

Non-Fibrous Materials:  
Paint/Binder, Fine grains

Other Fibrous Materials:%  
Cellulose 1%

Asbestos Type: %  
None Detected ND

Lab ID: 15042814 Client Sample #: DH002A-060E

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1 Description: Gray paint with white powdery material

Non-Fibrous Materials:  
Calcareous particles, Paint, Binder/Filler

Other Fibrous Materials:%  
Cellulose 2%

Asbestos Type: %  
None Detected ND

Sampled by: Client

Analyzed by: Lori Tseng

Reviewed by: Nick Ly

Date: 05/01/2015

Date: 05/01/2015

  
Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government





# ASBESTOS CHAIN OF CUSTODY

# 1507796

Turn Around Time  
 1 Hour     2 Hours     4 Hours  
 2 Days     5 Days     10 Days  
 Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company AECOM  
 Address 1001 Bishop Street, Suite 1600  
Honolulu, Hawaii 96813  
 Phone (808) 954-4536

Project Manager Fletcher Kimura  
 Cell ( 808 ) 542 - 3752  
 Email fletcher.kimura@aecom.com  
 Fax ( 808 ) 523 - 8950

Project Name/Number 60340502.0500 Project Location DOD Demo, Honolulu, Hawaii

- PCM Air (NIOSH 7400)     TEM (NIOSH 7402)     TEM (AHERA)     TEM (EPA Level II Modified)
- PLM (EPA 600/R-93-116)     EPA 400 Points (600/R-93-116)     EPA 1000Points (600/R-93-116)
- PLM Gravimetry (600/R-93-116)     Asbestos in Vermiculite (EPA 600/R-04/004)     Asbestos in Sediment (EPA 1900 Points)
- Asbestos Friable/Non-Friable (EPA 600/R-93/116)     Other PLEASE STOP ON FIRST POSITIVE

Reporting Instructions Report to Fletcher Kimura. Please cc teresa.quiniola@aecom.com  
 Call (    )     Fax (    )     Email fletcher.kimura@aecom.com

**Total Number of Samples** 260

Sample ID	Description	A/R
1	DH002A-050A Fire proofing 17	
2	DH002A-050B Fire proofing	
3	DH002A-050C Fire proofing	
4	DH002A-051A White and gray mastic 17	
5	DH002A-051B White and gray mastic	
6	DH002A-051C White and gray mastic	
7	DH002A-052A Paint filters 17	
8	DH002A-052B Paint filters	
9	DH002A-052C Paint filters	
10	DH002A-053A Exterior paint on concrete and brick 17	
11	DH002A-053B Exterior paint on concrete and brick	
12	DH002A-053C Exterior paint on concrete and brick	
13	DH002A-053D Exterior paint on concrete and brick	
14	DH002A-053E Exterior paint on concrete and brick	
15	DH002A-053F Exterior paint on concrete and brick	

	Print Name	Signature	Company	Date	Time
Sampled by	Fletcher Kimura and Ryan Shinmoto		AECOM	4/17/15	--
Relinquish by	Fletcher Kimura		AECOM	4/29/15	11:00 am

**Office Use Only**

	Print Name	Signature	Company	Date	Time
Received by	<u>Fatinmotta</u>		<u>Nvllabs</u>	<u>4/30/15</u>	<u>9:25 am</u>
Analyzed by	<u>LDN TSONG</u>		<u>NV</u>	<u>5/11/15</u>	<u>1151</u>
Called by					
Faxed/Email by					



# ASBESTOS CHAIN OF CUSTODY

# 1507796

Turn Around Time

- 1 Hour
- 2 Hours
- 4 Hours
- 24 Hours
- 2 Days
- 3 Days
- 5 Days
- 10 Days

Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company AECOM  
 Address 1001 Bishop Street, Suite 1600  
Honolulu, Hawaii 96813  
 Phone (808) 954-4536

Project Manager Fletcher Kimura  
 Cell ( 808 ) 542 - 3752  
 Email fletcher.kimura@aecom.com  
 Fax ( 808 ) 523 - 8950

Project Name/Number 60340502.0500 Project Location DOD Demo, Honolulu, Hawaii

- PCM Air (NIOSH 7400)
- PLM (EPA 600/R-93-116)
- PLM Gravimetry (600/R-93-116)
- Asbestos Friable/Non-Friable (EPA 600/R-93/116)
- TEM (NIOSH 7402)
- EPA 400 Points (600/R-93-116)
- Asbestos in Vermiculite (EPA 600/R-04/004)
- Other PLEASE STOP ON FIRST POSITIVE
- TEM (AHERA)
- EPA 1000Points (600/R-93-116)
- Asbestos in Sediment (EPA 1900 Points)

Reporting Instructions Report to Fletcher Kimura. Please cc teresa.quiniola@aecom.com  
 Call ( ) -  Fax ( ) -  Email fletcher.kimura@aecom.com

Total Number of Samples 260

Sample ID	Description	A/R
1	DH002A-053G Exterior paint on concrete and brick	
2	DH002A-054A Gray exterior window caulk	
3	DH002A-054B Gray exterior window caulk	
4	DH002A-054C Gray exterior window caulk	
5	DH002A-055A Exterior window frame caulk	
6	DH002A-055B Exterior window frame caulk	
7	DH002A-055C Exterior window frame caulk	
8	DH002A-056A Orange foam filler	
9	DH002A-056B Orange foam filler	
10	DH002A-056C Orange foam filler	
11	DH002A-057A Exterior rivet mastic from main structure	
12	DH002A-057B Exterior rivet mastic from main structure	
13	DH002A-057C Exterior rivet mastic from main structure	
14	DH002A-058A Silver interior paint from woodshop	
15	DH002A-058B Silver interior paint from woodshop	

	Print Name	Signature	Company	Date	Time
Sampled by	Fletcher Kimura and Ryan Shinmoto		AECOM	4/17, 4/21/15	--
Relinquish by	Fletcher Kimura		AECOM	4/29/15	11:00 am

Office Use Only

	Print Name	Signature	Company	Date	Time
Received by	<u>Antonette</u>		<u>nvl labs</u>	<u>4/30/15</u>	<u>9:55 a.m.</u>
Analyzed by	<u>Lon Tseng</u>		<u>NV</u>	<u>5/11/15</u>	<u>1/51</u>
Called by					
Faxed/Email by					





# ASBESTOS CHAIN OF CUSTODY

# 1507796

Turn Around Time  
 1 Hour     24 Hours     4 Days  
 2 Hours     2 Days     5 Days  
 4 Hours     3 Days     10 Days  
 Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company AECOM  
 Address 1001 Bishop Street, Suite 1600  
Honolulu, Hawaii 96813  
 Phone (808) 954-4536

Project Manager Fletcher Kimura  
 Cell ( 808 ) 542 - 3752  
 Email fletcher.kimura@aecom.com  
 Fax ( 808 ) 523 - 8950

Project Name/Number 60340502.0500 Project Location DOD Demo, Honolulu, Hawaii

- PCM Air (NIOSH 7400)     TEM (NIOSH 7402)     TEM (AHERA)     TEM (EPA Level II Modified)
- PLM (EPA 600/R-93-116)     EPA 400 Points (600/R-93-116)     EPA 1000Points (600/R-93-116)
- PLM Gravimetry (600/R-93-116)     Asbestos in Vermiculite (EPA 600/R-04/004)     Asbestos in Sediment (EPA 1900 Points)
- Asbestos Friable/Non-Friable (EPA 600/R-93/116)     Other PLEASE STOP ON FIRST POSITIVE

Reporting Instructions Report to Fletcher Kimura. Please cc teresa.quiniola@aecom.com  
 Call (    )     Fax (    )     Email fletcher.kimura@aecom.com

**Total Number of Samples** 260

	Sample ID	Description	A/R
1	DH002A-058C	Silver interior paint from woodshop	
2	DH002A-058D	Silver interior paint from woodshop	
3	DH002A-058E	Silver interior paint from woodshop	
4	DH002A-059A	Dust collector bag	
5	DH002A-059B	Dust collector bag	
6	DH002A-059C	Dust collector bag	
7	DH002A-060A	Exterior paint on metal from woodshop	
8	DH002A-060B	Exterior paint on metal from woodshop	
9	DH002A-060C	Exterior paint on metal from woodshop	
10	DH002A-060D	Exterior paint on metal from woodshop	
11	DH002A-060E	Exterior paint on metal from woodshop	
12			
13			
14			
15			

	Print Name	Signature	Company	Date	Time
Sampled by	Fletcher Kimura and Ryan Shinmoto		AECOM	4/21/15	--
Relinquish by	Fletcher Kimura		AECOM	4/29/15	11:00 am

**Office Use Only**

	Print Name	Signature	Company	Date	Time
Received by	<u>Schmatta</u>		<u>nvl labs</u>	<u>4/30/15</u>	<u>9:15 am fedex</u>
Analyzed by	<u>Loi Tseag</u>		<u>NV</u>	<u>5/1/15</u>	<u>11:51</u>
Called by					
Faxed/Email by					



May 4, 2015

Fletcher Kimura  
**AECOM**  
1001 Bishop Street, Suite 1600  
Honolulu, HI 96813



INDUSTRIAL  
HYGIENE  
SERVICES

Laboratory | Management | Training

**RE: Bulk Asbestos Fiber Analysis, NVL Batch # 1507798.00**

Dear Mr. Kimura,

Enclosed please find test results for the bulk samples submitted to our laboratory for analysis. Examination of these samples was conducted for the presence of identifiable asbestos fibers using polarized light microscopy (PLM) with dispersion staining in accordance with both U.S. EPA 600/M4-82-020, Interim Method for Determination of Asbestos in Bulk Insulation Samples, as found in 40 CFR, Part 763, Subpart E, Appendix E (formerly Subpart F, Appendix A), and U.S. EPA 600/R-93/116 (July 1993) Test Methods.

For samples containing more than one separable layer of materials, the report will include findings for each layer (labeled Layer 1 and Layer 2, etc. for each individual layer). The asbestos concentration in the sample is determined by visual estimation.

For those samples with asbestos concentrations between 1 and 10 percent based on visual estimation, the EPA recommends a procedure known as point counting (NESHAPS, 40 CFR Part 61). Point counting is a statistically more accurate means of quantification for samples with low concentrations of asbestos. If you would like us to further refine the concentration estimates of asbestos in these samples using point counting, please let me know.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. Please do not hesitate to call if there is anything further we can assist you with.

Sincerely,

A handwritten signature in black ink, appearing to read "Nick Ly", written over a white rectangular area.

Nick Ly, Technical Director



Lab Code: 102063-0

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii.

Batch #: 1507798.00

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 30

Samples Analyzed: 29

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

**Lab ID: 15042817**      **Client Sample #: DH002A-061A**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Gray brittle material

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
Putty Compound, Fine particles	Cellulose 2%	<b>None Detected ND</b>
	Spider silk 1%	

**Lab ID: 15042818**      **Client Sample #: DH002A-061B**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Light gray brittle material

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
Putty Compound, Fine particles	Cellulose 2%	<b>Chrysotile 2%</b>

**Lab ID: 15042819**      **Client Sample #: DH002A-061C**

**Sample Status: Not Analyzed**

**Lab ID: 15042820**      **Client Sample #: DH002A-062A**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Black/white brittle material

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
Binder/Filler, Paint	Synthetic fibers <1%	<b>None Detected ND</b>

**Lab ID: 15042821**      **Client Sample #: DH002A-062B**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Black/white brittle material

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
Binder/Filler, Paint	None Detected ND	<b>None Detected ND</b>

**Sampled by:** Client

**Analyzed by:** Jason J. Stuhr

**Reviewed by:** Nick Ly

**Date:** 05/04/2015

**Date:** 05/04/2015

  
Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii.

Batch #: 1507798.00

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 30

Samples Analyzed: 29

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

**Lab ID: 15042822**      **Client Sample #: DH002A-062C**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Gray soft material

Non-Fibrous Materials:

Binder/Filler, Paint

Other Fibrous Materials: %

None Detected    ND

**Asbestos Type: %**

**None Detected ND**

**Lab ID: 15042823**      **Client Sample #: DH002A-063A**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Green/cream brittle material

Non-Fibrous Materials:

Paint/Binder, Fine particles

Other Fibrous Materials: %

None Detected    ND

**Asbestos Type: %**

**None Detected ND**

**Lab ID: 15042824**      **Client Sample #: DH002A-063B**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Green/cream brittle material

Non-Fibrous Materials:

Paint/Binder, Fine particles

Other Fibrous Materials: %

Cellulose    2%

**Asbestos Type: %**

**None Detected ND**

**Lab ID: 15042825**      **Client Sample #: DH002A-063C**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Green/cream brittle material

Non-Fibrous Materials:

Paint/Binder, Fine particles

Other Fibrous Materials: %

None Detected    ND

**Asbestos Type: %**

**None Detected ND**

**Lab ID: 15042826**      **Client Sample #: DH002A-063D**

Location: DOD Demo, Honolulu, Hawaii.

**Sampled by:** Client

**Analyzed by:** Jason J. Stuhr

**Reviewed by:** Nick Ly

**Date:** 05/04/2015

**Date:** 05/04/2015

Nick Ly, Technical Director 

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii.

**Batch #: 1507798.00**

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 30

Samples Analyzed: 29

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

<b>Layer 1 of 1</b>	<b>Description:</b> Green/cream brittle material			
	Non-Fibrous Materials:	Other Fibrous Materials: %		<b>Asbestos Type: %</b>
	Paint/Binder, Fine particles	Cellulose 2%		<b>None Detected ND</b>

**Lab ID: 15042827**      **Client Sample #: DH002A-063E**  
Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 1</b>	<b>Description:</b> Cream/green/gray brittle material			
	Non-Fibrous Materials:	Other Fibrous Materials: %		<b>Asbestos Type: %</b>
	Paint/Binder, Insect parts, Miscellaneous particles	Spider silk 2%		<b>None Detected ND</b>

**Lab ID: 15042828**      **Client Sample #: DH002A-063F**  
Location: DOD Demo, Honolulu, Hawaii.


<b>Layer 1 of 1</b>	<b>Description:</b> Cream/green brittle material			
	Non-Fibrous Materials:	Other Fibrous Materials: %		<b>Asbestos Type: %</b>
	Paint/Binder, Miscellaneous particles	None Detected ND		<b>None Detected ND</b>

**Lab ID: 15042829**      **Client Sample #: DH002A-063G**  
Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 1</b>	<b>Description:</b> Cream/green brittle material			
	Non-Fibrous Materials:	Other Fibrous Materials: %		<b>Asbestos Type: %</b>
	Paint/Binder, Miscellaneous particles	Cellulose 2%		<b>None Detected ND</b>

**Lab ID: 15042830**      **Client Sample #: DH002A-064A**  
Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 1</b>	<b>Description:</b> Cream thin brittle material			
	Non-Fibrous Materials:	Other Fibrous Materials: %		<b>Asbestos Type: %</b>
	Paint/Binder	None Detected ND		<b>None Detected ND</b>

<b>Sampled by:</b> Client		
<b>Analyzed by:</b> Jason J. Stuhr	<b>Date:</b> 05/04/2015	 Nick Ly, Technical Director
<b>Reviewed by:</b> Nick Ly	<b>Date:</b> 05/04/2015	

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii.

Batch #: 1507798.00

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 30

Samples Analyzed: 29

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

**Lab ID: 15042831**      **Client Sample #: DH002A-064B**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Cream/green thin brittle material

Non-Fibrous Materials:

Paint/Binder

Other Fibrous Materials: %

None Detected    ND

**Asbestos Type: %**

**None Detected ND**

**Lab ID: 15042832**      **Client Sample #: DH002A-064C**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Cream/green thin brittle material

Non-Fibrous Materials:

Paint/Binder

Other Fibrous Materials: %

Cellulose    2%

**Asbestos Type: %**

**None Detected ND**

**Lab ID: 15042833**      **Client Sample #: DH002A-065A**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Black soft material with paint

Non-Fibrous Materials:

Binder/Filler, Paint, Miscellaneous particles

Other Fibrous Materials: %

Cellulose    2%

**Asbestos Type: %**

**None Detected ND**

**Lab ID: 15042834**      **Client Sample #: DH002A-065B**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Black soft material with paint

Non-Fibrous Materials:

Binder/Filler, Paint, Miscellaneous particles

Other Fibrous Materials: %

None Detected    ND

**Asbestos Type: %**

**None Detected ND**

**Lab ID: 15042835**      **Client Sample #: DH002A-065C**

Location: DOD Demo, Honolulu, Hawaii.

**Sampled by:** Client

**Analyzed by:** Jason J. Stuhr

**Reviewed by:** Nick Ly

**Date:** 05/04/2015

**Date:** 05/04/2015

Nick Ly  Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii.

**Batch #: 1507798.00**

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 30

Samples Analyzed: 29

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

<b>Layer 1 of 1</b>	<b>Description:</b> Black soft material with paint			
	Non-Fibrous Materials:	Other Fibrous Materials: %		<b>Asbestos Type: %</b>
	Binder/Filler, Paint, Miscellaneous particles	None Detected ND		<b>None Detected ND</b>

**Lab ID: 15042836**      **Client Sample #: DH002A-066A**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 2</b>	<b>Description:</b> Light yellow soft material			
	Non-Fibrous Materials:	Other Fibrous Materials: %		<b>Asbestos Type: %</b>
	Binder/Filler, Miscellaneous particles, Quartz	None Detected ND		<b>None Detected ND</b>

<b>Layer 2 of 2</b>	<b>Description:</b> Black brittle material			
	Non-Fibrous Materials:	Other Fibrous Materials: %		<b>Asbestos Type: %</b>
	Binder/Filler, Fine particles	None Detected ND		<b>None Detected ND</b>

**Lab ID: 15042837**      **Client Sample #: DH002A-066B**

Location: DOD Demo, Honolulu, Hawaii.


<b>Layer 1 of 2</b>	<b>Description:</b> Light yellow soft material			
	Non-Fibrous Materials:	Other Fibrous Materials: %		<b>Asbestos Type: %</b>
	Binder/Filler, Miscellaneous particles, Quartz	Synthetic fibers 2%		<b>None Detected ND</b>

<b>Layer 2 of 2</b>	<b>Description:</b> Black brittle material			
	Non-Fibrous Materials:	Other Fibrous Materials: %		<b>Asbestos Type: %</b>
	Binder/Filler, Fine particles	None Detected ND		<b>None Detected ND</b>

**Lab ID: 15042838**      **Client Sample #: DH002A-066C**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 2</b>	<b>Description:</b> Light yellow soft material			
	Non-Fibrous Materials:	Other Fibrous Materials: %		<b>Asbestos Type: %</b>
	Binder/Filler, Miscellaneous particles, Quartz	Synthetic fibers 3%		<b>None Detected ND</b>

**Sampled by:** Client  
**Analyzed by:** Jason J. Stuhr      **Date:** 05/04/2015  
**Reviewed by:** Nick Ly      **Date:** 05/04/2015       Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii.

**Batch #: 1507798.00**

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 30

Samples Analyzed: 29

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

<b>Layer 2 of 2</b>	<b>Description:</b> Black brittle material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>Asbestos Type: %</b>
	Binder/Filler, Fine particles	None Detected ND		<b>None Detected ND</b>

**Lab ID: 15042839**      **Client Sample #: DH002A-067A**  
Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 1</b>	<b>Description:</b> White soft elastic material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>Asbestos Type: %</b>
	Binder/Filler, Miscellaneous particles	None Detected ND		<b>None Detected ND</b>

**Lab ID: 15042840**      **Client Sample #: DH002A-067B**  
Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 1</b>	<b>Description:</b> White soft elastic material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>Asbestos Type: %</b>
	Binder/Filler, Miscellaneous particles	None Detected ND		<b>None Detected ND</b>

**Lab ID: 15042841**      **Client Sample #: DH002A-067C**  
Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 1</b>	<b>Description:</b> White soft elastic material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>Asbestos Type: %</b>
	Binder/Filler, Miscellaneous particles	Synthetic fibers 2%		<b>None Detected ND</b>

**Lab ID: 15042842**      **Client Sample #: DH002A-068A**  
Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 1</b>	<b>Description:</b> Gray brittle material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>Asbestos Type: %</b>
	Binder/Filler, Insect parts, Fine particles	Cellulose 2%		<b>None Detected ND</b>
		Spider silk 2%		

<b>Sampled by:</b> Client		
<b>Analyzed by:</b> Jason J. Stuhr	<b>Date:</b> 05/04/2015	 Nick Ly, Technical Director
<b>Reviewed by:</b> Nick Ly	<b>Date:</b> 05/04/2015	

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii.

Batch #: 1507798.00

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 30

Samples Analyzed: 29

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

**Lab ID: 15042843**      **Client Sample #: DH002A-068B**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Gray thin brittle material

Non-Fibrous Materials:  
Binder/Filler, Fine particles

Other Fibrous Materials:%  
Cellulose    2%

**Asbestos Type: %**  
**None Detected ND**

**Lab ID: 15042844**      **Client Sample #: DH002A-068C**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Gray thin brittle material

Non-Fibrous Materials:  
Binder/Filler, Fine particles

Other Fibrous Materials:%  
None Detected    ND

**Asbestos Type: %**  
**None Detected ND**

**Lab ID: 15042845**      **Client Sample #: DH002A-068D**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Gray sandy material

Non-Fibrous Materials:  
Binder/Filler, Mineral grains, Quartz  
Miscellaneous particles

Other Fibrous Materials:%  
None Detected    ND

**Asbestos Type: %**  
**None Detected ND**

**Lab ID: 15042846**      **Client Sample #: DH002A-068E**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Gray sandy material

Non-Fibrous Materials:  
Binder/Filler, Mineral grains, Quartz  
Miscellaneous particles

Other Fibrous Materials:%  
None Detected    ND

**Asbestos Type: %**  
**None Detected ND**

**Sampled by:** Client

**Analyzed by:** Jason J. Stuhr

**Reviewed by:** Nick Ly

**Date:** 05/04/2015

**Date:** 05/04/2015

  
Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# ASBESTOS CHAIN OF CUSTODY

# 1507798

Turn Around Time

- 1 Hour     24 Hours     4 Days
- 2 Hours     2 Days     5 Days
- 4 Hours     3 Days     10 Days

Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company AECOM  
 Address 1001 Bishop Street, Suite 1600  
Honolulu, Hawaii 96813  
 Phone (808) 954-4536

Project Manager Fletcher Kimura  
 Cell ( 808 ) 542 - 3752  
 Email fletcher.kimura@aecom.com  
 Fax ( 808 ) 523 - 8950

Project Name/Number 60340502.0500 Project Location DOD Demo, Honolulu, Hawaii

- PCM Air (NIOSH 7400)     TEM (NIOSH 7402)     TEM (AHERA)     TEM (EPA Level II Modified)
- PLM (EPA 600/R-93-116)     EPA 400 Points (600/R-93-116)     EPA 1000Points (600/R-93-116)
- PLM Gravimetry (600/R-93-116)     Asbestos in Vermiculite (EPA 600/R-04/004)     Asbestos in Sediment (EPA 1900 Points)
- Asbestos Friable/Non-Friable (EPA 600/R-93/116)     Other PLEASE STOP ON FIRST POSITIVE

Reporting Instructions Report to Fletcher Kimura. Please cc teresa.quiniola@aecom.com  
 Call (    )     Fax (    )     Email fletcher.kimura@aecom.com

Total Number of Samples 260

Sample ID	Description	A/R
1	DH002A-061A Exterior gray window caulk from woodshop 21	
2	DH002A-061B Exterior gray window caulk from woodshop	
3	DH002A-061C Exterior gray window caulk from woodshop	
4	DH002A-062A Exterior rivet mastic from storage shed 21	
5	DH002A-062B Exterior rivet mastic from storage shed	
6	DH002A-062C Exterior rivet mastic from storage shed	
7	DH002A-063A Exterior paint on metal from main building	
8	DH002A-063B Exterior paint on metal from main building	
9	DH002A-063C Exterior paint on metal from main building	
10	DH002A-063D Exterior paint on metal from main building	
11	DH002A-063E Exterior paint on metal from main building	
12	DH002A-063F Exterior paint on metal from main building	
13	DH002A-063G Exterior paint on metal from main building 21	
14	DH002A-064A Exterior paint on metal from storage shed 21	
15	DH002A-064B Exterior paint on metal from storage shed	

	Print Name	Signature	Company	Date	Time
Sampled by	Fletcher Kimura and Ryan Shinmoto	<i>[Signature]</i>	AECOM	4/21/15	--
Relinquish by	Fletcher Kimura	<i>[Signature]</i>	AECOM	4/29/15	11:00 am

Office Use Only

	Print Name	Signature	Company	Date	Time
Received by	<i>[Signature]</i>	<i>[Signature]</i>	Nuvlabs	4/30/15	9:30am Fedex
Analyzed by	<i>[Signature]</i>	<i>[Signature]</i>	NVL	5-4-15	16:07
Called by					
Faxed/Email by					



# ASBESTOS CHAIN OF CUSTODY

# 1507798

Turn Around Time

- 1 Hour
- 2 Hours
- 4 Hours
- 2 Days
- 3 Days
- 5 Days
- 10 Days

Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company AECOM  
 Address 1001 Bishop Street, Suite 1600  
Honolulu, Hawaii 96813  
 Phone (808) 954-4536

Project Manager Fletcher Kimura  
 Cell ( 808 ) 542 - 3752  
 Email fletcher.kimura@aecom.com  
 Fax ( 808 ) 523 - 8950

Project Name/Number 60340502.0500 Project Location DOD Demo, Honolulu, Hawaii

- PCM Air (NIOSH 7400)
- PLM (EPA 600/R-93-116)
- PLM Gravimetry (600/R-93-116)
- Asbestos Friable/Non-Friable (EPA 600/R-93/116)
- TEM (NIOSH 7402)
- EPA 400 Points (600/R-93-116)
- Asbestos in Vermiculite (EPA 600/R-04/004)
- Other PLEASE STOP ON FIRST POSITIVE
- TEM (AHERA)
- EPA 1000 Points (600/R-93-116)
- Asbestos in Sediment (EPA 1900 Points)

Reporting Instructions Report to Fletcher Kimura. Please cc teresa.quiniola@aecom.com  
 Call ( ) -  Fax ( ) -  Email fletcher.kimura@aecom.com

Total Number of Samples 260

Sample ID	Description	A/R
1	DH002A-064C Exterior paint on metal from storage shed	
2	DH002A-065A Exterior rivet mastic from woodshop	
3	DH002A-065B Exterior rivet mastic from woodshop	
4	DH002A-065C Exterior rivet mastic from woodshop	
5	DH002A-066A Room 2A North door mastic	
6	DH002A-066B Room 2A North door mastic	
7	DH002A-066C Room 2A North door mastic	
8	DH002A-067A Room 2A South door mastic	
9	DH002A-067B Room 2A South door mastic	
10	DH002A-067C Room 2A South door mastic	
11	DH002A-068A Concrete crack filler	
12	DH002A-068B Concrete crack filler	
13	DH002A-068C Concrete crack filler	
14	DH002A-068D Concrete crack filler	
15	DH002A-068E Concrete crack filler	

	Print Name	Signature	Company	Date	Time
Sampled by	Fletcher Kimura and Ryan Shinmoto	<i>[Signature]</i>	AECOM	4/15, 4/21/15	--
Relinquish by	Fletcher Kimura	<i>[Signature]</i>	AECOM	4/29/15	11:00 am

**Office Use Only**

	Print Name	Signature	Company	Date	Time
Received by	<i>[Signature]</i>	<i>[Signature]</i>	NVL Labs	4/30/15	9:15am Fedex
Analyzed by	Asan J. Stuh	<i>[Signature]</i>	NVL	5-4-15	16:07
Called by					
Faxed/Email by					

May 6, 2015

Fletcher Kimura  
**AECOM**  
1001 Bishop Street, Suite 1600  
Honolulu, HI 96813



Laboratory | Management | Training

**RE: Bulk Asbestos Fiber Analysis, NVL Batch # 1507799.00**

Dear Mr. Kimura,

Enclosed please find test results for the bulk samples submitted to our laboratory for analysis. Examination of these samples was conducted for the presence of identifiable asbestos fibers using polarized light microscopy (PLM) with dispersion staining in accordance with both U.S. EPA 600/M4-82-020, Interim Method for Determination of Asbestos in Bulk Insulation Samples, as found in 40 CFR, Part 763, Subpart E, Appendix E (formerly Subpart F, Appendix A), and U.S. EPA 600/R-93/116 (July 1993) Test Methods.

For samples containing more than one separable layer of materials, the report will include findings for each layer (labeled Layer 1 and Layer 2, etc. for each individual layer). The asbestos concentration in the sample is determined by visual estimation.

For those samples with asbestos concentrations between 1 and 10 percent based on visual estimation, the EPA recommends a procedure known as point counting (NESHAPS, 40 CFR Part 61). Point counting is a statistically more accurate means of quantification for samples with low concentrations of asbestos. If you would like us to further refine the concentration estimates of asbestos in these samples using point counting, please let me know.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. Please do not hesitate to call if there is anything further we can assist you with.

Sincerely,

A handwritten signature in black ink, appearing to be "NL" or "Nick Ly".

 Nick Ly, Technical Director



Lab Code: 102063-0

**1.888.NVL.LABS**  
1.888.(685.5227)  
www.nvllabs.com

Enc.: Sample Results

NVL Laboratories, Inc.  
4708 Aurora Ave N, Seattle, WA 98103  
p 206.547.0100 | f 206.634.1936



# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii.

Batch #: 1507799.00

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 39

Samples Analyzed: 38

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

Lab ID: 15042847 Client Sample #: DH002A-069A

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1 Description: Off-white fibrous material

Non-Fibrous Materials:  
Binder/Filler, Fine particles

Other Fibrous Materials:%  
Mineral wool 85%  
Cellulose 3%

Asbestos Type: %  
None Detected ND

Lab ID: 15042848 Client Sample #: DH002A-069B

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1 Description: Off-white fibrous material

Non-Fibrous Materials:  
Fine particles/Binder

Other Fibrous Materials:%  
Mineral wool 94%  
Cellulose 2%

Asbestos Type: %  
None Detected ND

Lab ID: 15042849 Client Sample #: DH002A-069C

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1 Description: Off-white fibrous material

Non-Fibrous Materials:  
Fine particles/Binder

Other Fibrous Materials:%  
Mineral wool 93%  
Cellulose 2%

Asbestos Type: %  
None Detected ND

Lab ID: 15042850 Client Sample #: DH002A-070A

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 5 Description: Beige ceramic material

Non-Fibrous Materials:  
Ceramic/Binder

Other Fibrous Materials:%  
None Detected ND

Asbestos Type: %  
None Detected ND

Sampled by: Client

Analyzed by: Jason J. Stuhr

Reviewed by: Nick Ly

Date: 05/06/2015

Date: 05/06/2015

  
Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii.

Batch #: 1507799.00

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 39

Samples Analyzed: 38

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

<b>Layer 2 of 5</b>	<b>Description:</b> Orange thin soft material	Non-Fibrous Materials: Binder/Filler, Fine particles	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 3 of 5</b>	<b>Description:</b> Gray brittle grout type material	Non-Fibrous Materials: Binder/Filler, Fine grains	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 4 of 5</b>	<b>Description:</b> Dark gray hard material	Non-Fibrous Materials: Binder/Filler, Fine grains	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 5 of 5</b>	<b>Description:</b> Off-white hard sandy material	Non-Fibrous Materials: Binder/Filler, Granules, Miscellaneous particles	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>

**Lab ID: 15042851 Client Sample #: DH002A-070B**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 3</b>	<b>Description:</b> Beige ceramic material	Non-Fibrous Materials: Ceramic/Binder	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 2 of 3</b>	<b>Description:</b> White thin sandy material	Non-Fibrous Materials: Binder/Filler, Granules, Miscellaneous particles	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 3 of 3</b>	<b>Description:</b> Gray hard grout type material	Non-Fibrous Materials: Binder/Filler, Fine grains, Miscellaneous particles	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>

**Lab ID: 15042852 Client Sample #: DH002A-070C**

Location: DOD Demo, Honolulu, Hawaii.

**Sampled by:** Client

**Analyzed by:** Jason J. Stuhr

**Reviewed by:** Nick Ly

**Date:** 05/06/2015

**Date:** 05/06/2015  Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii.

**Batch #: 1507799.00**

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 39

Samples Analyzed: 38

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

<b>Layer 1 of 3</b>	<b>Description:</b> Beige ceramic material	Non-Fibrous Materials: Ceramic/Binder	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 2 of 3</b>	<b>Description:</b> Gray hard material	Non-Fibrous Materials: Binder/Filler, Fine grains	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>
<b>Layer 3 of 3</b>	<b>Description:</b> Off-white hard sandy material	Non-Fibrous Materials: Binder/Filler, Granules, Miscellaneous particles	Other Fibrous Materials:% None Detected ND	<b>Asbestos Type: %</b> <b>None Detected ND</b>

**Lab ID: 15042853 Client Sample #: DH002A-071A**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 1</b>	<b>Description:</b> Off-white fibrous material	Non-Fibrous Materials: Fine particles	Other Fibrous Materials:% Mineral wool 98%	<b>Asbestos Type: %</b> <b>None Detected ND</b>
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**Lab ID: 15042854 Client Sample #: DH002A-071B**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 1</b>	<b>Description:</b> Off-white fibrous material	Non-Fibrous Materials: Fine particles/Binder	Other Fibrous Materials:% Mineral wool 96%	<b>Asbestos Type: %</b> <b>None Detected ND</b>
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**Lab ID: 15042855 Client Sample #: DH002A-071C**

Location: DOD Demo, Honolulu, Hawaii.


<b>Layer 1 of 1</b>	<b>Description:</b> Off-white fibrous material	Non-Fibrous Materials: Fine particles/Binder	Other Fibrous Materials:% Mineral wool 95%	<b>Asbestos Type: %</b> <b>None Detected ND</b>
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**Sampled by:** Client

**Analyzed by:** Jason J. Stuhr

**Reviewed by:** Nick Ly

**Date:** 05/06/2015

**Date:** 05/06/2015  Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii.

Batch #: 1507799.00

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 39

Samples Analyzed: 38

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

**Lab ID: 15042856**      **Client Sample #: DH002A-072A**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Black soft elastic material

Non-Fibrous Materials:  
Binder/Filler, Miscellaneous particles

Other Fibrous Materials:%  
Cellulose 2%

**Asbestos Type: %**  
**None Detected ND**

**Lab ID: 15042857**      **Client Sample #: DH002A-072B**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Black soft elastic material

Non-Fibrous Materials:  
Binder/Filler, Miscellaneous particles

Other Fibrous Materials:%  
Cellulose 2%

**Asbestos Type: %**  
**None Detected ND**

**Lab ID: 15042858**      **Client Sample #: DH002A-072C**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Black soft elastic material

Non-Fibrous Materials:  
Binder/Filler, Miscellaneous particles

Other Fibrous Materials:%  
Cellulose 2%

**Asbestos Type: %**  
**None Detected ND**

**Lab ID: 15042859**      **Client Sample #: DH002A-073A**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Off-white fibrous material

Non-Fibrous Materials:  
Fine particles/Binder

Other Fibrous Materials:%  
Mineral wool 96%

**Asbestos Type: %**  
**None Detected ND**

**Lab ID: 15042860**      **Client Sample #: DH002A-073B**


Location: DOD Demo, Honolulu, Hawaii.

**Sampled by:** Client

**Analyzed by:** Jason J. Stuhr

**Reviewed by:** Nick Ly

**Date:** 05/06/2015

**Date:** 05/06/2015  Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii.

Batch #: 1507799.00

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 39

Samples Analyzed: 38

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

Layer 1 of 1	Description: Off-white fibrous material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Fine particles/Binder	Mineral wool 97%		None Detected ND

Lab ID: 15042861 Client Sample #: DH002A-073C  
Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1	Description: Tan fibrous material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Fine particles/Binder	Cellulose 98%		None Detected ND

Lab ID: 15042862 Client Sample #: DH002A-074A  
Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1	Description: Gray soft mastic			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Mastic/Binder, Fine particles	Cellulose 3%		None Detected ND

Lab ID: 15042863 Client Sample #: DH002A-074B  
Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1	Description: Gray soft mastic			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Mastic/Binder, Fine particles	Cellulose 2%		None Detected ND

Lab ID: 15042864 Client Sample #: DH002A-074C  
Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1	Description: Gray soft mastic			
	Non-Fibrous Materials:	Other Fibrous Materials:%		Asbestos Type: %
	Mastic/Binder, Fine particles	Cellulose 3%		None Detected ND

<p>Sampled by: Client</p> <p>Analyzed by: Jason J. Stuhr</p> <p>Reviewed by: Nick Ly</p>	<p>Date: 05/06/2015</p> <p>Date: 05/06/2015</p>	 <p>Nick Ly, Technical Director</p>
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Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii.

Batch #: 1507799.00

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 39

Samples Analyzed: 38

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

**Lab ID: 15042865**      **Client Sample #: DH002A-075A**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Gray soft elastic material

Non-Fibrous Materials:  
Caulking compound, Fine particles

Other Fibrous Materials:%  
None Detected    ND

**Asbestos Type: %**  
**None Detected ND**

**Lab ID: 15042866**      **Client Sample #: DH002A-075B**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Gray soft elastic material

Non-Fibrous Materials:  
Caulking compound, Fine particles

Other Fibrous Materials:%  
None Detected    ND

**Asbestos Type: %**  
**None Detected ND**

**Lab ID: 15042867**      **Client Sample #: DH002A-075C**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Gray soft elastic material

Non-Fibrous Materials:  
Caulking compound, Fine particles

Other Fibrous Materials:%  
None Detected    ND

**Asbestos Type: %**  
**None Detected ND**

**Lab ID: 15042868**      **Client Sample #: DH002A-076A**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Gray soft elastic material with paint

Non-Fibrous Materials:  
Caulking compound, Paint, Miscellaneous particles

Other Fibrous Materials:%  
None Detected    ND

**Asbestos Type: %**  
**None Detected ND**

**Lab ID: 15042869**      **Client Sample #: DH002A-076B**


Location: DOD Demo, Honolulu, Hawaii.

**Sampled by:** Client

**Analyzed by:** Jason J. Stuhr

**Reviewed by:** Nick Ly

**Date:** 05/06/2015

**Date:** 05/06/2015  Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii.

Batch #: 1507799.00

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 39

Samples Analyzed: 38

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

Layer 1 of 1	Description: Gray soft elastic material with paint	Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: %
	Caulking compound, Paint, Miscellaneous particles		None Detected ND	None Detected ND

Lab ID: 15042870 Client Sample #: DH002A-076C  
Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1	Description: Gray soft elastic material with paint	Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: %
	Caulking compound, Paint, Miscellaneous particles		Cellulose 2%	None Detected ND

Lab ID: 15042871 Client Sample #: DH002A-077A  
Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 2	Description: Gray/off-white thin soft material with fibrous elements	Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: %
	Binder/Filler, Miscellaneous particles		Synthetic fibers 40%	None Detected ND

Layer 2 of 2	Description: Green soft adhesive material	Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: %
	Adhesive/Binder, Miscellaneous particles, Mica		Cellulose 2%	None Detected ND

Lab ID: 15042872 Client Sample #: DH002A-077B  
Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 3	Description: Gray/off-white thin soft material with fibrous elements	Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: %
	Binder/Filler, Miscellaneous particles		Synthetic fibers 42%	None Detected ND

Layer 2 of 3	Description: Green soft elastic material	Non-Fibrous Materials:	Other Fibrous Materials:%	Asbestos Type: %
	Binder/Filler, Miscellaneous particles		None Detected ND	None Detected ND

<p><b>Sampled by:</b> Client</p> <p><b>Analyzed by:</b> Jason J. Stuhr</p> <p><b>Reviewed by:</b> Nick Ly</p>	<p><b>Date:</b> 05/06/2015</p> <p><b>Date:</b> 05/06/2015</p>	 <p>Nick Ly, Technical Director</p>
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Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii.

**Batch #: 1507799.00**

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 39

Samples Analyzed: 38

Method: EPA/600/R-93/116  
& EPA/600/M4-82-020

**Layer 3 of 3** Description: Silver paint

Non-Fibrous Materials:  
Paint/Binder, Miscellaneous particles

Other Fibrous Materials:%  
None Detected ND

**Asbestos Type: %**  
Chrysotile 2%

**Lab ID: 15042873**

**Client Sample #: DH002A-077C**

**Sample Status:**

**Not Analyzed**

**Lab ID: 15042874** Client Sample #: **DH002A-078A**

Location: DOD Demo, Honolulu, Hawaii.

**Layer 1 of 1** Description: Gray thin brittle material

Non-Fibrous Materials:  
Paint/Binder, Miscellaneous particles

Other Fibrous Materials:%  
Cellulose 2%

**Asbestos Type: %**  
None Detected ND

**Lab ID: 15042875** Client Sample #: **DH002A-078B**

Location: DOD Demo, Honolulu, Hawaii.

**Layer 1 of 2** Description: White brittle material

Non-Fibrous Materials:  
Paint/Binder

Other Fibrous Materials:%  
None Detected ND

**Asbestos Type: %**  
None Detected ND

**Layer 2 of 2** Description: Gray sandy material

Non-Fibrous Materials:  
Binder/Filler, Mineral grains, Granules

Other Fibrous Materials:%  
None Detected ND

**Asbestos Type: %**  
None Detected ND

**Lab ID: 15042876** Client Sample #: **DH002A-078C**

Location: DOD Demo, Honolulu, Hawaii.

**Layer 1 of 1** Description: White brittle material

Non-Fibrous Materials:  
Paint/Binder, Miscellaneous particles

Other Fibrous Materials:%  
None Detected ND

**Asbestos Type: %**  
None Detected ND

**Sampled by:** Client

**Analyzed by:** Jason J. Stuhr

**Reviewed by:** Nick Ly

**Date:** 05/06/2015

**Date:** 05/06/2015

  
 Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii.

Batch #: 1507799.00

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 39

Samples Analyzed: 38

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

**Lab ID: 15042877      Client Sample #: DH002A-079A**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: White/green thin soft material with fibrous elements

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
Binder/Filler, Fine particles	Synthetic fibers 38%	

**None Detected ND**

**Lab ID: 15042878      Client Sample #: DH002A-079B**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: White/green thin soft material with fibrous elements

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
Binder/Filler, Fine particles	Synthetic fibers 41%	

**None Detected ND**

**Lab ID: 15042879      Client Sample #: DH002A-079C**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: White/green thin soft material with fibrous elements

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
Binder/Filler, Fine particles	Synthetic fibers 40%	

**None Detected ND**

**Lab ID: 15042880      Client Sample #: DH002A-080A**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 3      Description: Gray thin soft material

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
Binder/Filler, Miscellaneous particles	Talc fibers 2%	

**None Detected ND**

Layer 2 of 3      Description: Yellow spongy material

Non-Fibrous Materials:	Other Fibrous Materials: %	<b>Asbestos Type: %</b>
Synthetic foam, Fine particles	None Detected ND	

**None Detected ND**

Sampled by: Client

Analyzed by: Jason J. Stuhr

Reviewed by: Nick Ly

Date: 05/06/2015

Date: 05/06/2015  Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii.

Batch #: 1507799.00

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 39

Samples Analyzed: 38

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

<b>Layer 3 of 3</b>	<b>Description:</b> Black thin soft material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>Asbestos Type: %</b>
	Binder/Filler, Fine particles	Cellulose 2%		<b>None Detected ND</b>

**Lab ID: 15042881 Client Sample #: DH002A-080B**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 3</b>	<b>Description:</b> Gray/white thin soft material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>Asbestos Type: %</b>
	Binder/Filler, Miscellaneous particles	None Detected ND		<b>None Detected ND</b>

<b>Layer 2 of 3</b>	<b>Description:</b> Yellow spongy material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>Asbestos Type: %</b>
	Synthetic foam, Fine particles	None Detected ND		<b>None Detected ND</b>

<b>Layer 3 of 3</b>	<b>Description:</b> Black thin soft material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>Asbestos Type: %</b>
	Binder/Filler, Fine particles	Cellulose 3%		<b>None Detected ND</b>

**Lab ID: 15042882 Client Sample #: DH002A-080C**

Location: DOD Demo, Honolulu, Hawaii.

<b>Layer 1 of 3</b>	<b>Description:</b> Gray/white thin soft material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>Asbestos Type: %</b>
	Binder/Filler, Miscellaneous particles	Cellulose 2%		<b>None Detected ND</b>

<b>Layer 2 of 3</b>	<b>Description:</b> Yellow spongy material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>Asbestos Type: %</b>
	Synthetic foam, Fine particles	None Detected ND		<b>None Detected ND</b>


<b>Layer 3 of 3</b>	<b>Description:</b> Black thin soft material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		<b>Asbestos Type: %</b>
	Binder/Filler, Fine particles	Cellulose 2%		<b>None Detected ND</b>

**Sampled by:** Client

**Analyzed by:** Jason J. Stuhr

**Reviewed by:** Nick Ly

**Date:** 05/06/2015

**Date:** 05/06/2015  Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

# Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii.

Batch #: 1507799.00

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 39

Samples Analyzed: 38

Method: EPA/600/R-93/116

& EPA/600/M4-82-020

**Lab ID: 15042883      Client Sample #: DH002A-082A**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Dark gray soft material

Non-Fibrous Materials:  
Binder/Filler, Fine particles

Other Fibrous Materials:%  
Cellulose    2%

**Asbestos Type: %  
None Detected ND**

**Lab ID: 15042884      Client Sample #: DH002A-082B**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Dark gray soft material

Non-Fibrous Materials:  
Binder/Filler, Fine particles, Organic debris

Other Fibrous Materials:%  
Cellulose    3%

**Asbestos Type: %  
None Detected ND**

**Lab ID: 15042885      Client Sample #: DH002A-082C**

Location: DOD Demo, Honolulu, Hawaii.

Layer 1 of 1      Description: Dark gray soft material

Non-Fibrous Materials:  
Binder/Filler, Fine particles, Organic debris

Other Fibrous Materials:%  
Cellulose    2%

**Asbestos Type: %  
None Detected ND**


**Sampled by:** Client

**Analyzed by:** Jason J. Stuhr

**Reviewed by:** Nick Ly

**Date:** 05/06/2015

**Date:** 05/06/2015

  
Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government



# ASBESTOS CHAIN OF CUSTODY

# 1507799

Turn Around Time

- 1 Hour       24 Hours       4 Days
- 2 Hours       2 Days       5 Days
- 4 Hours       3 Days       10 Days

Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company AECOM  
 Address 1001 Bishop Street, Suite 1600  
Honolulu, Hawaii 96813  
 Phone (808) 954-4536

Project Manager Fletcher Kimura  
 Cell ( 808 ) 542 - 3752  
 Email fletcher.kimura@aecom.com  
 Fax ( 808 ) 523 - 8950

Project Name/Number 60340502.0500 Project Location DOD Demo, Honolulu, Hawaii

- PCM Air (NIOSH 7400)       TEM (NIOSH 7402)       TEM (AHERA)       TEM (EPA Level II Modified)
- PLM (EPA 600/R-93-116)       EPA 400 Points (600/R-93-116)       EPA 1000Points (600/R-93-116)
- PLM Gravimetry (600/R-93-116)       Asbestos in Vermiculite (EPA 600/R-04/004)       Asbestos in Sediment (EPA 1900 Points)
- Asbestos Friable/Non-Friable (EPA 600/R-93/116)       Other PLEASE STOP ON FIRST POSITIVE

Reporting Instructions Report to Fletcher Kimura. Please cc.teresa.quiniola@aecom.com  
 Call (      )       Fax (      )       Email fletcher.kimura@aecom.com

**Total Number of Samples** 260

Sample ID	Description	A/R
1	DH002A-069A Wall insulation	
2	DH002A-069B Wall insulation	
3	DH002A-069C Wall insulation	
4	DH002A-070A Mosaic tile under beige with black mastic	
5	DH002A-070B Mosaic tile under beige with black mastic	
6	DH002A-070C Mosaic tile under beige with black mastic	
7	DH002A-071A Drywall insulation	
8	DH002A-071B Drywall insulation	
9	DH002A-071C Drywall insulation	
10	DH002A-072A Window glass caulking	
11	DH002A-072B Window glass caulking	
12	DH002A-072C Window glass caulking	
13	DH002A-073A Plenum insulation	
14	DH002A-073B Plenum insulation	
15	DH002A-073C Plenum insulation	

	Print Name	Signature	Company	Date	Time
Sampled by	Fletcher Kimura and Ryan Shinmoto		AECOM	4/15-4/17, 4/21/15	--
Relinquish by	Fletcher Kimura		AECOM	4/29/15	11:00 am

**Office Use Only**

	Print Name	Signature	Company	Date	Time
Received by	<u>Yotimotian</u>		<u>NVL Labs</u>	<u>4/30/15</u>	<u>5:15am fedex</u>
Analyzed by	<u>Jason J. Stuhler</u>		<u>NVL</u>	<u>5-6-15</u>	<u>13:25</u>
Called by					
Faxed/Email by					



# ASBESTOS CHAIN OF CUSTODY

# 1507799

Turn Around Time

- 1 Hour       24 Hours       4 Days
- 2 Hours       2 Days       5 Days
- 4 Hours       3 Days       10 Days

Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company AECOM  
 Address 1001 Bishop Street, Suite 1600  
Honolulu, Hawaii 96813  
 Phone (808) 954-4536

Project Manager Fletcher Kimura  
 Cell ( 808 ) 542 - 3752  
 Email fletcher.kimura@aecom.com  
 Fax ( 808 ) 523 - 8950

Project Name/Number 60340502.0500 Project Location DOD Demo, Honolulu, Hawaii

- PCM Air (NIOSH 7400)       TEM (NIOSH 7402)       TEM (AHERA)       TEM (EPA Level II Modified)
- PLM (EPA 600/R-93-116)       EPA 400 Points (600/R-93-116)       EPA 1000Points (600/R-93-116)
- PLM Gravimetry (600/R-93-116)       Asbestos in Vermiculite (EPA 600/R-04/004)       Asbestos in Sediment (EPA 1900 Points)
- Asbestos Friable/Non-Friable (EPA 600/R-93/116)       Other PLEASE STOP ON FIRST POSITIVE

Reporting Instructions Report to Fletcher Kimura. Please cc teresa.quiniola@aecom.com  
 Call (      )       Fax (      )       Email fletcher.kimura@aecom.com

**Total Number of Samples** 260

Sample ID	Description	A/R
1	DH002A-079A	Shipping container roofing
2	DH002A-079B	Shipping container roofing
3	DH002A-079C	Shipping container roofing
4	DH002A-080A	Woodshop roof
5	DH002A-080B	Woodshop roof
6	DH002A-080C	Woodshop roof
7	DH002A-082A	Low roof vent mastic
8	DH002A-082B	Low roof vent mastic
9	DH002A-082C	Low roof vent mastic
10		
11		
12		
13		
14		
15		

	Print Name	Signature	Company	Date	Time
Sampled by	Fletcher Kimura and Teresa Quiniola		AECOM	4/24/15	--
Relinquish by	Fletcher Kimura		AECOM	4/29/15	11:00 am

**Office Use Only**

	Print Name	Signature	Company	Date	Time
Received by	<u>Stimulation</u>		<u>NVL</u>	<u>4/30/15</u>	<u>Quinsan Fed ex</u>
Analyzed by	<u>ASAC J. Stuhr</u>		<u>NVL</u>	<u>5-6-15</u>	<u>13:25</u>
Called by					
Faxed/Email by					

**Appendix C.2**  
**Lead Laboratory Results**





April 15, 2015

Fletcher Kimura  
**AECOM**  
1001 Bishop Street, Suite 1600  
Honolulu, HI 96813



Laboratory | Management | Training

**RE: Metals Analysis; NVL Batch # 1506644.00**

Dear Mr. Kimura,

Enclosed please find the test results for samples submitted to our laboratory for analysis. Preparation of these samples was conducted following protocol outlined in EPA Method SW 846 -3051 unless stated otherwise. Analysis of these samples was performed using analytical instruments in accordance with U.S. EPA, NIOSH, OSHA and other ASTM methods.

For matrix materials submitted as paint, dust wipe, soil or TCLP samples, analysis for the presence of total metals is conducted using published U.S. EPA Methods. Paint and soil results are usually expressed in mg/Kg which is equivalent to parts per million (ppm). Lead (Pb) in paint is usually expressed in mg/Kg (ppm), Percent (%) or mg/cm<sup>2</sup> by area. Dust wipe sample results are usually expressed in ug/wipe and ug/ft<sup>2</sup>. TCLP samples are reported in mg/L (ppm). For air filter samples, analyses are conducted using NIOSH and OSHA Methods. Results are expressed in ug/filter and ug/m<sup>3</sup>. Other matrix materials are analyzed accordingly using published methods or specified by client. The reported test results pertain only to items tested. Lead test results are not blank corrected.

For recent regulation updates pertaining to current regulatory levels or permissible exposure levels, please call your local regulatory agencies for more details.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. If you need further assistance please feel free to call us at 206-547-0100 or 1-888-NVLLABS.

Sincerely,

A handwritten signature in black ink, appearing to read 'Nick Ly', written over a white background.

Nick Ly, Technical Director

**1.888.NVL.LABS**  
1.888.(685.5227)  
www.nvllabs.com



NVL Laboratories, Inc.  
4708 Aurora Ave N, Seattle, WA 98103  
p 206.547.0100 | f 206.634.1936

# Analysis Report

## Total Metals

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii

Batch #: 1506644.00

Matrix: Paint

Method: EPA 3051/6010C

Client Project #: 60340502.0500

Date Received: 4/13/2015

Samples Received: 15

Samples Analyzed: 15

Lab ID	Client Sample #	Elements	Sample wt (g)	RL mg / kg	Results in mg / kg	Results in ppm	Results in percent
15036983	DH001P-001	Lead (Pb)	0.1903	21.0	< 21.0	< 21.0	< 0.0021
15036984	DH001P-002	Lead (Pb)	0.2046	20.0	1100.0	1100.0	0.1100
15036985	DH001P-003	Lead (Pb)	0.1949	21.0	< 21.0	< 21.0	< 0.0021
15036986	DH001P-004	Lead (Pb)	0.1937	21.0	44.0	44.0	0.0044
15036987	DH001P-005	Lead (Pb)	0.2057	19.0	< 19.0	< 19.0	< 0.0019
15036988	DH001P-006	Lead (Pb)	0.1653	24.0	< 24.0	< 24.0	< 0.0024
15036989	DH001P-007	Lead (Pb)	0.1770	23.0	440.0	440.0	0.0440
15036990	DH001P-008	Lead (Pb)	0.1933	21.0	100.0	100.0	0.0100
15036991	DH001P-009	Lead (Pb)	0.1940	21.0	370.0	370.0	0.0370
15036992	DH001P-010	Lead (Pb)	0.1944	21.0	520.0	520.0	0.0520
15036993	DH001P-011	Lead (Pb)	0.1912	21.0	< 21.0	< 21.0	< 0.0021
15036994	DH001P-012	Lead (Pb)	0.2050	20.0	540.0	540.0	0.0540
15036995	DH001P-013	Lead (Pb)	0.1943	21.0	4400.0	4400.0	0.4400
15036996	DH001P-014	Lead (Pb)	0.2460	16.0	< 16.0	< 16.0	< 0.0016
15036997	DH001P-015	Lead (Pb)	0.2486	16.0	< 16.0	< 16.0	< 0.0016


Sampled by: Client

Analyzed by: Shalini Patel

Reviewed by: Nick Ly

Date Analyzed: 04/15/2015

Date Issued: 04/15/2015



Nick Ly, Technical Director

RL = Reporting Limit

'<' = Below the reporting Limit

mg/ kg = Milligrams per kilogram

ppm = Parts per million

Note : Method QC results are acceptable unless stated otherwise.

Unless otherwise indicated, the condition of all samples was acceptable at time of receipt.



## METALS CHAIN OF CUSTODY

Turn Around Time

- 2 Hour     4 Hours     24 Hours  
 2 Days     3 Days     4 Days  
 5 Days     6-10 Days

Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company AECOM  
 Address 1001 Bishop Street, Suite 1600  
Honolulu, Hawaii 96813  
 Phone (808) 954-4536

Project Manager Fletcher Kimura  
 Cell ( 808 ) 542 - 3752  
 Email fletcher.kimura@aecom.com  
 Fax ( 808 ) 523 - 8950

Project Name/Number 60340502.0500 Project Location DOD Demo, Honolulu, Hawaii

- |                                       |                                     |  |   |                               |                                   |                                   |                                 |                                 |
|---------------------------------------|-------------------------------------|--|---|-------------------------------|-----------------------------------|-----------------------------------|---------------------------------|---------------------------------|
| <input type="checkbox"/> Total Metals | <input type="checkbox"/> FAA (ppm)  | <input type="checkbox"/> Air Filter                          | <input checked="" type="checkbox"/> Paint Chips (%) | <input type="checkbox"/> Soil | RCRA 8                            | RCRA 11                           |                                 |                                 |
| <input type="checkbox"/> TCLP         | <input type="checkbox"/> ICP (PPM)  | <input type="checkbox"/> Paint Chips (cm)                    | <input type="checkbox"/> Dust Wipes                 |                               | <input type="checkbox"/> Barium   | <input type="checkbox"/> Chromium | <input type="checkbox"/> Silver | <input type="checkbox"/> Copper |
|                                       | <input type="checkbox"/> GFAA (ppb) | <input type="checkbox"/> Drinking Water                      | <input type="checkbox"/> Waste Water                |                               | <input type="checkbox"/> Arsenic  | <input type="checkbox"/> Mercury  | <input type="checkbox"/> Lead   | <input type="checkbox"/> Zinc   |
|                                       | <input type="checkbox"/> CVAA (ppb) | <input checked="" type="checkbox"/> Other <u>% by weight</u> |   |                               | <input type="checkbox"/> Selenium | <input type="checkbox"/> Cadmium  |                                 | <input type="checkbox"/> Other  |

Reporting Instructions Report to Fletcher Kimura. Please cc teresa.quiniola@aecom.com  
 Call ( ) -     Fax ( ) -     Email fletcher.kimura@aecom.com

Total Number of Samples 44

Sample ID	Description	A/R
1	DH001P-001	White paint on wood
2	DH001P-002	Black over green and yellow on wood
3	DH001P-003	White on concrete/CMU
4	DH001P-004	Light blue on concrete/CMU
5	DH001P-005	White over light blue on metal
6	DH001P-006	Light blue on metal
7	DH001P-007	Light blue on wood
8	DH001P-008	Black on concrete
9	DH001P-009	Beige on wood
10	DH001P-010	Light green on wood
11	DH001P-011	Dark brown on wood
12	DH001P-012	Light brown over light blue on wood
13	DH001P-013	Light tan on metal
14	DH001P-014	Tan 6"x12" ceramic tile
15	DH001P-015	Mosaic ceramic tile

	Print Name	Signature	Company	Date	Time
Sampled by	Teresa Quiniola	<i>Teresa Quiniola</i>	AECOM	7-Apr-15, 8-Apr-15	14:15
Relinquish by	Fletcher Kimura	<i>Fletcher Kimura</i>	AECOM	10-Apr-15	12:30 pm

Office Use Only

	Print Name	Signature	Company	Date	Time
Received by	<i>Mary</i>	<i>[Signature]</i>	<i>NVL</i>	<i>4/13/15</i>	<i>9:00 PM</i>
Analyzed by	<i>Stratton Pectol</i>	<i>[Signature]</i>	<i>NVL</i>	<i>4/15/15</i>	<i>11:00</i>
Called by					
Faxed/Email by					



April 15, 2015

Fletcher Kimura  
**AECOM**  
1001 Bishop Street, Suite 1600  
Honolulu, HI 96813



Laboratory | Management | Training

**RE: Metals Analysis; NVL Batch # 1506648.00**

Dear Mr. Kimura,

Enclosed please find the test results for samples submitted to our laboratory for analysis. Preparation of these samples was conducted following protocol outlined in EPA Method SW 846 -3051 unless stated otherwise. Analysis of these samples was performed using analytical instruments in accordance with U.S. EPA, NIOSH, OSHA and other ASTM methods.

For matrix materials submitted as paint, dust wipe, soil or TCLP samples, analysis for the presence of total metals is conducted using published U.S. EPA Methods. Paint and soil results are usually expressed in mg/Kg which is equivalent to parts per million (ppm). Lead (Pb) in paint is usually expressed in mg/Kg (ppm), Percent (%) or mg/cm<sup>2</sup> by area. Dust wipe sample results are usually expressed in ug/wipe and ug/ft<sup>2</sup>. TCLP samples are reported in mg/L (ppm). For air filter samples, analyses are conducted using NIOSH and OSHA Methods. Results are expressed in ug/filter and ug/m<sup>3</sup>. Other matrix materials are analyzed accordingly using published methods or specified by client. The reported test results pertain only to items tested. Lead test results are not blank corrected.

For recent regulation updates pertaining to current regulatory levels or permissible exposure levels, please call your local regulatory agencies for more details.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. If you need further assistance please feel free to call us at 206-547-0100 or 1-888-NVLLABS.

Sincerely,



Nick Ly, Technical Director



**1.888.NVL.LABS**  
1.888.(685.5227)  
www.nvllabs.com

NVL Laboratories, Inc.  
4708 Aurora Ave N, Seattle, WA 98103  
p 206.547.0100 | f 206.634.1936



# Analysis Report

## Total Metals

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii

**Batch #: 1506648.00**

Matrix: Paint

Method: EPA 3051/6010C

Client Project #: 60340502.0500

Date Received: 4/13/2015

Samples Received: 15

Samples Analyzed: 15

Lab ID	Client Sample #	Elements	Sample wt (g)	RL mg / kg	Results in mg / kg	Results in ppm	Results in percent
15037042	DH001P-016	Lead (Pb)	0.1998	20.0	61.0	61.0	0.0061
15037043	DH001P-017	Lead (Pb)	0.2076	19.0	240.0	240.0	0.0240
15037044	DH001P-018	Lead (Pb)	0.0400	50.0	< 50.0	< 50.0	< 0.0050
15037045	DH001P-019	Lead (Pb)	0.2113	19.0	< 19.0	< 19.0	< 0.0019
15037046	DH001P-020	Lead (Pb)	0.2138	19.0	2700.0	2700.0	0.2700
15037047	DH001P-021	Lead (Pb)	0.2088	19.0	960.0	960.0	0.0960
15037048	DH001P-022	Lead (Pb)	0.2161	19.0	27.0	27.0	0.0027
15037049	DH001P-023	Lead (Pb)	0.2280	18.0	< 18.0	< 18.0	< 0.0018
15037050	DH001P-024	Lead (Pb)	0.2116	19.0	< 19.0	< 19.0	< 0.0019
15037051	DH001P-025	Lead (Pb)	0.0786	51.0	110.0	110.0	0.0110
15037052	DH001P-026	Lead (Pb)	0.2109	19.0	800.0	800.0	0.0800
15037053	DH001P-027	Lead (Pb)	0.2180	18.0	4400.0	4400.0	0.4400
15037054	DH001P-028	Lead (Pb)	0.2109	19.0	81.0	81.0	0.0081
15037055	DH001P-029	Lead (Pb)	0.2006	20.0	< 20.0	< 20.0	< 0.0020
15037056	DH001P-030	Lead (Pb)	0.0162	120.0	< 120.0	< 120.0	< 0.0120

**Comments:** Small sample size(<0.05g) for DH001P-018 and 030.

Sampled by: Client

Analyzed by: Shalini Patel

Reviewed by: Nick Ly

Date Analyzed: 04/15/2015

Date Issued: 04/15/2015



Nick Ly, Technical Director

mg/ kg = Milligrams per kilogram

ppm = Parts per million

Note : Method QC results are acceptable unless stated otherwise.

Unless otherwise indicated, the condition of all samples was acceptable at time of receipt.

RL = Reporting Limit

'<' = Below the reporting Limit





# METALS CHAIN OF CUSTODY

# 1506648

Turn Around Time

- 2 Hour       4 Hours       24 Hours
- 2 Days       3 Days       4 Days
- 5 Days       6-10 Days

Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company AECOM  
 Address 1001 Bishop Street, Suite 1600  
Honolulu, Hawaii 96813  
 Phone (808) 954-4536

Project Manager Fletcher Kimura  
 Cell ( 808 ) 542 - 3752  
 Email fletcher.kimura@aecom.com  
 Fax ( 808 ) 523 - 8950

Project Name/Number 60340502.0500 Project Location DOD Demo, Honolulu, Hawaii

- |                                       |                                     |  |   |                               |   |                                 |
|---------------------------------------|-------------------------------------|--|---|-------------------------------|---|---------------------------------|
| <input type="checkbox"/> Total Metals | <input type="checkbox"/> FAA (ppm)  | <input type="checkbox"/> Air Filter                          | <input checked="" type="checkbox"/> Paint Chips (%) | <input type="checkbox"/> Soil | RCRA 8  | RCRA 11                         |
| <input type="checkbox"/> TCLP         | <input type="checkbox"/> ICP (PPM)  | <input type="checkbox"/> Paint Chips (cm)                    | <input type="checkbox"/> Dust Wipes                 |                               | <input type="checkbox"/> Barium <input type="checkbox"/> Chromium <input type="checkbox"/> Silver | <input type="checkbox"/> Copper |
|                                       | <input type="checkbox"/> GFAA (ppb) | <input type="checkbox"/> Drinking Water                      | <input type="checkbox"/> Waste Water                |                               | <input type="checkbox"/> Arsenic <input type="checkbox"/> Mercury <input type="checkbox"/> Lead   | <input type="checkbox"/> Zinc   |
|                                       | <input type="checkbox"/> CVAA (ppb) | <input checked="" type="checkbox"/> Other <u>% by weight</u> |   |                               | <input type="checkbox"/> Selenium <input type="checkbox"/> Cadmium                                | <input type="checkbox"/> Other  |

Reporting Instructions Report to Fletcher Kimura. Please cc teresa.quiniola@aecom.com  
 Call (    )     Fax (    )     Email fletcher.kimura@aecom.com

Total Number of Samples 44

Sample ID	Description	A/R
1	DH001P-016 Pink over green on concrete	
2	DH001P-017 Pink over light green on wood	
3	DH001P-018 Pink on metal	
4	DH001P-019 Dark brown on concrete	
5	DH001P-020 Light brown on concrete	
6	DH001P-021 Beige over light brown, blue and green on concrete	
7	DH001P-022 Beige on metal	
8	DH001P-023 Beige on drywall	
9	DH001P-024 White on drywall	
10	DH001P-025 Off-white on concrete	
11	DH001P-026 Dark gray on metal	
12	DH001P-027 Light gray on metal	
13	DH001P-028 Dark salmon on concrete	
14	DH001P-029 Dark salmon over white on wood	
15	DH001P-030 Black on metal	

	Print Name	Signature	Company	Date	Time
Sampled by	Teresa Quiniola		AECOM	7-Apr-15, 8-Apr-15	13:06
Relinquish by	Fletcher Kimura		AECOM	10-Apr-15	12:30 pm

**Office Use Only**

	Print Name	Signature	Company	Date	Time
Received by	<u>Manoj</u>		<u>NV</u>	<u>4/13/15</u>	<u>9:00 Fed Exp</u>
Analyzed by	<u>Shalini Patel</u>		<u>NV</u>	<u>4/15/15</u>	<u>1:30</u>
Called by					
Faxed/Email by					



April 15, 2015

Fletcher Kimura  
**AECOM**  
1001 Bishop Street, Suite 1600  
Honolulu, HI 96813



Laboratory | Management | Training

**RE: Metals Analysis; NVL Batch # 1506652.00**

Dear Mr. Kimura,

Enclosed please find the test results for samples submitted to our laboratory for analysis. Preparation of these samples was conducted following protocol outlined in EPA Method SW 846 -3051 unless stated otherwise. Analysis of these samples was performed using analytical instruments in accordance with U.S. EPA, NIOSH, OSHA and other ASTM methods.

For matrix materials submitted as paint, dust wipe, soil or TCLP samples, analysis for the presence of total metals is conducted using published U.S. EPA Methods. Paint and soil results are usually expressed in mg/Kg which is equivalent to parts per million (ppm). Lead (Pb) in paint is usually expressed in mg/Kg (ppm), Percent (%) or mg/cm<sup>2</sup> by area. Dust wipe sample results are usually expressed in ug/wipe and ug/ft<sup>2</sup>. TCLP samples are reported in mg/L (ppm). For air filter samples, analyses are conducted using NIOSH and OSHA Methods. Results are expressed in ug/filter and ug/m<sup>3</sup>. Other matrix materials are analyzed accordingly using published methods or specified by client. The reported test results pertain only to items tested. Lead test results are not blank corrected.

For recent regulation updates pertaining to current regulatory levels or permissible exposure levels, please call your local regulatory agencies for more details.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. If you need further assistance please feel free to call us at 206-547-0100 or 1-888-NVLLABS.

Sincerely,

  
Nick Ly, Technical Director



**1.888.NVL.LABS**  
1.888.(685.5227)  
www.nvllabs.com

NVL Laboratories, Inc.  
4708 Aurora Ave N, Seattle, WA 98103  
p 206.547.0100 | f 206.634.1936

# Analysis Report

## Total Metals

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii

Batch #: 1506652.00

Matrix: Paint

Method: EPA 3051/6010C

Client Project #: 60340502.0500

Date Received: 4/13/2015

Samples Received: 14

Samples Analyzed: 14

Lab ID	Client Sample #	Elements	Sample wt (g)	RL mg / kg	Results in mg / kg	Results in ppm	Results in percent
15037063	DH001P-031	Lead (Pb)	0.1811	22.0	5800.0	5800.0	0.5800
15037064	DH001P-033	Lead (Pb)	0.2062	19.0	91.0	91.0	0.0091
15037065	DH001P-034	Lead (Pb)	0.2010	20.0	32.0	32.0	0.0032
15037066	DH001P-035	Lead (Pb)	0.2009	20.0	50000.0	50000.0	5.0000
15037067	DH001P-036	Lead (Pb)	0.2165	18.0	350.0	350.0	0.0350
15037068	DH001P-037	Lead (Pb)	0.2003	20.0	57000.0	57000.0	5.7000
15037069	DH001P-038	Lead (Pb)	0.2394	17.0	60.0	60.0	0.0060
15037070	DH001P-039	Lead (Pb)	0.1931	21.0	170.0	170.0	0.0170
15037071	DH001P-040	Lead (Pb)	0.2022	20.0	960.0	960.0	0.0960
15037072	DH001P-041	Lead (Pb)	0.2005	20.0	11000.0	11000.0	1.1000
15037073	DH001P-042	Lead (Pb)	0.1967	20.0	4700.0	4700.0	0.4700
15037074	DH001P-043	Lead (Pb)	0.2047	20.0	30.0	30.0	0.0030
15037075	DH001P-044	Lead (Pb)	0.2174	18.0	310.0	310.0	0.0310
15037076	DH001P-045	Lead (Pb)	0.2275	18.0	1700.0	1700.0	0.1700

Sampled by: Client

Analyzed by: Shalini Patel

Reviewed by: Nick Ly

Date Analyzed: 04/15/2015

Date Issued: 04/15/2015



Nick Ly, Technical Director

mg/ kg = Milligrams per kilogram

ppm = Parts per million

Note : Method QC results are acceptable unless stated otherwise.

Unless otherwise indicated, the condition of all samples was acceptable at time of receipt.

RL = Reporting Limit

'<' = Below the reporting Limit





# METALS CHAIN OF CUSTODY

# 1506652

Turn Around Time

- 2 Hour
- 2 Days
- 5 Days
- 3 Days
- 6-10 Days
- 4 Days

Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company AECOM  
 Address 1001 Bishop Street, Suite 1600  
Honolulu, Hawaii 96813  
 Phone (808) 954-4536

Project Manager Fletcher Kimura  
 Cell ( 808 ) 542 - 3752  
 Email fletcher.kimura@aecom.com  
 Fax ( 808 ) 523 - 8950

Project Name/Number 60340502.0500 Project Location DOD Demo, Honolulu, Hawaii

- |                                       |                                     |  |   |                               |                                   |                                   |                                      |                                 |
|---------------------------------------|-------------------------------------|--|---|-------------------------------|-----------------------------------|-----------------------------------|--------------------------------------|---------------------------------|
| <input type="checkbox"/> Total Metals | <input type="checkbox"/> FAA (ppm)  | <input type="checkbox"/> Air Filter                          | <input checked="" type="checkbox"/> Paint Chips (%) | <input type="checkbox"/> Soil | RCRA 8                            | RCRA 11                           |                                      |                                 |
| <input type="checkbox"/> TCLP         | <input type="checkbox"/> ICP (PPM)  | <input type="checkbox"/> Paint Chips (cm)                    | <input type="checkbox"/> Dust Wipes                 |                               | <input type="checkbox"/> Barium   | <input type="checkbox"/> Chromium | <input type="checkbox"/> Silver      | <input type="checkbox"/> Copper |
|                                       | <input type="checkbox"/> GFAA (ppb) | <input type="checkbox"/> Drinking Water                      | <input type="checkbox"/> Waste Water                |                               | <input type="checkbox"/> Arsenic  | <input type="checkbox"/> Mercury  | <input type="checkbox"/> Lead        | <input type="checkbox"/> Zinc   |
|                                       | <input type="checkbox"/> CVAA (ppb) | <input checked="" type="checkbox"/> Other <u>% by weight</u> |   |                               | <input type="checkbox"/> Selenium | <input type="checkbox"/> Cadmium  | <input type="checkbox"/> Other _____ |                                 |

Reporting Instructions Report to Fletcher Kimura. Please cc teresa.quiniola@aecom.com  
 Call ( ) -  Fax ( ) -  Email fletcher.kimura@aecom.com

**Total Number of Samples** 44

Sample ID	Description	A/R
1	DH001P-031 Red on metal	
2	DH001P-033 Dark brown over gray on metal	
3	DH001P-034 Off-white over light green on concrete	
4	DH001P-035 Yellow on concrete	
5	DH001P-036 Tan on wood	
6	DH001P-037 Yellow over orange on metal	
7	DH001P-038 White on asphalt	
8	DH001P-039 Black over blue on concrete	
9	DH001P-040 Blue on concrete	
10	DH001P-041 Red over blue on concrete	
11	DH001P-042 White on metal	
12	DH001P-043 Gray on asphalt	
13	DH001P-044 Off-white over light green on metal	
14	DH001P-045 Off-white on wood	
15		

	Print Name	Signature	Company	Date	Time
Sampled by	Teresa Quiniola	<i>Teresa Quiniola</i>	AECOM	7-Apr-15, 8-Apr-15	13:06
Relinquish by	Fletcher Kimura	<i>Fletcher Kimura</i>	AECOM	10-Apr-15	12:30 pm

**Office Use Only**

	Print Name	Signature	Company	Date	Time
Received by	<i>Max</i>	<i>[Signature]</i>	<i>NVL</i>	<i>4/13/15</i>	<i>9:00 PM</i>
Analyzed by	<i>Shalini Patel</i>	<i>[Signature]</i>	<i>NVL</i>	<i>4/15/15</i>	<i>12:00</i>
Called by					
Faxed/Email by					





May 13, 2015

Fletcher Kimura  
**AECOM**  
1001 Bishop Street, Suite 1600  
Honolulu, HI 96813



Laboratory | Management | Training

**RE: Metals Analysis; NVL Batch # 1507816.00**

Dear Mr. Kimura,

Enclosed please find the test results for samples submitted to our laboratory for analysis. Preparation of these samples was conducted following protocol outlined in EPA Method SW 846 -3051 unless stated otherwise. Analysis of these samples was performed using analytical instruments in accordance with U.S. EPA, NIOSH, OSHA and other ASTM methods.

For matrix materials submitted as paint, dust wipe, soil or TCLP samples, analysis for the presence of total metals is conducted using published U.S. EPA Methods. Paint and soil results are usually expressed in mg/Kg which is equivalent to parts per million (ppm). Lead (Pb) in paint is usually expressed in mg/Kg (ppm), Percent (%) or mg/cm<sup>2</sup> by area. Dust wipe sample results are usually expressed in ug/wipe and ug/ft<sup>2</sup>. TCLP samples are reported in mg/L (ppm). For air filter samples, analyses are conducted using NIOSH and OSHA Methods. Results are expressed in ug/filter and ug/m<sup>3</sup>. Other matrix materials are analyzed accordingly using published methods or specified by client. The reported test results pertain only to items tested and are not blank corrected.

For recent regulation updates pertaining to current regulatory levels or permissible exposure levels, please call your local regulatory agencies for more details.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. If you need further assistance please feel free to call us at 206-547-0100 or 1-888-NVLLABS.

Sincerely,

A handwritten signature in black ink, appearing to read 'Nick Ly', written over a circular stamp or watermark.

Nick Ly, Technical Director



LAB # 101861

**1.888.NVL.LABS**  
1.888.(685.5227)  
www.nvllabs.com

NVL Laboratories, Inc.  
4708 Aurora Ave N, Seattle, WA 98103  
p 206.547.0100 | f 206.634.1936

# Analysis Report

## Total Metals

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii.

**Batch #: 1507816.00**

Matrix: Paint

Method: EPA 3051/6010C

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 1

Samples Analyzed: 1

Lab ID	Client Sample #	Elements	Sample wt (g)	RL mg / kg	Results in mg / kg	Results in ppm	Results in percent
15043002	DH001P-032	Lead (Pb)	0.2184	18.0	230.0	230.0	0.0230

Sampled by: Client

Analyzed by: Shalini Patel

Reviewed by: Nick Ly

Date Analyzed: 05/12/2015

Date Issued: 05/13/2015

  
Nick Ly, Technical Director

mg/ kg = Milligrams per kilogram

ppm = Parts per million

Note : Method QC results are acceptable unless stated otherwise.

Unless otherwise indicated, the condition of all samples was acceptable at time of receipt.

RL = Reporting Limit

'<' = Below the reporting Limit



# METALS CHAIN OF CUSTODY

# 1507816

Turn Around Time

- 2 Hour     4 Hours     24 Hours  
 2 Days     3 Days     4 Days  
 5 Days     6-10 Days  
 Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company AECOM  
 Address 1001 Bishop Street, Suite 1600  
Honolulu, Hawaii 96813  
 Phone (808) 954-4536

Project Manager Fletcher Kimura  
 Cell ( 808 ) 542 - 3752  
 Email fletcher.kimura@aecom.com  
 Fax ( 808 ) 523 - 8950

Project Name/Number 60340502.0500 Project Location DOD Demo, Honolulu, Hawaii

- |                                       |   |   |   |                               |   |                                      |
|---------------------------------------|---|---|---|-------------------------------|---|--------------------------------------|
| <input type="checkbox"/> Total Metals | <input type="checkbox"/> FAA (ppm)            | <input type="checkbox"/> Air Filter             | <input checked="" type="checkbox"/> Paint Chips (%) | <input type="checkbox"/> Soil | RCRA 8  | RCRA 11                              |
| <input type="checkbox"/> TCLP         | <input checked="" type="checkbox"/> ICP (PPM) | <input type="checkbox"/> Paint Chips (cm)       | <input type="checkbox"/> Dust Wipes                 |                               | <input type="checkbox"/> Barium <input type="checkbox"/> Chromium <input type="checkbox"/> Silver | <input type="checkbox"/> Copper      |
|                                       | <input type="checkbox"/> GFAA (ppb)           | <input type="checkbox"/> Drinking Water         | <input type="checkbox"/> Waste Water                |                               | <input type="checkbox"/> Arsenic <input type="checkbox"/> Mercury <input type="checkbox"/> Lead   | <input type="checkbox"/> Zinc        |
|                                       | <input type="checkbox"/> CVAA (ppb)           | <input checked="" type="checkbox"/> Other _____ |   |                               | <input type="checkbox"/> Selenium <input type="checkbox"/> Cadmium                                | <input type="checkbox"/> Other _____ |

Reporting Instructions Report to Fletcher Kimura. Please cc teresa.quiniola@aecom.com  
 Call (    )    -     Fax (    )    -     Email fletcher.kimura@aecom.com

Total Number of Samples 1

Sample ID	Description	A/R
1	DH001P-032 White paint on acoustic ceiling tile	
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

	Print Name	Signature	Company	Date	Time
Sampled by	Fletcher Kimura		AECOM	4/24/15	13:30
Relinquish by	Fletcher Kimura		AECOM	4/29/15	11:00 am

**Office Use Only**

	Print Name	Signature	Company	Date	Time
Received by			NVL Labs	4/30/15	9:15 am
Analyzed by	Shalim Patel		NA	5/12/15	11:00
Called by					
Faxed/Email by					

**To:** Kimura, Fletcher  
**Cc:** Quiniola, Teresa; Client Services  
**Subject:** RE: Incoming Asbestos and Lead Samples

Thank you for the information, we will follow your instructions while processing your samples.


Thanks and regards.

Shaista Khan  
**General Manager**  
 NVL Laboratories, Inc.

**Email:** [Shaista.K@nvlabs.com](mailto:Shaista.K@nvlabs.com)  
**Mobile:** 206-799-2988



4708 Aurora Ave N  
 Seattle, WA 98103  
 1.888.NVL.LABS (685.5227)  
 Tel: 206.547.0100  
 Fax: 206.634.1936  
[www.nvlabs.com](http://www.nvlabs.com)

 Please consider the environment before printing this email message.

**Disclaimer:**

This message contains confidential information and is intended only for use by the intended recipients. If you are not the intended recipient you should not disseminate, distribute or copy this e-mail. Please notify the sender immediately by e-mail if you have received this e-mail by mistake and delete this e-mail from your system. E-mail transmission cannot be guaranteed to be secure or error-free as information could be intercepted, corrupted, lost, destroyed, arrive late or incomplete, or contain viruses. The sender therefore does not accept liability for any errors or omissions in the contents of this message, which arise as a result of e-mail transmission. If verification is required please request a hard-copy version.

**From:** Kimura, Fletcher [<mailto:Fletcher.Kimura@aecom.com>]  
**Sent:** Wednesday, April 29, 2015 3:55 PM  
**To:** Shaista Khan  
**Cc:** Quiniola, Teresa  
**Subject:** Incoming Asbestos and Lead Samples

Hi Shaista,

We have just sent a shipment of asbestos and lead samples. There are 275 asbestos samples on a 5 day TAT and 75 lead samples on a 6-10 day TAT. I've attached scans of the COCs. Like the last time, please stop after first positive on the asbestos analyses and please analyze the lead by ICP and report lead content in % by weight.

Please feel free to contact me with any questions or concerns!

Thanks!

**Fletcher M. Kimura, Ph.D.**  
 Environmental Scientist  
 Environment, West Region, Pacific District  
 Direct Line: 808.954.4536  
[fletcher.kimura@aecom.com](mailto:fletcher.kimura@aecom.com)

AECOM Technical Services  
 1001 Bishop Street, Suite 1600, Honolulu, Hawaii 96813-3698  
 T. 808.523.8874 F 808.523.8950  
[www.aecom.com](http://www.aecom.com)

May 4, 2015

Fletcher Kimura  
**AECOM**  
1001 Bishop Street, Suite 1600  
Honolulu, HI 96813



Laboratory | Management | Training

**RE: Metals Analysis; NVL Batch # 1507809.00**

Dear Mr. Kimura,

Enclosed please find the test results for samples submitted to our laboratory for analysis. Preparation of these samples was conducted following protocol outlined in EPA Method SW 846 -3051 unless stated otherwise. Analysis of these samples was performed using analytical instruments in accordance with U.S. EPA, NIOSH, OSHA and other ASTM methods.

For matrix materials submitted as paint, dust wipe, soil or TCLP samples, analysis for the presence of total metals is conducted using published U.S. EPA Methods. Paint and soil results are usually expressed in mg/Kg which is equivalent to parts per million (ppm). Lead (Pb) in paint is usually expressed in mg/Kg (ppm), Percent (%) or mg/cm<sup>2</sup> by area. Dust wipe sample results are usually expressed in ug/wipe and ug/ft<sup>2</sup>. TCLP samples are reported in mg/L (ppm). For air filter samples, analyses are conducted using NIOSH and OSHA Methods. Results are expressed in ug/filter and ug/m<sup>3</sup>. Other matrix materials are analyzed accordingly using published methods or specified by client. The reported test results pertain only to items tested and are not blank corrected.

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Thank you for using our laboratory services. If you need further assistance please feel free to call us at 206-547-0100 or 1-888-NVLLABS.

Sincerely,

A handwritten signature in black ink, appearing to read 'Nick Ly', is written over a white background.

Nick Ly, Technical Director



**1.888.NVL.LABS**  
1.888.(685.5227)  
www.nvllabs.com

NVL Laboratories, Inc.  
4708 Aurora Ave N, Seattle, WA 98103  
p 206.547.0100 | f 206.634.1936



# Analysis Report

## Total Metals

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii.

**Batch #: 1507809.00**

Matrix: Paint

Method: EPA 3051/6010C

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 15

Samples Analyzed: 15

Lab ID	Client Sample #	Elements	Sample wt (g)	RL mg / kg	Results in mg / kg	Results in ppm	Results in percent
15042912	DH002P-001	Lead (Pb)	0.2067	19.0	4500.0	4500.0	0.4500
15042913	DH002P-002	Lead (Pb)	0.1975	20.0	3700.0	3700.0	0.3700
15042914	DH002P-003	Lead (Pb)	0.1953	20.0	49000.0	49000.0	4.9000
15042915	DH002P-004	Lead (Pb)	0.1908	21.0	80.0	80.0	0.0080
15042916	DH002P-005	Lead (Pb)	0.2075	19.0	270.0	270.0	0.0270
15042917	DH002P-006	Lead (Pb)	0.2090	19.0	140.0	140.0	0.0140
15042918	DH002P-007	Lead (Pb)	0.0853	47.0	< 47.0	< 47.0	< 0.0047
15042919	DH002P-008	Lead (Pb)	0.1887	21.0	26.0	26.0	0.0026
15042920	DH002P-009	Lead (Pb)	0.1965	20.0	< 20.0	< 20.0	< 0.0020
15042921	DH002P-010	Lead (Pb)	0.2074	19.0	< 19.0	< 19.0	< 0.0019
15042922	DH002P-011	Lead (Pb)	0.2036	20.0	1900.0	1900.0	0.1900
15042923	DH002P-012	Lead (Pb)	0.2028	20.0	1700.0	1700.0	0.1700
15042924	DH002P-013	Lead (Pb)	0.2067	19.0	2000.0	2000.0	0.2000
15042925	DH002P-014	Lead (Pb)	0.1944	21.0	680.0	680.0	0.0680
15042926	DH002P-015	Lead (Pb)	0.2062	19.0	6600.0	6600.0	0.6600

Sampled by: Client

Analyzed by: Yasuyuki Hida

Reviewed by: Nick Ly

Date Analyzed: 05/04/2015

Date Issued: 05/04/2015



Nick Ly, Technical Director

RL = Reporting Limit

'<' = Below the reporting Limit

mg/ kg = Milligrams per kilogram

ppm = Parts per million

Note : Method QC results are acceptable unless stated otherwise.

Unless otherwise indicated, the condition of all samples was acceptable at time of receipt.





# METALS CHAIN OF CUSTODY

# 1507809

Turn Around Time:

- 2 Hour       4 Hours       24 Hours  
 2 Days       3 Days       4 Days  
 5 Days       6-10 Days  
 Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company AECOM  
 Address 1001 Bishop Street, Suite 1600  
Honolulu, Hawaii 96813  
 Phone (808) 954-4536

Project Manager Fletcher Kimura  
 Cell ( 808 ) 542 - 3752  
 Email fletcher.kimura@aecom.com  
 Fax ( 808 ) 523 - 8950

Project Name/Number 60340502.0500 Project Location DOD Demo, Honolulu, Hawaii

- |                                       |   |   |   |                               |                                   |                                   |                                 |                                 |
|---------------------------------------|---|---|---|-------------------------------|-----------------------------------|-----------------------------------|---------------------------------|---------------------------------|
| <input type="checkbox"/> Total Metals | <input type="checkbox"/> FAA (ppm)            | <input type="checkbox"/> Air Filter       | <input checked="" type="checkbox"/> Paint Chips (%) | <input type="checkbox"/> Soil | RCRA 8                            | RCRA 11                           |                                 |                                 |
| <input type="checkbox"/> TCLP         | <input checked="" type="checkbox"/> ICP (PPM) | <input type="checkbox"/> Paint Chips (cm) | <input type="checkbox"/> Dust Wipes                 |                               | <input type="checkbox"/> Barium   | <input type="checkbox"/> Chromium | <input type="checkbox"/> Silver | <input type="checkbox"/> Copper |
|                                       | <input type="checkbox"/> GFAA (ppb)           | <input type="checkbox"/> Drinking Water   | <input type="checkbox"/> Waste Water                |                               | <input type="checkbox"/> Arsenic  | <input type="checkbox"/> Mercury  | <input type="checkbox"/> Lead   | <input type="checkbox"/> Zinc   |
|                                       | <input type="checkbox"/> CVAA (ppb)           | <input checked="" type="checkbox"/> Other |   |                               | <input type="checkbox"/> Selenium | <input type="checkbox"/> Cadmium  |                                 | <input type="checkbox"/> Other  |

Reporting Instructions Report to Fletcher Kimura. Please cc teresa.quiniola@aecom.com  
 Call ( ) -       Fax ( ) -       Email fletcher.kimura@aecom.com

Total Number of Samples 74

Sample ID	Description	A/R
1	DH002P-001 Green paint on metal	
2	DH002P-002 Black paint on metal	
3	DH002P-003 Yellow paint over green paint on metal	
4	DH002P-004 Green paint on concrete and CMU	
5	DH002P-005 White paint on concrete and CMU	
6	DH002P-006 Red over pink and green paint on concrete	
7	DH002P-007 Gray paint on metal	
8	DH002P-008 White paint on metal	
9	DH002P-009 Light blue paint on drywall	
10	DH002P-010 Light blue paint on wood	
11	DH002P-011 Green paint on drywall	
12	DH002P-012 White paint on drywall	
13	DH002P-013 Blue paint on metal	
14	DH002P-014 Green paint on wood	
15	DH002P-015 Beige over dark brown paint on metal	

	Print Name	Signature	Company	Date	Time
Sampled by	Teresa Quiniola		AECOM	4/15, 4/16, 4/21/15	--
Relinquish by	Fletcher Kimura		AECOM	4/29/15	11:00 am

Office Use Only

	Print Name	Signature	Company	Date	Time
Received by			NVL Labs	4/30/15	9:30 am
Analyzed by	Yasuyuki Hida			5/4/15	12:00
Called by					
Faxed/Email by					



May 7, 2015

Fletcher Kimura  
**AECOM**  
1001 Bishop Street, Suite 1600  
Honolulu, HI 96813



Laboratory | Management | Training

**RE: Metals Analysis; NVL Batch # 1507810.00**

Dear Mr. Kimura,

Enclosed please find the test results for samples submitted to our laboratory for analysis. Preparation of these samples was conducted following protocol outlined in EPA Method SW 846 -3051 unless stated otherwise. Analysis of these samples was performed using analytical instruments in accordance with U.S. EPA, NIOSH, OSHA and other ASTM methods.

For matrix materials submitted as paint, dust wipe, soil or TCLP samples, analysis for the presence of total metals is conducted using published U.S. EPA Methods. Paint and soil results are usually expressed in mg/Kg which is equivalent to parts per million (ppm). Lead (Pb) in paint is usually expressed in mg/Kg (ppm), Percent (%) or mg/cm<sup>2</sup> by area. Dust wipe sample results are usually expressed in ug/wipe and ug/ft<sup>2</sup>. TCLP samples are reported in mg/L (ppm). For air filter samples, analyses are conducted using NIOSH and OSHA Methods. Results are expressed in ug/filter and ug/m<sup>3</sup>. Other matrix materials are analyzed accordingly using published methods or specified by client. The reported test results pertain only to items tested and are not blank corrected.

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This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. If you need further assistance please feel free to call us at 206-547-0100 or 1-888-NVLLABS.

Sincerely,

A handwritten signature in black ink, appearing to read 'Nick Ly', is written over a circular stamp that is partially obscured.

Nick Ly, Technical Director

**1.888.NVL.LABS**  
1.888.(685.5227)  
www.nvllabs.com



NVL Laboratories, Inc.  
4708 Aurora Ave N, Seattle, WA 98103  
p 206.547.0100 | f 206.634.1936

# Analysis Report

## Total Metals

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: Mr. Fletcher Kimura

Project Location: DOD Demo, Honolulu, Hawaii.

Batch #: 1507810.00

Matrix: Paint

Method: EPA 3051/6010C

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 15

Samples Analyzed: 15

Lab ID	Client Sample #	Elements	Sample wt (g)	RL mg / kg	Results in mg / kg	Results in ppm	Results in percent
15042927	DH002P-016	Lead (Pb)	0.1845	22.0	14000.0	14000.0	1.4000
15042928	DH002P-017	Lead (Pb)	0.1984	20.0	140.0	140.0	0.0140
15042929	DH002P-018	Lead (Pb)	0.2031	20.0	210.0	210.0	0.0210
15042930	DH002P-019	Lead (Pb)	0.2026	20.0	100.0	100.0	0.0100
15042931	DH002P-020	Lead (Pb)	0.2126	19.0	30.0	30.0	0.0030
15042932	DH002P-021	Lead (Pb)	0.2943	14.0	< 14.0	< 14.0	< 0.0014
15042933	DH002P-022	Lead (Pb)	0.1920	21.0	1700.0	1700.0	0.1700
15042934	DH002P-023	Lead (Pb)	0.2037	20.0	55.0	55.0	0.0055
15042935	DH002P-024	Lead (Pb)	0.2156	19.0	250.0	250.0	0.0250
15042936	DH002P-025	Lead (Pb)	0.2009	20.0	750.0	750.0	0.0750
15042937	DH002P-026	Lead (Pb)	0.2066	19.0	480.0	480.0	0.0480
15042938	DH002P-027	Lead (Pb)	0.2250	18.0	140.0	140.0	0.0140
15042939	DH002P-028	Lead (Pb)	0.2082	19.0	290.0	290.0	0.0290
15042940	DH002P-029	Lead (Pb)	0.2278	18.0	< 18.0	< 18.0	< 0.0018
15042941	DH002P-030	Lead (Pb)	0.2102	19.0	< 19.0	< 19.0	< 0.0019

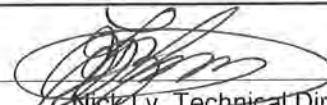
Sampled by: Client

Analyzed by: Yasuyuki Hida

Reviewed by: Nick Ly

Date Analyzed: 05/07/2015

Date Issued: 05/07/2015



Nick Ly, Technical Director

mg/ kg = Milligrams per kilogram

ppm = Parts per million

Note : Method QC results are acceptable unless stated otherwise.

Unless otherwise indicated, the condition of all samples was acceptable at time of receipt.

RL = Reporting Limit

'<' = Below the reporting Limit





# METALS CHAIN OF CUSTODY

# 1507810

Turn Around Time

- 2 Hour     
  2 Days     
  3 Days     
  4 Days  
 5 Days     
  6-10 Days  
 Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company AECOM  
 Address 1001 Bishop Street, Suite 1600  
Honolulu, Hawaii 96813  
 Phone (808) 954-4536

Project Manager Fletcher Kimura  
 Cell (808) 542-3752  
 Email fletcher.kimura@aecom.com  
 Fax (808) 523-8950

Project Name/Number 60340502.0500      Project Location DOD Demo, Honolulu, Hawaii

- |                                       |   |   |   |                               |                                   |                                   |                                 |                                      |
|---------------------------------------|---|---|---|-------------------------------|-----------------------------------|-----------------------------------|---------------------------------|--------------------------------------|
| <input type="checkbox"/> Total Metals | <input type="checkbox"/> FAA (ppm)            | <input type="checkbox"/> Air Filter             | <input checked="" type="checkbox"/> Paint Chips (%) | <input type="checkbox"/> Soil | RCRA 8                            | RCRA 11                           |                                 |                                      |
| <input type="checkbox"/> TCLP         | <input checked="" type="checkbox"/> ICP (PPM) | <input type="checkbox"/> Paint Chips (cm)       | <input type="checkbox"/> Dust Wipes                 |                               | <input type="checkbox"/> Barium   | <input type="checkbox"/> Chromium | <input type="checkbox"/> Silver | <input type="checkbox"/> Copper      |
|                                       | <input type="checkbox"/> GFAA (ppb)           | <input type="checkbox"/> Drinking Water         | <input type="checkbox"/> Waste Water                |                               | <input type="checkbox"/> Arsenic  | <input type="checkbox"/> Mercury  | <input type="checkbox"/> Lead   | <input type="checkbox"/> Zinc        |
|                                       | <input type="checkbox"/> CVAA (ppb)           | <input checked="" type="checkbox"/> Other _____ |   |                               | <input type="checkbox"/> Selenium | <input type="checkbox"/> Cadmium  |                                 | <input type="checkbox"/> Other _____ |

Reporting Instructions Report to Fletcher Kimura. Please cc teresa.quiniola@aecom.com  
 Call ( ) -     
  Fax ( ) -     
  Email fletcher.kimura@aecom.com

**Total Number of Samples** 74

Sample ID	Description	A/R
1	DH002P-016	Dark blue paint on metal
2	DH002P-017	Light blue paint on concrete
3	DH002P-018	Beige paint on concrete
4	DH002P-019	Beige paint on wood
5	DH002P-020	Beige paint on drywall
6	DH002P-021	Yellow 12"x6" tile
7	DH002P-022	Beige paint on glass
8	DH002P-023	White paint on glass
9	DH002P-024	White over green paint on wood
10	DH002P-025	Red paint on metal
11	DH002P-026	Pink paint on wood
12	DH002P-027	Pink paint on metal
13	DH002P-028	Pink paint on concrete
14	DH002P-029	Beige 6"x6" tile
15	DH002P-030	Mosaic tile

	Print Name	Signature	Company	Date	Time
Sampled by	Teresa Quiniola and Fletcher Kimura		AECOM	4/16, 4/21/15	--
Relinquish by	Fletcher Kimura		AECOM	4/29/15	11:00 am

**Office Use Only**

	Print Name	Signature	Company	Date	Time
Received by	<u>Yasuyuki Hida</u>		<u>NVL Labs</u>	<u>4/30/15</u>	<u>9:50 am</u>
Analyzed by	<u>Yasuyuki Hida</u>		<u>NVL Labs</u>	<u>5/7/15</u>	<u>12:20</u>
Called by					
Faxed/Email by					





May 13, 2015

Fletcher Kimura  
**AECOM**  
1001 Bishop Street, Suite 1600  
Honolulu, HI 96813



Laboratory | Management | Training

**RE: Metals Analysis; NVL Batch # 1507811.00**

Dear Mr. Kimura,

Enclosed please find the test results for samples submitted to our laboratory for analysis. Preparation of these samples was conducted following protocol outlined in EPA Method SW 846 -3051 unless stated otherwise. Analysis of these samples was performed using analytical instruments in accordance with U.S. EPA, NIOSH, OSHA and other ASTM methods.

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Sincerely,

A handwritten signature in black ink, appearing to read 'Nick Ly', written over a circular stamp.

Nick Ly, Technical Director



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1.888.(685.5227)  
www.nvllabs.com

NVL Laboratories, Inc.  
4708 Aurora Ave N, Seattle, WA 98103  
p 206.547.0100 | f 206.634.1936

# Analysis Report

## Total Metals

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: **Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii.

**Batch #: 1507811.00**

Matrix: Paint

Method: EPA 3051/6010C

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 15

Samples Analyzed: 15

Lab ID	Client Sample #	Elements	Sample wt (g)	RL mg / kg	Results in mg / kg	Results in ppm	Results in percent
15042942	DH002P-031	Lead (Pb)	0.2036	20.0	35.0	35.0	0.0035
15042943	DH002P-032	Lead (Pb)	0.2336	17.0	< 17.0	< 17.0	< 0.0017
15042944	DH002P-033	Lead (Pb)	0.2152	19.0	510.0	510.0	0.0510
15042945	DH002P-034	Lead (Pb)	0.2190	18.0	20000.0	20000.0	20.0000
15042946	DH002P-035	Lead (Pb)	0.2047	20.0	99.0	99.0	0.0099
15042947	DH002P-036	Lead (Pb)	0.2043	20.0	1400.0	1400.0	0.1400
15042948	DH002P-037	Lead (Pb)	0.2012	20.0	1500.0	1500.0	0.1500
15042949	DH002P-038	Lead (Pb)	0.2110	19.0	50000.0	50000.0	5.0000
15042950	DH002P-039	Lead (Pb)	0.2168	18.0	200.0	200.0	0.0200
15042951	DH002P-040	Lead (Pb)	0.2133	19.0	24000.0	24000.0	2.4000
15042952	DH002P-041	Lead (Pb)	0.2053	19.0	5100.0	5100.0	0.5100
15042953	DH002P-042	Lead (Pb)	0.2082	19.0	320.0	320.0	0.0320
15042954	DH002P-043	Lead (Pb)	0.2055	19.0	570.0	570.0	0.0570
15042955	DH002P-044	Lead (Pb)	0.2004	20.0	43000.0	43000.0	4.3000
15042956	DH002P-045	Lead (Pb)	0.2160	19.0	1400.0	1400.0	0.1400

Sampled by: Client

Analyzed by: Shalini Patel

Reviewed by: Nick Ly

Date Analyzed: 05/12/2015

Date Issued: 05/13/2015



Nick Ly, Technical Director

mg/ kg = Milligrams per kilogram

ppm = Parts per million

Note : Method QC results are acceptable unless stated otherwise.

Unless otherwise indicated, the condition of all samples was acceptable at time of receipt.

RL = Reporting Limit

'<' = Below the reporting Limit



# METALS CHAIN OF CUSTODY

# 1507811

Turn Around Time

- 2 Hour       4 Hours       24 Hours
  - 2 Days       3 Days       4 Days
  - 5 Days       6-10 Days
- Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company AECOM  
 Address 1001 Bishop Street, Suite 1600  
Honolulu, Hawaii 96813  
 Phone (808) 954-4536

Project Manager Fletcher Kimura  
 Cell ( 808 ) 542 - 3752  
 Email fletcher.kimura@aecom.com  
 Fax ( 808 ) 523 - 8950

Project Name/Number 60340502.0500 Project Location DOD Demo, Honolulu, Hawaii

- |                                       |   |   |   |                               |                                   |                                   |                                 |                                 |
|---------------------------------------|---|---|---|-------------------------------|-----------------------------------|-----------------------------------|---------------------------------|---------------------------------|
| <input type="checkbox"/> Total Metals | <input type="checkbox"/> FAA (ppm)            | <input type="checkbox"/> Air Filter       | <input checked="" type="checkbox"/> Paint Chips (%) | <input type="checkbox"/> Soil | RCRA 8                            | RCRA 11                           |                                 |                                 |
| <input type="checkbox"/> TCLP         | <input checked="" type="checkbox"/> ICP (PPM) | <input type="checkbox"/> Paint Chips (cm) | <input type="checkbox"/> Dust Wipes                 |                               | <input type="checkbox"/> Barium   | <input type="checkbox"/> Chromium | <input type="checkbox"/> Silver | <input type="checkbox"/> Copper |
|                                       | <input type="checkbox"/> GFAA (ppb)           | <input type="checkbox"/> Drinking Water   | <input type="checkbox"/> Waste Water                |                               | <input type="checkbox"/> Arsenic  | <input type="checkbox"/> Mercury  | <input type="checkbox"/> Lead   | <input type="checkbox"/> Zinc   |
|                                       | <input type="checkbox"/> CVAA (ppb)           | <input checked="" type="checkbox"/> Other |   |                               | <input type="checkbox"/> Selenium | <input type="checkbox"/> Cadmium  |                                 | <input type="checkbox"/> Other  |

Reporting Instructions Report to Fletcher Kimura. Please cc teresa.quiniola@aecom.com  
 Call ( ) -       Fax ( ) -       Email fletcher.kimura@aecom.com

Total Number of Samples 74

Sample ID	Description	A/R
1	DH002P-031 Tan 4"x4" tile	
2	DH002P-032 Dark brown paint on concrete	
3	DH002P-033 Light brown over green paint on metal	
4	DH002P-034 Yellow over black and red paint on metal	
5	DH002P-035 Yellow paint on concrete	
6	DH002P-036 Black over yellow and green paint on concrete	
7	DH002P-037 Light blue paint on metal	
8	DH002P-038 Silver paint on metal	
9	DH002P-039 Bright white paint on concrete	
10	DH002P-040 Dark yellow paint on metal	
11	DH002P-041 Sea green over red paint on metal	
12	DH002P-042 Sand paint on concrete	
13	DH002P-043 Light brown paint on concrete	
14	DH002P-044 Yellow paint on concrete	
15	DH002P-045 White over yellow paint on asphalt	

	Print Name	Signature	Company	Date	Time
Sampled by	Teresa Quiniola		AECOM	4/16, 4/17, 4/21, 4/24/15	--
Relinquish by	Fletcher Kimura		AECOM	4/29/15	11:00 am

**Office Use Only**

	Print Name	Signature	Company	Date	Time
Received by			NVL Labs	4/30/15	9:50 am
Analyzed by	Shalin Patel		NVL	5/12/15	1:20
Called by					
Faxed/Email by					



May 13, 2015

Fletcher Kimura  
**AECOM**  
1001 Bishop Street, Suite 1600  
Honolulu, HI 96813



Laboratory | Management | Training

**RE: Metals Analysis; NVL Batch # 1507812.00**

Dear Mr. Kimura,

Enclosed please find the test results for samples submitted to our laboratory for analysis. Preparation of these samples was conducted following protocol outlined in EPA Method SW 846 -3051 unless stated otherwise. Analysis of these samples was performed using analytical instruments in accordance with U.S. EPA, NIOSH, OSHA and other ASTM methods.

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Nick Ly, Technical Director



**1.888.NVL.LABS**  
1.888.(685.5227)  
www.nvllabs.com

NVL Laboratories, Inc.  
4708 Aurora Ave N, Seattle, WA 98103  
p 206.547.0100 | f 206.634.1936



# Analysis Report

## Total Metals

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Attention: **Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii.

**Batch #: 1507812.00**

Matrix: Paint

Method: EPA 3051/6010C

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 15

Samples Analyzed: 15

Lab ID	Client Sample #	Elements	Sample wt (g)	RL mg / kg	Results in mg / kg	Results in ppm	Results in percent
15042957	DH002P-046	Lead (Pb)	0.0975	41.0	< 41.0	< 41.0	< 0.0041
15042958	DH002P-047	Lead (Pb)	0.2100	19.0	10000.0	10000.0	1.0000
15042959	DH002P-048	Lead (Pb)	0.2067	19.0	480.0	480.0	0.0480
15042960	DH002P-049	Lead (Pb)	0.2015	20.0	880.0	880.0	0.0880
15042961	DH002P-050	Lead (Pb)	0.2027	20.0	50.0	50.0	0.0050
15042962	DH002P-051	Lead (Pb)	0.2143	19.0	420.0	420.0	0.0420
15042963	DH002P-052	Lead (Pb)	0.2124	19.0	19.0	19.0	0.0019
15042964	DH002P-053	Lead (Pb)	0.2159	19.0	5000.0	5000.0	0.5000
15042965	DH002P-054	Lead (Pb)	0.2251	18.0	18000.0	18000.0	1.8000
15042966	DH002P-055	Lead (Pb)	0.2228	18.0	4000.0	4000.0	0.4000
15042967	DH002P-056	Lead (Pb)	0.2010	20.0	50000.0	50000.0	5.0000
15042968	DH002P-057	Lead (Pb)	0.2071	19.0	13000.0	13000.0	1.3000
15042969	DH002P-058	Lead (Pb)	0.2309	17.0	< 17.0	< 17.0	< 0.0017
15042970	DH002P-059	Lead (Pb)	0.2056	19.0	570.0	570.0	0.0570
15042971	DH002P-060	Lead (Pb)	0.2179	18.0	23000.0	23000.0	2.3000

Sampled by: Client

Analyzed by: Shalini Patel

Reviewed by: Nick Ly

Date Analyzed: 05/12/2015

Date Issued: 05/13/2015



Nick Ly, Technical Director

mg/ kg = Milligrams per kilogram

ppm = Parts per million

Note : Method QC results are acceptable unless stated otherwise.

Unless otherwise indicated, the condition of all samples was acceptable at time of receipt.

RL = Reporting Limit

'<' = Below the reporting Limit





# METALS CHAIN OF CUSTODY

# 1507812

Turn Around T

- 2 Hour
  - 2 Days
  - 3 Days
  - 4 Days
  - 5 Days
  - 6-10 Days
- Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company AECOM  
 Address 1001 Bishop Street, Suite 1600  
Honolulu, Hawaii 96813  
 Phone (808) 954-4536

Project Manager Fletcher Kimura  
 Cell ( 808 ) 542 - 3752  
 Email fletcher.kimura@aecom.com  
 Fax ( 808 ) 523 - 8950

Project Name/Number 60340502.0500 Project Location DOD Demo, Honolulu, Hawaii

- |                                       |   |   |   |                               |                                   |                                   |                                 |                                 |
|---------------------------------------|---|---|---|-------------------------------|-----------------------------------|-----------------------------------|---------------------------------|---------------------------------|
| <input type="checkbox"/> Total Metals | <input type="checkbox"/> FAA (ppm)            | <input type="checkbox"/> Air Filter       | <input checked="" type="checkbox"/> Paint Chips (%) | <input type="checkbox"/> Soil | RCRA 8                            | RCRA 11                           |                                 |                                 |
| <input type="checkbox"/> TCLP         | <input checked="" type="checkbox"/> ICP (PPM) | <input type="checkbox"/> Paint Chips (cm) | <input type="checkbox"/> Dust Wipes                 |                               | <input type="checkbox"/> Barium   | <input type="checkbox"/> Chromium | <input type="checkbox"/> Silver | <input type="checkbox"/> Copper |
|                                       | <input type="checkbox"/> GFAA (ppb)           | <input type="checkbox"/> Drinking Water   | <input type="checkbox"/> Waste Water                |                               | <input type="checkbox"/> Arsenic  | <input type="checkbox"/> Mercury  | <input type="checkbox"/> Lead   | <input type="checkbox"/> Zinc   |
|                                       | <input type="checkbox"/> CVAA (ppb)           | <input checked="" type="checkbox"/> Other |   |                               | <input type="checkbox"/> Selenium | <input type="checkbox"/> Cadmium  |                                 | <input type="checkbox"/> Other  |

Reporting Instructions Report to Fletcher Kimura. Please cc teresa.quiniola@aecom.com  
 Call ( ) -  Fax ( ) -  Email fletcher.kimura@aecom.com

**Total Number of Samples** 74

Sample ID	Description	A/R
1	DH002P-046 Light gray paint on metal	
2	DH002P-047 Sand paint on metal	
3	DH002P-048 Light brown paint on wood	
4	DH002P-049 Peach over green paint on concrete	
5	DH002P-050 Light brown paint on glass	
6	DH002P-051 Medium brown over light brown paint on metal	
7	DH002P-052 Orange paint on metal	
8	DH002P-053 Green paint on concrete	
9	DH002P-054 Light yellow paint on metal	
10	DH002P-055 Gray paint on metal	
11	DH002P-056 Sand paint on metal	
12	DH002P-057 Light brown paint on metal	
13	DH002P-058 White paint on asphalt	
14	DH002P-059 Sand paint on metal	
15	DH002P-060 Green paint on wood	

	Print Name	Signature	Company	Date	Time
Sampled by	Teresa Quiniola		AECOM	4/17, 4/21/15	--
Relinquish by	Fletcher Kimura		AECOM	4/29/15	11:00 am

**Office Use Only**

	Print Name	Signature	Company	Date	Time
Received by			NVL Labs	4/30/15	1:30 pm
Analyzed by	Shalim		NVL	5/12/15	
Called by					
Faxed/Email by					



May 13, 2015

Fletcher Kimura  
**AECOM**  
1001 Bishop Street, Suite 1600  
Honolulu, HI 96813



Laboratory | Management | Training

**RE: Metals Analysis; NVL Batch # 1507813.00**

Dear Mr. Kimura,

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Sincerely,

Nick Ly, Technical Director

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NVL Laboratories, Inc.  
4708 Aurora Ave N, Seattle, WA 98103  
p 206.547.0100 | f 206.634.1936

# Analysis Report

## Total Metals

Client: AECOM

Address: 1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

**Attention: Mr. Fletcher Kimura**

Project Location: DOD Demo, Honolulu, Hawaii.

**Batch #: 1507813.00**

Matrix: Paint

Method: EPA 3051/6010C

Client Project #: 60340502.0500

Date Received: 4/30/2015

Samples Received: 14

Samples Analyzed: 14

Lab ID	Client Sample #	Elements	Sample wt (g)	RL mg / kg	Results in mg / kg	Results in ppm	Results in percent
15042972	DH002P-061	Lead (Pb)	0.2228	18.0	80000.0	80000.0	8.0000
15042973	DH002P-062	Lead (Pb)	0.2025	20.0	19000.0	19000.0	1.9000
15042974	DH002P-063	Lead (Pb)	0.2024	20.0	180.0	180.0	0.0180
15042975	DH002P-064	Lead (Pb)	0.2212	18.0	28.0	28.0	0.0028
15042976	DH002P-065	Lead (Pb)	0.2183	18.0	12000.0	12000.0	1.2000
15042977	DH002P-066	Lead (Pb)	0.2044	20.0	470.0	470.0	0.0470
15042978	DH002P-067	Lead (Pb)	0.2268	18.0	510.0	510.0	0.0510
15042979	DH002P-068	Lead (Pb)	0.2206	18.0	19.0	19.0	0.0019
15042980	DH002P-069	Lead (Pb)	0.2195	18.0	1600.0	1600.0	0.1600
15042981	DH002P-070	Lead (Pb)	0.2099	19.0	7800.0	7800.0	0.7800
15042982	DH002P-071	Lead (Pb)	0.2018	20.0	< 20.0	< 20.0	< 0.0020
15042983	DH002P-072	Lead (Pb)	0.2161	19.0	< 19.0	< 19.0	< 0.0019
15042984	DH002P-073	Lead (Pb)	0.2407	17.0	< 17.0	< 17.0	< 0.0017
15042985	DH002P-074	Lead (Pb)	0.2216	18.0	< 18.0	< 18.0	< 0.0018

Sampled by: Client

Analyzed by: Shalini Patel

Reviewed by: Nick Ly

Date Analyzed: 05/12/2015

Date Issued: 05/13/2015



Nick Ly, Technical Director

RL = Reporting Limit

'<' = Below the reporting Limit

mg/ kg = Milligrams per kilogram

ppm = Parts per million

Note : Method QC results are acceptable unless stated otherwise.

Unless otherwise indicated, the condition of all samples was acceptable at time of receipt.





# METALS CHAIN OF CUSTODY

# 1507813

Turn Around Time  
 2 Hour  
 2 Days  
 5 Days  
 3 Days  
 6-10 Days  
 4 Days  
 Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company AECOM  
 Address 1001 Bishop Street, Suite 1600  
Honolulu, Hawaii 96813  
 Phone (808) 954-4536

Project Manager Fletcher Kimura  
 Cell ( 808 ) 542 - 3752  
 Email fletcher.kimura@aecom.com  
 Fax ( 808 ) 523 - 8950

Project Name/Number 60340502.0500 Project Location DOD Demo, Honolulu, Hawaii

- |                                       |   |   |   |                               |                                   |                                   |                                 |                                 |
|---------------------------------------|---|---|---|-------------------------------|-----------------------------------|-----------------------------------|---------------------------------|---------------------------------|
| <input type="checkbox"/> Total Metals | <input type="checkbox"/> FAA (ppm)            | <input type="checkbox"/> Air Filter       | <input checked="" type="checkbox"/> Paint Chips (%) | <input type="checkbox"/> Soil | RCRA 8                            | RCRA 11                           |                                 |                                 |
| <input type="checkbox"/> TCLP         | <input checked="" type="checkbox"/> ICP (PPM) | <input type="checkbox"/> Paint Chips (cm) | <input type="checkbox"/> Dust Wipes                 |                               | <input type="checkbox"/> Barium   | <input type="checkbox"/> Chromium | <input type="checkbox"/> Silver | <input type="checkbox"/> Copper |
|                                       | <input type="checkbox"/> GFAA (ppb)           | <input type="checkbox"/> Drinking Water   | <input type="checkbox"/> Waste Water                |                               | <input type="checkbox"/> Arsenic  | <input type="checkbox"/> Mercury  | <input type="checkbox"/> Lead   | <input type="checkbox"/> Zinc   |
|                                       | <input type="checkbox"/> CVAA (ppb)           | <input checked="" type="checkbox"/> Other |   |                               | <input type="checkbox"/> Selenium | <input type="checkbox"/> Cadmium  |                                 | <input type="checkbox"/> Other  |

Reporting Instructions Report to Fletcher Kimura. Please cc teresa.quiniola@aecom.com  
 Call ( ) -  Fax ( ) -  Email fletcher.kimura@aecom.com

Total Number of Samples 74

Sample ID	Description	A/R
1	DH002P-061 Green paint on metal	
2	DH002P-062 Yellow paint on metal	
3	DH002P-063 Red paint on metal	
4	DH002P-064 Yellow paint on concrete	
5	DH002P-065 Off-white paint on metal	
6	DH002P-066 Light brown paint on metal	
7	DH002P-067 Light brown paint on concrete	
8	DH002P-068 Yellow paint on metal	
9	DH002P-069 Light blue paint on metal	
10	DH002P-070 Dark brown paint on metal	
11	DH002P-071 Red paint on concrete	
12	DH002P-072 Blue paint on concrete	
13	DH002P-073 White 3-pt line paint on concrete	
14	DH002P-074 Yellow paint on concrete	
15		

	Print Name	Signature	Company	Date	Time
Sampled by	Teresa Quiniola		AECOM	4/17, 4/21/15	--
Relinquish by	Fletcher Kimura		AECOM	4/29/15	11:00 am

**Office Use Only**

	Print Name	Signature	Company	Date	Time
Received by			NVL Labs	4/29/15	9:50 am
Analyzed by	Shalini Patel		NVL	5/12/15	11:00
Called by					
Faxed/Email by					





**Appendix C.3**  
**Soil and OWS Sampling**



# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine

17461 Derian Ave

Suite 100

Irvine, CA 92614-5817

Tel: (949)261-1022

TestAmerica Job ID: 440-111637-1

TestAmerica Sample Delivery Group: 60340502

Client Project/Site: DOD Demo Bldg 301 & 304

For:

AECOM, Inc.

1001 Bishop Street

Honolulu, Hawaii 96813

Attn: Fletcher Kimura



Authorized for release by:

6/11/2015 4:41:38 PM

Craig Piliialoha, Project Manager I

(808)486-5227

[craig.piliialoha@testamericainc.com](mailto:craig.piliialoha@testamericainc.com)

### LINKS

Review your project  
results through

**TotalAccess**

Have a Question?



Visit us at:

[www.testamericainc.com](http://www.testamericainc.com)

*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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# Sample Summary

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-111637-1	DOD-01	Water	05/28/15 10:00	06/02/15 09:45
440-111637-2	DOD-03	Solid	05/28/15 11:30	06/02/15 09:45
440-111637-3	DOD-04	Solid	05/28/15 13:20	06/02/15 09:45
440-111637-4	DOD-05	Solid	05/28/15 14:15	06/02/15 09:45
440-111637-5	DOD-02	Solid	05/28/15 11:00	06/02/15 09:45

- 1
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- 3
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- 8
- 9
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- 11
- 12
- 13

# Case Narrative

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

## Job ID: 440-111637-1

### Laboratory: TestAmerica Honolulu

#### Narrative

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory unless otherwise stated in the report. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of TestAmerica and its client. This report shall not be reproduced, except in full, without written permission from TestAmerica. TestAmerica Analytical Testing Corporation certifies that the analytical results contained herein apply only to the specific sample(s) analyzed.

The Chain(s) of Custody are included and are an integral part of this report. This entire report was reviewed and approved for release.

If you have any questions relating to this analytical report, please contact your Laboratory Project Manager at 1-(808)486-5227

#### LABORATORY REPORT

At sample receipt, the cooler/sample was 3 degrees C.

TestAmerica has determined that samples which require thermal preservation shall be considered acceptable if the arrival temperature is within 2 degrees C of the required temperature or the method specified range. For samples with a temperature requirement of 4 degrees C, an arrival temperature from 0 degrees C to 6 degrees C meets specifications. Samples that are delivered to the laboratory on the same day that they are collected may not meet these criteria. In these cases, the samples are considered acceptable if there is evidence that the chilling process has begun, such as arrival on ice.

Samples were prepared in accordance with the State of Hawai'i Department of Health Office of Hazard Evaluation and Emergen Response's Technical Guidance Manual for the Implementation of the Hawai'i State Contingency Plan 2009 edition Laboratory Preparation of Multi-Increment Samples.

### Laboratory: TestAmerica Irvine

#### Narrative

#### Job Narrative 440-111637-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 6/2/2015 9:45 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 5.2° C.

#### GC/MS VOA

Method(s) 8260B: The continuing calibration verification (CCV) associated with batch 440-259289 recovered above the upper control limit for 2,2-Dichloropropane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: DOD-01 (440-111637-1) and (CCVIS 440-259289/2).

Method(s) 8260B: Internal standard responses were outside of acceptance limits for the following samples: 1,4-Dichlorobenzene-d4 and Chlorobenzene-d5 are low DOD-02 (440-111637-5). The sample(s) shows evidence of matrix interference.

Method(s) 8260B: Surrogate recovery for the following sample was outside control limits: Toluene-d8 is high DOD-02 (440-111637-5). Evidence of matrix interference is present;

Method(s) 8260B: The following sample was diluted due to the nature of the sample matrix: DOD-02 (440-111637-5). Elevated reporting limits (RLs) are provided.



# Case Narrative

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

## Job ID: 440-111637-1 (Continued)

### Laboratory: TestAmerica Irvine (Continued)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### HPLC/IC

Method(s) 8310: Due to the high concentration of Phenanthrene, Dibenzo(a,h)anthracene and Chrysene the matrix spike / matrix spike duplicate (MS/MSD) for 550-65002 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Method(s) 8310: The %RPD of the laboratory control sample (LCS) and laboratory control standard duplicate (LCSD) for preparation batch 65108 recovered outside control limits for the analyte Fluorene. Insufficient sample was collected to allow for MS/MSD extraction and analysis. The sample was reported per PM instruction. The compound Fluorene was qualified with the "\*" flag.

Method(s) 8310: Surrogate recovery for the following sample was outside control limits: DOD-01 (440-111637-1). Evidence of matrix interference due to non-target analytes is present, making integration of the surrogate peak difficult; This matrix effect was confirmed through re-extraction and re-analysis. The surrogate p-Terphenyl is qualified with the "X" flag.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### GC VOA

Method(s) 8015B: The following sample was diluted to bring the concentration of target analytes within the calibration range: DOD-02 (440-111637-5). The 5g run was above calibration range/contained saturated peak(s) for GRO, while the 100X extract run was below the reporting limit. Both analyses are being reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### GC Semi VOA

Method(s) 8015B: The following sample required a dilution due to the nature of the sample matrix: DOD-01 (440-111637-1). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

Method(s) 8015B: Due to the high concentration of C10-C28, the matrix spike / matrix spike duplicate (MS/MSD) for PB 259462 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria. (LCS 440-259462/2-A)

Method(s) 8015B: The following sample required a dilution due to the nature of the sample matrix: DOD-02 (440-111637-5). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

Method(s) 8081A: Surrogate recovery for the following sample was outside control limits: DOD-03 (440-111637-2). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method(s) 8081A: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with 260125. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

Method(s) 8081A: The closing continuing calibration verification (CCV) standard associated with batch 260286 failed to meet acceptance limits. The associated samples were re-analyzed following a successful CCV and produced similar results, indicating that the sample matrix is adversely affecting the instrument and causing the failures. DOD-03 (440-111637-2), DOD-04 (440-111637-3) and (CCV 440-260286/22)

Method(s) 8081A: Surrogate recovery for the following sample was outside control limits: DOD-05 (440-111637-4). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method(s) 8081A: The closing continuing calibration verification (CCV) standard associated with batch 260594 failed to meet acceptance limits. The associated samples were re-analyzed following a successful CCV and produced similar results, indicating that the sample matrix is adversely affecting the instrument and causing the failures. DOD-05 (440-111637-4) and (CCV 440-260594/10)

# Case Narrative

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

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## Job ID: 440-111637-1 (Continued)

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### Laboratory: TestAmerica Irvine (Continued)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

#### General Chemistry

Method(s) 9045C: The following sample was analyzed outside of analytical holding time due to the sample being received with insufficient time remaining to analyze within holding time: DOD-02 (440-111637-5).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### Subcontract non-Sister

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

#### Organic Prep

Method(s) 3546: The following sample was diluted due to the nature of the sample matrix: DOD-02 (440-111637-5). Elevated reporting limits (RLs) are provided.

Method(s) 3546: Due to the matrix, the following sample could not be concentrated to the final method required volume: DOD-02 (440-111637-5). The reporting limits (RLs) are elevated proportionately.

Method(s) 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with Batch 64966.

Method(s) 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with Batch 65108.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

#### Subcontract Work

Methods ISM Processing - Honolulu, pH - 9040B: These methods were subcontracted to TestAmerica Honolulu. The subcontract laboratory certifications are different from that of the facility issuing the final report.

# Client Sample Results

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

**Client Sample ID: DOD-01**

**Date Collected: 05/28/15 10:00**

**Date Received: 06/02/15 09:45**

**Lab Sample ID: 440-111637-1**

**Matrix: Water**

**Method: 8260B - Volatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		5.0	0.25	ug/L			06/04/15 15:15	1
1,1,1-Trichloroethane	ND		2.0	0.25	ug/L			06/04/15 15:15	1
1,1,2,2-Tetrachloroethane	ND		2.0	0.25	ug/L			06/04/15 15:15	1
1,1,2-Trichloroethane	ND		2.0	0.25	ug/L			06/04/15 15:15	1
1,1-Dichloroethane	ND		2.0	0.25	ug/L			06/04/15 15:15	1
1,1-Dichloroethene	ND		5.0	0.25	ug/L			06/04/15 15:15	1
1,1-Dichloropropene	ND		2.0	0.25	ug/L			06/04/15 15:15	1
1,2,3-Trichlorobenzene	ND		5.0	0.40	ug/L			06/04/15 15:15	1
1,2,3-Trichloropropane	ND		10	0.25	ug/L			06/04/15 15:15	1
1,2,4-Trichlorobenzene	ND		5.0	0.40	ug/L			06/04/15 15:15	1
1,2,4-Trimethylbenzene	ND		2.0	0.25	ug/L			06/04/15 15:15	1
1,2-Dibromo-3-Chloropropane	ND		5.0	0.50	ug/L			06/04/15 15:15	1
1,2-Dichlorobenzene	ND		2.0	0.25	ug/L			06/04/15 15:15	1
1,2-Dichloroethane	ND		2.0	0.25	ug/L			06/04/15 15:15	1
1,2-Dichloropropane	ND		2.0	0.25	ug/L			06/04/15 15:15	1
1,3,5-Trimethylbenzene	ND		2.0	0.25	ug/L			06/04/15 15:15	1
1,3-Dichlorobenzene	ND		2.0	0.25	ug/L			06/04/15 15:15	1
1,3-Dichloropropane	ND		2.0	0.25	ug/L			06/04/15 15:15	1
1,4-Dichlorobenzene	ND		2.0	0.25	ug/L			06/04/15 15:15	1
2,2-Dichloropropane	ND		2.0	0.40	ug/L			06/04/15 15:15	1
2-Chlorotoluene	ND		5.0	0.25	ug/L			06/04/15 15:15	1
4-Chlorotoluene	ND		5.0	0.25	ug/L			06/04/15 15:15	1
Benzene	ND		2.0	0.25	ug/L			06/04/15 15:15	1
Bromobenzene	ND		5.0	0.25	ug/L			06/04/15 15:15	1
Bromoform	ND		5.0	0.40	ug/L			06/04/15 15:15	1
Bromomethane	ND		5.0	0.25	ug/L			06/04/15 15:15	1
Carbon tetrachloride	ND		5.0	0.25	ug/L			06/04/15 15:15	1
Chlorobenzene	ND		2.0	0.25	ug/L			06/04/15 15:15	1
Chloroethane	ND		5.0	0.40	ug/L			06/04/15 15:15	1
Chloroform	ND		2.0	0.25	ug/L			06/04/15 15:15	1
Chloromethane	ND		5.0	0.25	ug/L			06/04/15 15:15	1
cis-1,2-Dichloroethene	ND		2.0	0.25	ug/L			06/04/15 15:15	1
cis-1,3-Dichloropropene	ND		2.0	0.25	ug/L			06/04/15 15:15	1
Dibromomethane	ND		2.0	0.25	ug/L			06/04/15 15:15	1
Dichlorodifluoromethane	ND		5.0	0.25	ug/L			06/04/15 15:15	1
Ethylbenzene	ND		2.0	0.25	ug/L			06/04/15 15:15	1
Hexachlorobutadiene	ND		5.0	0.25	ug/L			06/04/15 15:15	1
Isopropylbenzene	ND		2.0	0.25	ug/L			06/04/15 15:15	1
m,p-Xylene	ND		2.0	0.50	ug/L			06/04/15 15:15	1
Methylene Chloride	ND		5.0	1.1	ug/L			06/04/15 15:15	1
Naphthalene	ND		5.0	0.40	ug/L			06/04/15 15:15	1
n-Butylbenzene	ND		5.0	0.40	ug/L			06/04/15 15:15	1
N-Propylbenzene	ND		2.0	0.25	ug/L			06/04/15 15:15	1
o-Xylene	ND		2.0	0.25	ug/L			06/04/15 15:15	1
sec-Butylbenzene	ND		5.0	0.25	ug/L			06/04/15 15:15	1
Styrene	ND		2.0	0.25	ug/L			06/04/15 15:15	1
tert-Butylbenzene	ND		5.0	0.25	ug/L			06/04/15 15:15	1
Tetrachloroethene	ND		2.0	0.25	ug/L			06/04/15 15:15	1
Toluene	ND		2.0	0.25	ug/L			06/04/15 15:15	1

TestAmerica Irvine

# Client Sample Results

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

**Client Sample ID: DOD-01**

**Lab Sample ID: 440-111637-1**

**Date Collected: 05/28/15 10:00**

**Matrix: Water**

**Date Received: 06/02/15 09:45**

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,2-Dichloroethene	ND		2.0	0.25	ug/L			06/04/15 15:15	1
trans-1,3-Dichloropropene	ND		2.0	0.25	ug/L			06/04/15 15:15	1
Trichloroethene	ND		2.0	0.25	ug/L			06/04/15 15:15	1
Trichlorofluoromethane	ND		5.0	0.25	ug/L			06/04/15 15:15	1
Vinyl chloride	ND		5.0	0.25	ug/L			06/04/15 15:15	1
1,2-Dibromoethane (EDB)	ND		2.0	0.25	ug/L			06/04/15 15:15	1
Bromochloromethane	ND		5.0	0.25	ug/L			06/04/15 15:15	1
Bromodichloromethane	ND		2.0	0.25	ug/L			06/04/15 15:15	1
Dibromochloromethane	ND		2.0	0.25	ug/L			06/04/15 15:15	1
p-Isopropyltoluene	ND		2.0	0.25	ug/L			06/04/15 15:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	117		80 - 128					06/04/15 15:15	1
4-Bromofluorobenzene (Surr)	101		80 - 120					06/04/15 15:15	1
Dibromofluoromethane (Surr)	98		76 - 132					06/04/15 15:15	1

## Method: 8015B - Gasoline Range Organics - (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>GRO (C4-C12)</b>	<b>89</b>		50	25	ug/L			06/03/15 22:05	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	108		65 - 140					06/03/15 22:05	1

## Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>C12-C34</b>	<b>45</b>		26	5.1	mg/L		06/03/15 06:57	06/04/15 11:32	50
<b>DRO (C9-C25)</b>	<b>42</b>		26	5.1	mg/L		06/03/15 06:57	06/04/15 11:32	50
<b>RRO (C24-C40)</b>	<b>5.5 J</b>		26	5.1	mg/L		06/03/15 06:57	06/04/15 11:32	50
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
n-Octacosane	10	X	45 - 120				06/03/15 06:57	06/04/15 11:32	50

## Method: 8310 - PAHs (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		1.0	0.31	ug/L		06/04/15 17:15	06/05/15 21:48	1
Acenaphthylene	ND		1.0	0.69	ug/L		06/04/15 17:15	06/05/15 21:48	1
<b>Anthracene</b>	<b>1.2</b>		0.050	0.034	ug/L		06/04/15 17:15	06/05/15 21:48	1
<b>Benzo[a]anthracene</b>	<b>0.068</b>		0.050	0.031	ug/L		06/04/15 17:15	06/05/15 21:48	1
<b>Benzo[a]pyrene</b>	<b>0.092</b>		0.050	0.017	ug/L		06/04/15 17:15	06/05/15 21:48	1
<b>Benzo[b]fluoranthene</b>	<b>0.40</b>		0.10	0.027	ug/L		06/04/15 17:15	06/05/15 21:48	1
<b>Benzo[g,h,i]perylene</b>	<b>0.23</b>		0.10	0.030	ug/L		06/04/15 17:15	06/05/15 21:48	1
Benzo[k]fluoranthene	ND		0.050	0.020	ug/L		06/04/15 17:15	06/05/15 21:48	1
<b>Chrysene</b>	<b>0.32</b>		0.10	0.016	ug/L		06/04/15 17:15	06/05/15 21:48	1
Dibenz(a,h)anthracene	ND		0.10	0.042	ug/L		06/04/15 17:15	06/05/15 21:48	1
<b>Fluoranthene</b>	<b>0.42</b>		0.10	0.083	ug/L		06/04/15 17:15	06/05/15 21:48	1
<b>Fluorene</b>	<b>0.39 *</b>		0.10	0.092	ug/L		06/04/15 17:15	06/05/15 21:48	1
Indeno[1,2,3-cd]pyrene	ND		0.10	0.025	ug/L		06/04/15 17:15	06/05/15 21:48	1
Naphthalene	ND		0.50	0.47	ug/L		06/04/15 17:15	06/05/15 21:48	1
<b>Phenanthrene</b>	<b>8.7 E</b>		0.10	0.099	ug/L		06/04/15 17:15	06/05/15 21:48	1
<b>Pyrene</b>	<b>1.1</b>		0.10	0.047	ug/L		06/04/15 17:15	06/05/15 21:48	1

TestAmerica Irvine

# Client Sample Results

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

**Client Sample ID: DOD-01**  
**Date Collected: 05/28/15 10:00**  
**Date Received: 06/02/15 09:45**

**Lab Sample ID: 440-111637-1**  
**Matrix: Water**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
p-Terphenyl	22	X	27 - 101	06/04/15 17:15	06/05/15 21:48	1

**Method: 6010B - Metals (ICP) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.010	0.0050	mg/L		06/03/15 11:54	06/03/15 20:53	1
Barium	0.090		0.010	0.0050	mg/L		06/03/15 11:54	06/03/15 20:53	1
Cadmium	0.032		0.0050	0.0020	mg/L		06/03/15 11:54	06/03/15 20:53	1
Chromium	0.10		0.0050	0.0025	mg/L		06/03/15 11:54	06/03/15 20:53	1
Lead	0.080	B	0.0050	0.0025	mg/L		06/03/15 11:54	06/03/15 20:53	1
Selenium	ND		0.010	0.0061	mg/L		06/03/15 11:54	06/03/15 20:53	1
Silver	ND		0.010	0.0050	mg/L		06/03/15 11:54	06/03/15 20:53	1

**Method: 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00040	0.00020	mg/L		06/03/15 17:36	06/04/15 13:49	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Flashpoint	>201		50.0	50.0	Degrees F			06/09/15 18:03	1

**Method: EPA 150.1 - General Chemistry Parameters**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH - measured in lab not in field	8.74		1.00		pH Units		05/28/15 15:54	05/28/15 15:54	1.00

**Client Sample ID: DOD-03**  
**Date Collected: 05/28/15 11:30**  
**Date Received: 06/02/15 09:45**

**Lab Sample ID: 440-111637-2**  
**Matrix: Solid**

**Method: 8081A - Organochlorine Pesticides (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	0.016	J p	0.049	0.0099	mg/Kg		06/08/15 16:38	06/09/15 18:51	1
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
Tetrachloro-m-xylene	67		35 - 115	06/08/15 16:38	06/09/15 18:51	1			
DCB Decachlorobiphenyl (Surr)	137	X	45 - 120	06/08/15 16:38	06/09/15 18:51	1			

**Method: 6010B - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	580	B	3.0	0.19	mg/Kg		06/09/15 16:18	06/11/15 12:15	10

**Method: 6010B - Metals (ICP) - TCLP**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.10	0.040	mg/L		06/04/15 00:30	06/04/15 13:00	1

**Client Sample ID: DOD-04**  
**Date Collected: 05/28/15 13:20**  
**Date Received: 06/02/15 09:45**

**Lab Sample ID: 440-111637-3**  
**Matrix: Solid**

**Method: 8081A - Organochlorine Pesticides (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	0.031	J	0.050	0.0099	mg/Kg		06/08/15 16:38	06/09/15 19:05	1

TestAmerica Irvine

# Client Sample Results

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

## Client Sample ID: DOD-04

Date Collected: 05/28/15 13:20

Date Received: 06/02/15 09:45

## Lab Sample ID: 440-111637-3

Matrix: Solid

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	77		35 - 115	06/08/15 16:38	06/09/15 19:05	1
DCB Decachlorobiphenyl (Surr)	85		45 - 120	06/08/15 16:38	06/09/15 19:05	1

### Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	75	B	3.0	0.19	mg/Kg	-	06/09/15 16:18	06/11/15 12:18	10

### Method: 6010B - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.10	0.040	mg/L	-	06/04/15 00:30	06/04/15 13:03	1

## Client Sample ID: DOD-05

Date Collected: 05/28/15 14:15

Date Received: 06/02/15 09:45

## Lab Sample ID: 440-111637-4

Matrix: Solid

### Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	1.2		0.50	0.099	mg/Kg	-	06/08/15 16:38	06/10/15 16:05	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	371	X	35 - 115	06/08/15 16:38	06/10/15 16:05	10
DCB Decachlorobiphenyl (Surr)	99		45 - 120	06/08/15 16:38	06/10/15 16:05	10

### Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	73	B	3.0	0.19	mg/Kg	-	06/09/15 16:18	06/11/15 12:22	10

### Method: 6010B - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.10	0.040	mg/L	-	06/04/15 00:30	06/04/15 13:31	1

## Client Sample ID: DOD-02

Date Collected: 05/28/15 11:00

Date Received: 06/02/15 09:45

## Lab Sample ID: 440-111637-5

Matrix: Solid

### Method: 8260B/5030B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND	*	0.024	0.0048	mg/Kg	-		06/05/15 15:51	1
1,1,1-Trichloroethane	ND		0.0095	0.0048	mg/Kg	-		06/05/15 15:51	1
1,1,2,2-Tetrachloroethane	ND	*	0.0095	0.0048	mg/Kg	-		06/05/15 15:51	1
1,1,2-Trichloroethane	ND	*	0.0095	0.0048	mg/Kg	-		06/05/15 15:51	1
1,1-Dichloroethane	ND		0.0095	0.0048	mg/Kg	-		06/05/15 15:51	1
1,1-Dichloroethene	ND		0.024	0.0048	mg/Kg	-		06/05/15 15:51	1
1,1-Dichloropropene	ND		0.0095	0.0048	mg/Kg	-		06/05/15 15:51	1
1,2,3-Trichlorobenzene	ND	*	0.024	0.0048	mg/Kg	-		06/05/15 15:51	1
1,2,3-Trichloropropane	ND	*	0.048	0.0048	mg/Kg	-		06/05/15 15:51	1
1,2,4-Trichlorobenzene	ND	*	0.024	0.0048	mg/Kg	-		06/05/15 15:51	1
1,2,4-Trimethylbenzene	ND	*	0.0095	0.0048	mg/Kg	-		06/05/15 15:51	1
1,2-Dibromo-3-Chloropropane	ND	*	0.024	0.0095	mg/Kg	-		06/05/15 15:51	1
1,2-Dibromoethane (EDB)	ND	*	0.0095	0.0048	mg/Kg	-		06/05/15 15:51	1
1,2-Dichlorobenzene	ND	*	0.0095	0.0048	mg/Kg	-		06/05/15 15:51	1
1,2-Dichloroethane	ND		0.0095	0.0048	mg/Kg	-		06/05/15 15:51	1

TestAmerica Irvine



# Client Sample Results

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

**Client Sample ID: DOD-02**

**Lab Sample ID: 440-111637-5**

**Date Collected: 05/28/15 11:00**

**Matrix: Solid**

**Date Received: 06/02/15 09:45**

**Method: 8260B/5030B - Volatile Organic Compounds (GC/MS) (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloropropane	ND		0.0095	0.0048	mg/Kg			06/05/15 15:51	1
1,3,5-Trimethylbenzene	ND	*	0.0095	0.0048	mg/Kg			06/05/15 15:51	1
1,3-Dichlorobenzene	ND	*	0.0095	0.0048	mg/Kg			06/05/15 15:51	1
1,3-Dichloropropane	ND	*	0.0095	0.0048	mg/Kg			06/05/15 15:51	1
1,4-Dichlorobenzene	ND	*	0.0095	0.0048	mg/Kg			06/05/15 15:51	1
2,2-Dichloropropane	ND		0.0095	0.0048	mg/Kg			06/05/15 15:51	1
2-Chlorotoluene	ND	*	0.024	0.0048	mg/Kg			06/05/15 15:51	1
4-Chlorotoluene	ND	*	0.024	0.0048	mg/Kg			06/05/15 15:51	1
Benzene	ND		0.0095	0.0048	mg/Kg			06/05/15 15:51	1
Bromobenzene	ND	*	0.024	0.0048	mg/Kg			06/05/15 15:51	1
Bromochloromethane	ND		0.024	0.0048	mg/Kg			06/05/15 15:51	1
Bromodichloromethane	ND		0.0095	0.0048	mg/Kg			06/05/15 15:51	1
Bromoform	ND	*	0.024	0.0095	mg/Kg			06/05/15 15:51	1
Bromomethane	ND		0.024	0.0048	mg/Kg			06/05/15 15:51	1
Carbon tetrachloride	ND		0.024	0.0048	mg/Kg			06/05/15 15:51	1
Chlorobenzene	ND	*	0.0095	0.0048	mg/Kg			06/05/15 15:51	1
Chloroethane	ND		0.024	0.0095	mg/Kg			06/05/15 15:51	1
Chloroform	ND		0.0095	0.0048	mg/Kg			06/05/15 15:51	1
Chloromethane	ND		0.024	0.0048	mg/Kg			06/05/15 15:51	1
cis-1,2-Dichloroethene	ND		0.0095	0.0048	mg/Kg			06/05/15 15:51	1
cis-1,3-Dichloropropene	ND	*	0.0095	0.0048	mg/Kg			06/05/15 15:51	1
Dibromochloromethane	ND	*	0.0095	0.0048	mg/Kg			06/05/15 15:51	1
Dibromomethane	ND		0.0095	0.0048	mg/Kg			06/05/15 15:51	1
Dichlorodifluoromethane	ND		0.024	0.0095	mg/Kg			06/05/15 15:51	1
Ethylbenzene	ND	*	0.0095	0.0048	mg/Kg			06/05/15 15:51	1
Hexachlorobutadiene	ND	*	0.024	0.0048	mg/Kg			06/05/15 15:51	1
Isopropylbenzene	ND	*	0.0095	0.0048	mg/Kg			06/05/15 15:51	1
m,p-Xylene	ND	*	0.019	0.0095	mg/Kg			06/05/15 15:51	1
Methylene Chloride	ND		0.095	0.024	mg/Kg			06/05/15 15:51	1
Naphthalene	ND	*	0.024	0.0095	mg/Kg			06/05/15 15:51	1
n-Butylbenzene	ND	*	0.024	0.0048	mg/Kg			06/05/15 15:51	1
N-Propylbenzene	ND	*	0.0095	0.0048	mg/Kg			06/05/15 15:51	1
o-Xylene	ND	*	0.0095	0.0048	mg/Kg			06/05/15 15:51	1
p-Isopropyltoluene	ND	*	0.0095	0.0048	mg/Kg			06/05/15 15:51	1
sec-Butylbenzene	ND	*	0.024	0.0048	mg/Kg			06/05/15 15:51	1
Styrene	ND	*	0.0095	0.0048	mg/Kg			06/05/15 15:51	1
tert-Butylbenzene	ND	*	0.024	0.0048	mg/Kg			06/05/15 15:51	1
Tetrachloroethene	ND	*	0.0095	0.0048	mg/Kg			06/05/15 15:51	1
Toluene	ND	*	0.0095	0.0048	mg/Kg			06/05/15 15:51	1
trans-1,2-Dichloroethene	ND		0.0095	0.0048	mg/Kg			06/05/15 15:51	1
trans-1,3-Dichloropropene	ND	*	0.0095	0.0048	mg/Kg			06/05/15 15:51	1
Trichloroethene	ND		0.0095	0.0048	mg/Kg			06/05/15 15:51	1
Trichlorofluoromethane	ND		0.024	0.0048	mg/Kg			06/05/15 15:51	1
Vinyl chloride	ND		0.024	0.0048	mg/Kg			06/05/15 15:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104	*	79 - 120		06/05/15 15:51	1
Dibromofluoromethane (Surr)	113		60 - 120		06/05/15 15:51	1
Toluene-d8 (Surr)	128	* X	79 - 123		06/05/15 15:51	1

TestAmerica Irvine

# Client Sample Results

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

**Client Sample ID: DOD-02**

**Lab Sample ID: 440-111637-5**

Date Collected: 05/28/15 11:00

Matrix: Solid

Date Received: 06/02/15 09:45

### Method: 8015B/5030B - Gasoline Range Organics (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C4-C12)	89		40	20	mg/Kg		06/11/15 11:11	06/11/15 14:22	100
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		65 - 140				06/11/15 11:11	06/11/15 14:22	100

### Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C34	120000		1900	960	mg/Kg		06/04/15 15:08	06/05/15 13:03	40
DRO (C9-C25)	110000		1900	960	mg/Kg		06/04/15 15:08	06/05/15 13:03	40
RRO (C24-C40)	25000		1900	960	mg/Kg		06/04/15 15:08	06/05/15 13:03	40
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
n-Octacosane	30	X	40 - 140				06/04/15 15:08	06/05/15 13:03	40

### Method: 8310 - PAHs (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND	F1	0.30	0.0050	mg/Kg		06/03/15 17:12	06/04/15 21:46	1
Acenaphthylene	ND	F1	0.45	0.022	mg/Kg		06/03/15 17:12	06/04/15 21:46	1
Anthracene	0.021	J F2 F1 p	0.030	0.0074	mg/Kg		06/03/15 17:12	06/04/15 21:46	1
Benzo[a]anthracene	ND	F1	0.015	0.00069	mg/Kg		06/03/15 17:12	06/04/15 21:46	1
Benzo[a]pyrene	0.011	J F1 p	0.015	0.00076	mg/Kg		06/03/15 17:12	06/04/15 21:46	1
Benzo[b]fluoranthene	0.13	F1 p	0.030	0.00099	mg/Kg		06/03/15 17:12	06/04/15 21:46	1
Benzo[g,h,i]perylene	0.073	F1	0.045	0.0012	mg/Kg		06/03/15 17:12	06/04/15 21:46	1
Benzo[k]fluoranthene	ND	F1	0.015	0.00055	mg/Kg		06/03/15 17:12	06/04/15 21:46	1
Chrysene	0.082	F1 F2	0.030	0.00061	mg/Kg		06/03/15 17:12	06/04/15 21:46	1
Dibenz(a,h)anthracene	ND	F2	0.015	0.00098	mg/Kg		06/03/15 17:12	06/04/15 21:46	1
Fluoranthene	ND	F1	0.045	0.0012	mg/Kg		06/03/15 17:12	06/04/15 21:46	1
Fluorene	ND	F1	0.045	0.00095	mg/Kg		06/03/15 17:12	06/04/15 21:46	1
Indeno[1,2,3-cd]pyrene	ND	F1	0.015	0.00073	mg/Kg		06/03/15 17:12	06/04/15 21:46	1
Naphthalene	ND		0.30	0.0070	mg/Kg		06/03/15 17:12	06/04/15 21:46	1
Phenanthrene	0.044	J F2 F1 p	0.045	0.00063	mg/Kg		06/03/15 17:12	06/04/15 21:46	1
Pyrene	0.46	E	0.030	0.00096	mg/Kg		06/03/15 17:12	06/04/15 21:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
p-Terphenyl	10		10 - 150				06/03/15 17:12	06/04/15 21:46	1

### Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		2.9	1.5	mg/Kg		06/03/15 08:34	06/05/15 07:05	5
Barium	49		1.5	0.74	mg/Kg		06/03/15 08:34	06/05/15 07:05	5
Cadmium	4.7		0.49	0.25	mg/Kg		06/03/15 08:34	06/05/15 07:05	5
Chromium	73		0.98	0.49	mg/Kg		06/03/15 08:34	06/05/15 07:05	5
Lead	9.0		2.0	0.98	mg/Kg		06/03/15 08:34	06/05/15 07:05	5
Selenium	ND		2.9	1.5	mg/Kg		06/03/15 08:34	06/05/15 07:05	5
Silver	ND		1.5	0.74	mg/Kg		06/03/15 08:34	06/05/15 07:05	5

### Method: 6010B - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.20	0.070	mg/L		06/04/15 00:30	06/04/15 13:33	1
Barium	0.58		0.20	0.060	mg/L		06/04/15 00:30	06/04/15 13:33	1
Cadmium	ND		0.10	0.020	mg/L		06/04/15 00:30	06/04/15 13:33	1

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# Client Sample Results

Client: AECOM, Inc.  
 Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
 SDG: 60340502

**Client Sample ID: DOD-02**  
**Date Collected: 05/28/15 11:00**  
**Date Received: 06/02/15 09:45**

**Lab Sample ID: 440-111637-5**  
**Matrix: Solid**

**Method: 6010B - Metals (ICP) - TCLP (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	ND		0.10	0.020	mg/L		06/04/15 00:30	06/04/15 13:33	1
Lead	ND		0.10	0.040	mg/L		06/04/15 00:30	06/04/15 13:33	1
Selenium	ND		0.10	0.080	mg/L		06/04/15 00:30	06/04/15 13:33	1
Silver	ND		0.20	0.060	mg/L		06/04/15 00:30	06/04/15 13:33	1

**Method: 7470A - Mercury (CVAA) - TCLP**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.0010	mg/L		06/08/15 13:56	06/08/15 18:57	1

**Method: 7471A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.027		0.020	0.012	mg/Kg		06/04/15 16:05	06/04/15 20:25	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ignitability	not ignitable		1.0	1.0	NONE			06/06/15 11:23	1

**General Chemistry - Soluble**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	8.30	H	0.100	0.100	SU			06/06/15 16:03	1

# Method Summary

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL IRV
8260B/5030B	Volatile Organic Compounds (GC/MS)	SW846	TAL IRV
8015B	Gasoline Range Organics - (GC)	SW846	TAL IRV
8015B/5030B	Gasoline Range Organics (GC)	SW846	TAL IRV
8015B	Diesel Range Organics (DRO) (GC)	SW846	TAL IRV
8081A	Organochlorine Pesticides (GC)	SW846	TAL IRV
8310	PAHs (HPLC)	SW846	TAL PHX
6010B	Metals (ICP)	SW846	TAL IRV
6010B	Metals (ICP)	SW846	TAL SEA
7470A	Mercury (CVAA)	SW846	TAL IRV
7471A	Mercury (CVAA)	SW846	TAL IRV
1010	Ignitability, Pensky-Martens Closed-Cup Method	SW846	TAL IRV
7.1.2	Ignitability, Solids	SW846	TAL IRV
9045C	pH	SW846	TAL IRV
EPA 150.1	General Chemistry Parameters		TAL HON

#### Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

#### Laboratory References:

TAL HON = TestAmerica Honolulu, 4429 Malaai St. #104, Honolulu, HI 96818, TEL 808-486-5227

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

TAL PHX = TestAmerica Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

# Lab Chronicle

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

**Client Sample ID: DOD-01**

**Date Collected: 05/28/15 10:00**

**Date Received: 06/02/15 09:45**

**Lab Sample ID: 440-111637-1**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	259289	06/04/15 15:15	SS	TAL IRV
Total/NA	Analysis	8015B		1	10 mL	10 mL	259026	06/03/15 22:05	IM	TAL IRV
Total/NA	Prep	3510C			975 mL	1 mL	259021	06/03/15 06:57	AP	TAL IRV
Total/NA	Analysis	8015B		50	975 mL	1 mL	259349	06/04/15 11:32	KW	TAL IRV
Total/NA	Prep	3510C			1000 mL	2 mL	65108	06/04/15 17:15	CPA	TAL PHX
Total/NA	Analysis	8310		1	1000 mL	2 mL	65216	06/05/15 21:48	DMW	TAL PHX
Total Recoverable	Prep	3005A			25 mL	25 mL	259130	06/03/15 11:54	ND	TAL IRV
Total Recoverable	Analysis	6010B		1	25 mL	25 mL	259335	06/03/15 20:53	EN	TAL IRV
Total/NA	Prep	7470A			10 mL	20 mL	259220	06/03/15 17:36	DB	TAL IRV
Total/NA	Analysis	7470A		1	10 mL	20 mL	259456	06/04/15 13:49	DB	TAL IRV
Total/NA	Analysis	1010		1			260418	06/09/15 18:03	KDP	TAL IRV
Total	Analysis	EPA 150.1		1.00			15E0040	05/28/15 15:54	JMC	TAL HON
Total	Prep	Default Prep GenChem		1.00	15 mL	15 mL	15E0040_P	05/28/15 15:54	JMC	TAL HON

**Client Sample ID: DOD-03**

**Date Collected: 05/28/15 11:30**

**Date Received: 06/02/15 09:45**

**Lab Sample ID: 440-111637-2**

**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			30.33 g	4 mL	260125	06/08/15 16:38	VA	TAL IRV
Total/NA	Analysis	8081A		1	30.33 g	4 mL	260286	06/09/15 18:51	KS	TAL IRV
TCLP	Leach	1311			1.0 g	1.0 mL	258944	06/02/15 19:26	CH	TAL IRV
TCLP	Prep	3010A			5 mL	50 mL	259266	06/04/15 00:30	CH	TAL IRV
TCLP	Analysis	6010B		1	5 mL	50 mL	259459	06/04/15 13:00	EN	TAL IRV
Total/NA	Prep	3050B			9.9997 g	100 mL	191659	06/09/15 16:18	PAB	TAL SEA
Total/NA	Analysis	6010B		10	9.9997 g	100 mL	191894	06/11/15 12:15	SPP	TAL SEA

**Client Sample ID: DOD-04**

**Date Collected: 05/28/15 13:20**

**Date Received: 06/02/15 09:45**

**Lab Sample ID: 440-111637-3**

**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			30.26 g	4 mL	260125	06/08/15 16:38	VA	TAL IRV
Total/NA	Analysis	8081A		1	30.26 g	4 mL	260286	06/09/15 19:05	KS	TAL IRV
TCLP	Leach	1311			1.0 g	1.0 mL	258944	06/02/15 19:26	CH	TAL IRV
TCLP	Prep	3010A			5 mL	50 mL	259266	06/04/15 00:30	CH	TAL IRV
TCLP	Analysis	6010B		1	5 mL	50 mL	259459	06/04/15 13:03	EN	TAL IRV
Total/NA	Prep	3050B			10.0759 g	100 mL	191659	06/09/15 16:18	PAB	TAL SEA
Total/NA	Analysis	6010B		10	10.0759 g	100 mL	191894	06/11/15 12:18	SPP	TAL SEA

TestAmerica Irvine

# Lab Chronicle

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

**Client Sample ID: DOD-05**

**Lab Sample ID: 440-111637-4**

**Date Collected: 05/28/15 14:15**

**Matrix: Solid**

**Date Received: 06/02/15 09:45**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			30.26 g	4 mL	260125	06/08/15 16:38	VA	TAL IRV
Total/NA	Analysis	8081A		10	30.26 g	4 mL	260594	06/10/15 16:05	KS	TAL IRV
TCLP	Leach	1311			1.0 g	1.0 mL	258944	06/02/15 19:26	CH	TAL IRV
TCLP	Prep	3010A			5 mL	50 mL	259266	06/04/15 00:30	CH	TAL IRV
TCLP	Analysis	6010B		1	5 mL	50 mL	259459	06/04/15 13:31	EN	TAL IRV
Total/NA	Prep	3050B			10.0339 g	100 mL	191659	06/09/15 16:18	PAB	TAL SEA
Total/NA	Analysis	6010B		10	10.0339 g	100 mL	191894	06/11/15 12:22	SPP	TAL SEA

**Client Sample ID: DOD-02**

**Lab Sample ID: 440-111637-5**

**Date Collected: 05/28/15 11:00**

**Matrix: Solid**

**Date Received: 06/02/15 09:45**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/5030B		1	1.05 g	10 mL	259626	06/05/15 15:51	AL	TAL IRV
Total/NA	Prep	5030B			10.02 g	10 mL	260819	06/11/15 11:11	IM	TAL IRV
Total/NA	Analysis	8015B/5030B		100	10.02 g	10 mL	260691	06/11/15 14:22	IM	TAL IRV
Total/NA	Prep	3546			3.12 g	2 mL	259462	06/04/15 15:08	VA	TAL IRV
Total/NA	Analysis	8015B		40	3.12 g	2 mL	259610	06/05/15 13:03	KW	TAL IRV
Total/NA	Prep	3545			10.07 g	2 mL	65002	06/03/15 17:12	DRM	TAL PHX
Total/NA	Analysis	8310		1	10.07 g	2 mL	65096	06/04/15 21:46	JGM	TAL PHX
TCLP	Leach	1311			20 g	400 mL	258944	06/02/15 19:26	CH	TAL IRV
TCLP	Prep	3010A			5 mL	50 mL	259266	06/04/15 00:30	CH	TAL IRV
TCLP	Analysis	6010B		1	5 mL	50 mL	259459	06/04/15 13:33	EN	TAL IRV
Total/NA	Prep	3050B			2.04 g	50 mL	259034	06/03/15 08:34	DT	TAL IRV
Total/NA	Analysis	6010B		5	2.04 g	50 mL	259623	06/05/15 07:05	EN	TAL IRV
TCLP	Leach	1311			20 g	400 mL	258944	06/02/15 19:26	CH	TAL IRV
TCLP	Prep	7470A			2 mL	20 mL	260092	06/08/15 13:56	EN	TAL IRV
TCLP	Analysis	7470A		1	2 mL	20 mL	260248	06/08/15 18:57	EN	TAL IRV
Total/NA	Prep	7471A			0.51 g	50 mL	259402	06/04/15 16:05	DB	TAL IRV
Total/NA	Analysis	7471A		1	0.51 g	50 mL	259670	06/04/15 20:25	EN	TAL IRV
Total/NA	Analysis	7.1.2		1			259874	06/06/15 11:23	KDP	TAL IRV
Soluble	Leach	DI Leach			20.02 g	20 mL	259896	06/06/15 15:30	DP	TAL IRV
Soluble	Analysis	9045C		1		20 mL	259897	06/06/15 16:03	DP	TAL IRV

**Laboratory References:**

TAL HON = TestAmerica Honolulu, 4429 Malaai St. #104, Honolulu, HI 96818, TEL 808-486-5227

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

TAL PHX = TestAmerica Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310



# QC Sample Results

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

## Method: 8260B - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 440-259289/3**

**Matrix: Water**

**Analysis Batch: 259289**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		5.0	0.25	ug/L			06/04/15 07:17	1
1,1,1-Trichloroethane	ND		2.0	0.25	ug/L			06/04/15 07:17	1
1,1,2,2-Tetrachloroethane	ND		2.0	0.25	ug/L			06/04/15 07:17	1
1,1,2-Trichloroethane	ND		2.0	0.25	ug/L			06/04/15 07:17	1
1,1-Dichloroethane	ND		2.0	0.25	ug/L			06/04/15 07:17	1
1,1-Dichloroethene	ND		5.0	0.25	ug/L			06/04/15 07:17	1
1,1-Dichloropropene	ND		2.0	0.25	ug/L			06/04/15 07:17	1
1,2,3-Trichlorobenzene	ND		5.0	0.40	ug/L			06/04/15 07:17	1
1,2,3-Trichloropropane	ND		10	0.25	ug/L			06/04/15 07:17	1
1,2,4-Trichlorobenzene	ND		5.0	0.40	ug/L			06/04/15 07:17	1
1,2,4-Trimethylbenzene	ND		2.0	0.25	ug/L			06/04/15 07:17	1
1,2-Dibromo-3-Chloropropane	ND		5.0	0.50	ug/L			06/04/15 07:17	1
1,2-Dichlorobenzene	ND		2.0	0.25	ug/L			06/04/15 07:17	1
1,2-Dichloroethane	ND		2.0	0.25	ug/L			06/04/15 07:17	1
1,2-Dichloropropane	ND		2.0	0.25	ug/L			06/04/15 07:17	1
1,3,5-Trimethylbenzene	ND		2.0	0.25	ug/L			06/04/15 07:17	1
1,3-Dichlorobenzene	ND		2.0	0.25	ug/L			06/04/15 07:17	1
1,3-Dichloropropane	ND		2.0	0.25	ug/L			06/04/15 07:17	1
1,4-Dichlorobenzene	ND		2.0	0.25	ug/L			06/04/15 07:17	1
2,2-Dichloropropane	ND		2.0	0.40	ug/L			06/04/15 07:17	1
2-Chlorotoluene	ND		5.0	0.25	ug/L			06/04/15 07:17	1
4-Chlorotoluene	ND		5.0	0.25	ug/L			06/04/15 07:17	1
Benzene	ND		2.0	0.25	ug/L			06/04/15 07:17	1
Bromobenzene	ND		5.0	0.25	ug/L			06/04/15 07:17	1
Bromoform	ND		5.0	0.40	ug/L			06/04/15 07:17	1
Bromomethane	ND		5.0	0.25	ug/L			06/04/15 07:17	1
Carbon tetrachloride	ND		5.0	0.25	ug/L			06/04/15 07:17	1
Chlorobenzene	ND		2.0	0.25	ug/L			06/04/15 07:17	1
Chloroethane	ND		5.0	0.40	ug/L			06/04/15 07:17	1
Chloroform	ND		2.0	0.25	ug/L			06/04/15 07:17	1
Chloromethane	ND		5.0	0.25	ug/L			06/04/15 07:17	1
cis-1,2-Dichloroethene	ND		2.0	0.25	ug/L			06/04/15 07:17	1
cis-1,3-Dichloropropane	ND		2.0	0.25	ug/L			06/04/15 07:17	1
Dibromomethane	ND		2.0	0.25	ug/L			06/04/15 07:17	1
Dichlorodifluoromethane	ND		5.0	0.25	ug/L			06/04/15 07:17	1
Ethylbenzene	ND		2.0	0.25	ug/L			06/04/15 07:17	1
Hexachlorobutadiene	ND		5.0	0.25	ug/L			06/04/15 07:17	1
Isopropylbenzene	ND		2.0	0.25	ug/L			06/04/15 07:17	1
m,p-Xylene	ND		2.0	0.50	ug/L			06/04/15 07:17	1
Methylene Chloride	ND		5.0	1.1	ug/L			06/04/15 07:17	1
Naphthalene	ND		5.0	0.40	ug/L			06/04/15 07:17	1
n-Butylbenzene	ND		5.0	0.40	ug/L			06/04/15 07:17	1
N-Propylbenzene	ND		2.0	0.25	ug/L			06/04/15 07:17	1
o-Xylene	ND		2.0	0.25	ug/L			06/04/15 07:17	1
sec-Butylbenzene	ND		5.0	0.25	ug/L			06/04/15 07:17	1
Styrene	ND		2.0	0.25	ug/L			06/04/15 07:17	1
1,2-Dibromoethane (EDB)	ND		2.0	0.25	ug/L			06/04/15 07:17	1
tert-Butylbenzene	ND		5.0	0.25	ug/L			06/04/15 07:17	1

TestAmerica Irvine

# QC Sample Results

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 440-259289/3**  
**Matrix: Water**  
**Analysis Batch: 259289**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromochloromethane	ND		5.0	0.25	ug/L			06/04/15 07:17	1
Tetrachloroethene	ND		2.0	0.25	ug/L			06/04/15 07:17	1
Bromodichloromethane	ND		2.0	0.25	ug/L			06/04/15 07:17	1
Toluene	ND		2.0	0.25	ug/L			06/04/15 07:17	1
Dibromochloromethane	ND		2.0	0.25	ug/L			06/04/15 07:17	1
trans-1,2-Dichloroethene	ND		2.0	0.25	ug/L			06/04/15 07:17	1
p-Isopropyltoluene	ND		2.0	0.25	ug/L			06/04/15 07:17	1
trans-1,3-Dichloropropene	ND		2.0	0.25	ug/L			06/04/15 07:17	1
Trichloroethene	ND		2.0	0.25	ug/L			06/04/15 07:17	1
Trichlorofluoromethane	ND		5.0	0.25	ug/L			06/04/15 07:17	1
Vinyl chloride	ND		5.0	0.25	ug/L			06/04/15 07:17	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	116		80 - 128		06/04/15 07:17	1
4-Bromofluorobenzene (Surr)	102		80 - 120		06/04/15 07:17	1
Dibromofluoromethane (Surr)	98		76 - 132		06/04/15 07:17	1

**Lab Sample ID: LCS 440-259289/4**  
**Matrix: Water**  
**Analysis Batch: 259289**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	25.0	28.7		ug/L		115	60 - 141
1,1,1-Trichloroethane	25.0	26.8		ug/L		107	70 - 130
1,1,1,2-Tetrachloroethane	25.0	26.2		ug/L		105	63 - 130
1,1,2-Trichloroethane	25.0	24.6		ug/L		98	70 - 130
1,1-Dichloroethane	25.0	25.4		ug/L		102	64 - 130
1,1-Dichloroethene	25.0	26.0		ug/L		104	70 - 130
1,1-Dichloropropene	25.0	25.0		ug/L		100	70 - 130
1,2,3-Trichlorobenzene	25.0	25.6		ug/L		102	60 - 140
1,2,3-Trichloropropane	25.0	27.2		ug/L		109	63 - 130
1,2,4-Trichlorobenzene	25.0	26.5		ug/L		106	60 - 140
1,2,4-Trimethylbenzene	25.0	24.9		ug/L		100	70 - 135
1,2-Dibromo-3-Chloropropane	25.0	27.3		ug/L		109	52 - 140
1,2-Dichlorobenzene	25.0	25.0		ug/L		100	70 - 130
1,2-Dichloroethane	25.0	22.8		ug/L		91	57 - 138
1,2-Dichloropropane	25.0	26.1		ug/L		104	67 - 130
1,3,5-Trimethylbenzene	25.0	25.5		ug/L		102	70 - 136
1,3-Dichlorobenzene	25.0	24.9		ug/L		100	70 - 130
1,3-Dichloropropane	25.0	24.4		ug/L		98	70 - 130
1,4-Dichlorobenzene	25.0	24.9		ug/L		100	70 - 130
2,2-Dichloropropane	25.0	32.0		ug/L		128	68 - 141
2-Chlorotoluene	25.0	24.4		ug/L		98	70 - 130
4-Chlorotoluene	25.0	24.5		ug/L		98	70 - 130
Benzene	25.0	24.3		ug/L		97	68 - 130
Bromobenzene	25.0	25.3		ug/L		101	70 - 130
Bromoform	25.0	29.3		ug/L		117	60 - 148
Bromomethane	25.0	26.3		ug/L		105	64 - 139

TestAmerica Irvine

# QC Sample Results

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 440-259289/4**  
**Matrix: Water**  
**Analysis Batch: 259289**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Carbon tetrachloride	25.0	29.2		ug/L		117	60 - 150
Chlorobenzene	25.0	24.6		ug/L		99	70 - 130
Chloroethane	25.0	26.7		ug/L		107	64 - 135
Chloroform	25.0	23.7		ug/L		95	70 - 130
Chloromethane	25.0	26.9		ug/L		107	47 - 140
cis-1,2-Dichloroethene	25.0	25.8		ug/L		103	70 - 133
cis-1,3-Dichloropropene	25.0	29.3		ug/L		117	70 - 133
Dibromomethane	25.0	23.2		ug/L		93	70 - 130
Dichlorodifluoromethane	25.0	22.0		ug/L		88	29 - 150
Ethylbenzene	25.0	24.4		ug/L		98	70 - 130
Hexachlorobutadiene	25.0	26.8		ug/L		107	10 - 150
Isopropylbenzene	25.0	25.0		ug/L		100	70 - 136
m,p-Xylene	25.0	25.8		ug/L		103	70 - 130
Methylene Chloride	25.0	24.6		ug/L		98	52 - 130
Naphthalene	25.0	26.8		ug/L		107	60 - 140
n-Butylbenzene	25.0	25.3		ug/L		101	65 - 150
N-Propylbenzene	25.0	25.6		ug/L		102	67 - 139
o-Xylene	25.0	24.7		ug/L		99	70 - 130
sec-Butylbenzene	25.0	25.1		ug/L		100	70 - 138
Styrene	25.0	25.6		ug/L		102	70 - 134
1,2-Dibromoethane (EDB)	25.0	26.3		ug/L		105	70 - 130
tert-Butylbenzene	25.0	25.7		ug/L		103	70 - 130
Bromochloromethane	25.0	24.2		ug/L		97	70 - 130
Tetrachloroethene	25.0	27.1		ug/L		108	70 - 130
Bromodichloromethane	25.0	24.5		ug/L		98	70 - 132
Toluene	25.0	24.6		ug/L		98	70 - 130
Dibromochloromethane	25.0	26.2		ug/L		105	69 - 145
trans-1,2-Dichloroethene	25.0	26.7		ug/L		107	70 - 130
p-Isopropyltoluene	25.0	24.7		ug/L		99	70 - 132
trans-1,3-Dichloropropene	25.0	27.4		ug/L		109	70 - 132
Trichloroethene	25.0	25.6		ug/L		103	70 - 130
Trichlorofluoromethane	25.0	24.9		ug/L		99	60 - 150
Vinyl chloride	25.0	25.6		ug/L		103	59 - 133

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	111		80 - 128
4-Bromofluorobenzene (Surr)	100		80 - 120
Dibromofluoromethane (Surr)	101		76 - 132

**Lab Sample ID: 440-111689-C-3 MS**  
**Matrix: Water**  
**Analysis Batch: 259289**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec. Limits
				Result	Qualifier				
1,1,1,2-Tetrachloroethane	ND		250	282		ug/L		113	60 - 149
1,1,1-Trichloroethane	ND		250	248		ug/L		99	70 - 130
1,1,2,2-Tetrachloroethane	ND		250	267		ug/L		107	63 - 130
1,1,2-Trichloroethane	2.6	J	250	253		ug/L		100	70 - 130

TestAmerica Irvine

# QC Sample Results

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-111689-C-3 MS**

**Matrix: Water**

**Analysis Batch: 259289**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethane	ND		250	244		ug/L		97	65 - 130
1,1-Dichloroethene	ND		250	238		ug/L		95	70 - 130
1,1-Dichloropropene	ND		250	238		ug/L		95	64 - 130
1,2,3-Trichlorobenzene	ND		250	267		ug/L		107	60 - 140
1,2,3-Trichloropropane	ND		250	256		ug/L		102	60 - 130
1,2,4-Trichlorobenzene	ND		250	271		ug/L		108	60 - 140
1,2,4-Trimethylbenzene	ND		250	252		ug/L		101	70 - 130
1,2-Dibromo-3-Chloropropane	ND		250	253		ug/L		101	48 - 140
1,2-Dichlorobenzene	ND		250	255		ug/L		102	70 - 130
1,2-Dichloroethane	ND		250	216		ug/L		86	56 - 146
1,2-Dichloropropane	ND		250	261		ug/L		104	69 - 130
1,3,5-Trimethylbenzene	ND		250	254		ug/L		102	70 - 130
1,3-Dichlorobenzene	ND		250	252		ug/L		101	70 - 130
1,3-Dichloropropane	ND		250	242		ug/L		97	70 - 130
1,4-Dichlorobenzene	ND		250	250		ug/L		100	70 - 130
2,2-Dichloropropane	ND		250	287		ug/L		115	69 - 138
2-Chlorotoluene	ND		250	247		ug/L		99	70 - 130
4-Chlorotoluene	ND		250	245		ug/L		98	70 - 130
Benzene	6.4	J	250	245		ug/L		95	66 - 130
Bromobenzene	ND		250	260		ug/L		104	70 - 130
Bromoform	ND		250	276		ug/L		110	59 - 150
Bromomethane	ND		250	219		ug/L		87	62 - 131
Carbon tetrachloride	ND		250	261		ug/L		104	60 - 150
Chlorobenzene	ND		250	247		ug/L		99	70 - 130
Chloroethane	ND		250	238		ug/L		95	68 - 130
Chloroform	ND		250	226		ug/L		90	70 - 130
Chloromethane	ND		250	207		ug/L		83	39 - 144
cis-1,2-Dichloroethene	ND		250	249		ug/L		99	70 - 130
cis-1,3-Dichloropropene	ND		250	291		ug/L		116	70 - 133
Dibromomethane	ND		250	223		ug/L		89	70 - 130
Dichlorodifluoromethane	ND		250	133		ug/L		53	25 - 142
Ethylbenzene	ND		250	241		ug/L		96	70 - 130
Hexachlorobutadiene	ND		250	268		ug/L		107	10 - 150
Isopropylbenzene	ND		250	247		ug/L		99	70 - 132
m,p-Xylene	ND		250	262		ug/L		105	70 - 133
Methylene Chloride	20	J	250	248		ug/L		91	52 - 130
Naphthalene	ND		250	273		ug/L		109	60 - 140
n-Butylbenzene	ND		250	250		ug/L		100	61 - 149
N-Propylbenzene	ND		250	256		ug/L		102	66 - 135
o-Xylene	ND		250	251		ug/L		100	70 - 133
sec-Butylbenzene	ND		250	254		ug/L		101	67 - 134
Styrene	ND		250	260		ug/L		104	29 - 150
1,2-Dibromoethane (EDB)	ND		250	262		ug/L		105	70 - 131
tert-Butylbenzene	ND		250	259		ug/L		104	70 - 130
Bromochloromethane	ND		250	237		ug/L		95	70 - 130
Tetrachloroethene	ND		250	263		ug/L		105	70 - 137
Bromodichloromethane	ND		250	234		ug/L		94	70 - 138
Toluene	ND		250	244		ug/L		98	70 - 130

TestAmerica Irvine

# QC Sample Results

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-111689-C-3 MS**

**Matrix: Water**

**Analysis Batch: 259289**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dibromochloromethane	ND		250	256		ug/L		102	70 - 148
trans-1,2-Dichloroethene	ND		250	252		ug/L		101	70 - 130
p-Isopropyltoluene	ND		250	248		ug/L		99	70 - 130
trans-1,3-Dichloropropene	ND		250	263		ug/L		105	70 - 138
Trichloroethene	ND		250	245		ug/L		98	70 - 130
Trichlorofluoromethane	ND		250	209		ug/L		84	60 - 150
Vinyl chloride	ND		250	205		ug/L		82	50 - 137
<b>MS MS</b>									
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>						
<i>Toluene-d8 (Surr)</i>	111		80 - 128						
<i>4-Bromofluorobenzene (Surr)</i>	100		80 - 120						
<i>Dibromofluoromethane (Surr)</i>	99		76 - 132						

**Lab Sample ID: 440-111689-C-3 MSD**

**Matrix: Water**

**Analysis Batch: 259289**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	ND		250	288		ug/L		115	60 - 149	2	20
1,1,1-Trichloroethane	ND		250	258		ug/L		103	70 - 130	4	20
1,1,2,2-Tetrachloroethane	ND		250	265		ug/L		106	63 - 130	1	30
1,1,2-Trichloroethane	2.6	J	250	254		ug/L		101	70 - 130	1	25
1,1-Dichloroethane	ND		250	249		ug/L		100	65 - 130	2	20
1,1-Dichloroethene	ND		250	250		ug/L		100	70 - 130	5	20
1,1-Dichloropropene	ND		250	249		ug/L		100	64 - 130	5	20
1,2,3-Trichlorobenzene	ND		250	273		ug/L		109	60 - 140	2	20
1,2,3-Trichloropropane	ND		250	262		ug/L		105	60 - 130	2	30
1,2,4-Trichlorobenzene	ND		250	283		ug/L		113	60 - 140	4	20
1,2,4-Trimethylbenzene	ND		250	262		ug/L		105	70 - 130	4	25
1,2-Dibromo-3-Chloropropane	ND		250	250		ug/L		100	48 - 140	1	30
1,2-Dichlorobenzene	ND		250	267		ug/L		107	70 - 130	4	20
1,2-Dichloroethane	ND		250	216		ug/L		86	56 - 146	0	20
1,2-Dichloropropane	ND		250	271		ug/L		108	69 - 130	4	20
1,3,5-Trimethylbenzene	ND		250	265		ug/L		106	70 - 130	4	20
1,3-Dichlorobenzene	ND		250	263		ug/L		105	70 - 130	4	20
1,3-Dichloropropane	ND		250	247		ug/L		99	70 - 130	2	25
1,4-Dichlorobenzene	ND		250	261		ug/L		105	70 - 130	5	20
2,2-Dichloropropane	ND		250	291		ug/L		117	69 - 138	2	25
2-Chlorotoluene	ND		250	257		ug/L		103	70 - 130	4	20
4-Chlorotoluene	ND		250	260		ug/L		104	70 - 130	6	20
Benzene	6.4	J	250	254		ug/L		99	66 - 130	4	20
Bromobenzene	ND		250	272		ug/L		109	70 - 130	4	20
Bromoform	ND		250	279		ug/L		112	59 - 150	1	25
Bromomethane	ND		250	229		ug/L		91	62 - 131	4	25
Carbon tetrachloride	ND		250	275		ug/L		110	60 - 150	5	25
Chlorobenzene	ND		250	254		ug/L		101	70 - 130	2	20
Chloroethane	ND		250	246		ug/L		98	68 - 130	3	25
Chloroform	ND		250	232		ug/L		93	70 - 130	3	20

TestAmerica Irvine

# QC Sample Results

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-111689-C-3 MSD**

**Matrix: Water**

**Analysis Batch: 259289**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier				Limits		
Chloromethane	ND		250	218		ug/L		87	39 - 144	5	25
cis-1,2-Dichloroethene	ND		250	257		ug/L		103	70 - 130	3	20
cis-1,3-Dichloropropene	ND		250	294		ug/L		117	70 - 133	1	20
Dibromomethane	ND		250	226		ug/L		90	70 - 130	1	25
Dichlorodifluoromethane	ND		250	134		ug/L		54	25 - 142	1	30
Ethylbenzene	ND		250	248		ug/L		99	70 - 130	3	20
Hexachlorobutadiene	ND		250	284		ug/L		113	10 - 150	6	20
Isopropylbenzene	ND		250	256		ug/L		102	70 - 132	3	20
m,p-Xylene	ND		250	269		ug/L		107	70 - 133	2	25
Methylene Chloride	20	J	250	258		ug/L		95	52 - 130	4	20
Naphthalene	ND		250	274		ug/L		110	60 - 140	0	30
n-Butylbenzene	ND		250	265		ug/L		106	61 - 149	6	20
N-Propylbenzene	ND		250	271		ug/L		108	66 - 135	6	20
o-Xylene	ND		250	253		ug/L		101	70 - 133	1	20
sec-Butylbenzene	ND		250	263		ug/L		105	67 - 134	4	20
Styrene	ND		250	264		ug/L		106	29 - 150	2	35
1,2-Dibromoethane (EDB)	ND		250	262		ug/L		105	70 - 131	0	25
tert-Butylbenzene	ND		250	270		ug/L		108	70 - 130	4	20
Bromochloromethane	ND		250	242		ug/L		97	70 - 130	2	25
Tetrachloroethene	ND		250	272		ug/L		109	70 - 137	3	20
Bromodichloromethane	ND		250	241		ug/L		97	70 - 138	3	20
Toluene	ND		250	251		ug/L		100	70 - 130	3	20
Dibromochloromethane	ND		250	261		ug/L		104	70 - 148	2	25
trans-1,2-Dichloroethene	ND		250	264		ug/L		106	70 - 130	5	20
p-Isopropyltoluene	ND		250	258		ug/L		103	70 - 130	4	20
trans-1,3-Dichloropropene	ND		250	273		ug/L		109	70 - 138	4	25
Trichloroethene	ND		250	256		ug/L		102	70 - 130	4	20
Trichlorofluoromethane	ND		250	218		ug/L		87	60 - 150	4	25
Vinyl chloride	ND		250	217		ug/L		87	50 - 137	6	30

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
Toluene-d8 (Surr)	110		80 - 128
4-Bromofluorobenzene (Surr)	102		80 - 120
Dibromofluoromethane (Surr)	99		76 - 132

## Method: 8260B/5030B - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 440-259626/4**

**Matrix: Solid**

**Analysis Batch: 259626**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1,1,2-Tetrachloroethane	ND		0.0050	0.0010	mg/Kg			06/05/15 09:38	1
1,1,1-Trichloroethane	ND		0.0020	0.0010	mg/Kg			06/05/15 09:38	1
1,1,2,2-Tetrachloroethane	ND		0.0020	0.0010	mg/Kg			06/05/15 09:38	1
1,1,2-Trichloroethane	ND		0.0020	0.0010	mg/Kg			06/05/15 09:38	1
1,1-Dichloroethane	ND		0.0020	0.0010	mg/Kg			06/05/15 09:38	1
1,1-Dichloroethene	ND		0.0050	0.0010	mg/Kg			06/05/15 09:38	1

TestAmerica Irvine



# QC Sample Results

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

## Method: 8260B/5030B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 440-259626/4**  
**Matrix: Solid**  
**Analysis Batch: 259626**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloropropene	ND		0.0020	0.0010	mg/Kg			06/05/15 09:38	1
1,2,3-Trichlorobenzene	ND		0.0050	0.0010	mg/Kg			06/05/15 09:38	1
1,2,3-Trichloropropane	ND		0.010	0.0010	mg/Kg			06/05/15 09:38	1
1,2,4-Trichlorobenzene	ND		0.0050	0.0010	mg/Kg			06/05/15 09:38	1
1,2,4-Trimethylbenzene	ND		0.0020	0.0010	mg/Kg			06/05/15 09:38	1
1,2-Dibromo-3-Chloropropane	ND		0.0050	0.0020	mg/Kg			06/05/15 09:38	1
1,2-Dichlorobenzene	ND		0.0020	0.0010	mg/Kg			06/05/15 09:38	1
1,2-Dichloroethane	ND		0.0020	0.0010	mg/Kg			06/05/15 09:38	1
1,2-Dichloropropane	ND		0.0020	0.0010	mg/Kg			06/05/15 09:38	1
1,3,5-Trimethylbenzene	ND		0.0020	0.0010	mg/Kg			06/05/15 09:38	1
1,3-Dichlorobenzene	ND		0.0020	0.0010	mg/Kg			06/05/15 09:38	1
1,3-Dichloropropane	ND		0.0020	0.0010	mg/Kg			06/05/15 09:38	1
1,4-Dichlorobenzene	ND		0.0020	0.0010	mg/Kg			06/05/15 09:38	1
2,2-Dichloropropane	ND		0.0020	0.0010	mg/Kg			06/05/15 09:38	1
2-Chlorotoluene	ND		0.0050	0.0010	mg/Kg			06/05/15 09:38	1
4-Chlorotoluene	ND		0.0050	0.0010	mg/Kg			06/05/15 09:38	1
Benzene	ND		0.0020	0.0010	mg/Kg			06/05/15 09:38	1
Bromobenzene	ND		0.0050	0.0010	mg/Kg			06/05/15 09:38	1
Bromoform	ND		0.0050	0.0020	mg/Kg			06/05/15 09:38	1
Bromomethane	ND		0.0050	0.0010	mg/Kg			06/05/15 09:38	1
Carbon tetrachloride	ND		0.0050	0.0010	mg/Kg			06/05/15 09:38	1
Chlorobenzene	ND		0.0020	0.0010	mg/Kg			06/05/15 09:38	1
Chloroethane	ND		0.0050	0.0020	mg/Kg			06/05/15 09:38	1
Chloroform	ND		0.0020	0.0010	mg/Kg			06/05/15 09:38	1
Chloromethane	ND		0.0050	0.0010	mg/Kg			06/05/15 09:38	1
cis-1,2-Dichloroethene	ND		0.0020	0.0010	mg/Kg			06/05/15 09:38	1
cis-1,3-Dichloropropene	ND		0.0020	0.0010	mg/Kg			06/05/15 09:38	1
Dibromomethane	ND		0.0020	0.0010	mg/Kg			06/05/15 09:38	1
Dichlorodifluoromethane	ND		0.0050	0.0020	mg/Kg			06/05/15 09:38	1
Ethylbenzene	ND		0.0020	0.0010	mg/Kg			06/05/15 09:38	1
Hexachlorobutadiene	ND		0.0050	0.0010	mg/Kg			06/05/15 09:38	1
Isopropylbenzene	ND		0.0020	0.0010	mg/Kg			06/05/15 09:38	1
m,p-Xylene	ND		0.0040	0.0020	mg/Kg			06/05/15 09:38	1
Methylene Chloride	ND		0.020	0.0050	mg/Kg			06/05/15 09:38	1
Naphthalene	ND		0.0050	0.0020	mg/Kg			06/05/15 09:38	1
n-Butylbenzene	ND		0.0050	0.0010	mg/Kg			06/05/15 09:38	1
N-Propylbenzene	ND		0.0020	0.0010	mg/Kg			06/05/15 09:38	1
o-Xylene	ND		0.0020	0.0010	mg/Kg			06/05/15 09:38	1
sec-Butylbenzene	ND		0.0050	0.0010	mg/Kg			06/05/15 09:38	1
Styrene	ND		0.0020	0.0010	mg/Kg			06/05/15 09:38	1
1,2-Dibromoethane (EDB)	ND		0.0020	0.0010	mg/Kg			06/05/15 09:38	1
tert-Butylbenzene	ND		0.0050	0.0010	mg/Kg			06/05/15 09:38	1
Bromochloromethane	ND		0.0050	0.0010	mg/Kg			06/05/15 09:38	1
Tetrachloroethene	ND		0.0020	0.0010	mg/Kg			06/05/15 09:38	1
Bromodichloromethane	ND		0.0020	0.0010	mg/Kg			06/05/15 09:38	1
Toluene	ND		0.0020	0.0010	mg/Kg			06/05/15 09:38	1
Dibromochloromethane	ND		0.0020	0.0010	mg/Kg			06/05/15 09:38	1
trans-1,2-Dichloroethene	ND		0.0020	0.0010	mg/Kg			06/05/15 09:38	1

TestAmerica Irvine

# QC Sample Results

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

## Method: 8260B/5030B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 440-259626/4**  
**Matrix: Solid**  
**Analysis Batch: 259626**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
p-Isopropyltoluene	ND		0.0020	0.0010	mg/Kg			06/05/15 09:38	1
trans-1,3-Dichloropropene	ND		0.0020	0.0010	mg/Kg			06/05/15 09:38	1
Trichloroethene	ND		0.0020	0.0010	mg/Kg			06/05/15 09:38	1
Trichlorofluoromethane	ND		0.0050	0.0010	mg/Kg			06/05/15 09:38	1
Vinyl chloride	ND		0.0050	0.0010	mg/Kg			06/05/15 09:38	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	114		79 - 123		06/05/15 09:38	1
4-Bromofluorobenzene (Surr)	94		79 - 120		06/05/15 09:38	1
Dibromofluoromethane (Surr)	107		60 - 120		06/05/15 09:38	1

**Lab Sample ID: LCS 440-259626/5**  
**Matrix: Solid**  
**Analysis Batch: 259626**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	0.0500	0.0505		mg/Kg		101	70 - 130
1,1,1-Trichloroethane	0.0500	0.0466		mg/Kg		93	65 - 135
1,1,2,2-Tetrachloroethane	0.0500	0.0482		mg/Kg		96	55 - 140
1,1,2-Trichloroethane	0.0500	0.0545		mg/Kg		109	65 - 135
1,1-Dichloroethane	0.0500	0.0496		mg/Kg		99	70 - 130
1,1-Dichloroethene	0.0500	0.0482		mg/Kg		96	70 - 125
1,1-Dichloropropene	0.0500	0.0481		mg/Kg		96	70 - 130
1,2,3-Trichlorobenzene	0.0500	0.0466		mg/Kg		93	60 - 130
1,2,3-Trichloropropane	0.0500	0.0481		mg/Kg		96	60 - 135
1,2,4-Trichlorobenzene	0.0500	0.0503		mg/Kg		101	70 - 135
1,2,4-Trimethylbenzene	0.0500	0.0489		mg/Kg		98	70 - 125
1,2-Dibromo-3-Chloropropane	0.0500	0.0589		mg/Kg		118	50 - 135
1,2-Dichlorobenzene	0.0500	0.0507		mg/Kg		101	75 - 120
1,2-Dichloroethane	0.0500	0.0483		mg/Kg		97	60 - 140
1,2-Dichloropropane	0.0500	0.0471		mg/Kg		94	70 - 130
1,3,5-Trimethylbenzene	0.0500	0.0495		mg/Kg		99	70 - 125
1,3-Dichlorobenzene	0.0500	0.0485		mg/Kg		97	75 - 125
1,3-Dichloropropane	0.0500	0.0534		mg/Kg		107	70 - 125
1,4-Dichlorobenzene	0.0500	0.0508		mg/Kg		102	75 - 120
2,2-Dichloropropane	0.0500	0.0488		mg/Kg		98	60 - 145
2-Chlorotoluene	0.0500	0.0460		mg/Kg		92	70 - 125
4-Chlorotoluene	0.0500	0.0479		mg/Kg		96	75 - 125
Benzene	0.0500	0.0478		mg/Kg		96	65 - 120
Bromobenzene	0.0500	0.0439		mg/Kg		88	75 - 120
Bromoform	0.0500	0.0536		mg/Kg		107	55 - 135
Bromomethane	0.0500	0.0396		mg/Kg		79	60 - 145
Carbon tetrachloride	0.0500	0.0470		mg/Kg		94	65 - 140
Chlorobenzene	0.0500	0.0476		mg/Kg		95	75 - 120
Chloroethane	0.0500	0.0412		mg/Kg		82	60 - 140
Chloroform	0.0500	0.0490		mg/Kg		98	70 - 130
Chloromethane	0.0500	0.0367		mg/Kg		73	45 - 145
cis-1,2-Dichloroethene	0.0500	0.0497		mg/Kg		99	70 - 125

TestAmerica Irvine

# QC Sample Results

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

## Method: 8260B/5030B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 440-259626/5**  
**Matrix: Solid**  
**Analysis Batch: 259626**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
cis-1,3-Dichloropropene	0.0500	0.0572		mg/Kg		114	75 - 125
Dibromomethane	0.0500	0.0452		mg/Kg		90	70 - 130
Dichlorodifluoromethane	0.0500	0.0337		mg/Kg		67	35 - 160
Ethylbenzene	0.0500	0.0496		mg/Kg		99	70 - 125
Hexachlorobutadiene	0.0500	0.0502		mg/Kg		100	60 - 135
Isopropylbenzene	0.0500	0.0510		mg/Kg		102	75 - 130
m,p-Xylene	0.0500	0.0481		mg/Kg		96	70 - 125
Methylene Chloride	0.0500	0.0469		mg/Kg		94	55 - 135
Naphthalene	0.0500	0.0535		mg/Kg		107	55 - 135
n-Butylbenzene	0.0500	0.0509		mg/Kg		102	70 - 130
N-Propylbenzene	0.0500	0.0475		mg/Kg		95	70 - 130
o-Xylene	0.0500	0.0496		mg/Kg		99	70 - 125
sec-Butylbenzene	0.0500	0.0500		mg/Kg		100	70 - 125
Styrene	0.0500	0.0514		mg/Kg		103	75 - 130
1,2-Dibromoethane (EDB)	0.0500	0.0534		mg/Kg		107	70 - 130
tert-Butylbenzene	0.0500	0.0498		mg/Kg		100	70 - 125
Bromochloromethane	0.0500	0.0479		mg/Kg		96	70 - 135
Tetrachloroethene	0.0500	0.0519		mg/Kg		104	70 - 125
Bromodichloromethane	0.0500	0.0463		mg/Kg		93	70 - 135
Toluene	0.0500	0.0515		mg/Kg		103	70 - 125
Dibromochloromethane	0.0500	0.0523		mg/Kg		105	65 - 140
trans-1,2-Dichloroethene	0.0500	0.0512		mg/Kg		102	70 - 125
p-Isopropyltoluene	0.0500	0.0509		mg/Kg		102	75 - 125
trans-1,3-Dichloropropene	0.0500	0.0570		mg/Kg		114	70 - 135
Trichloroethene	0.0500	0.0470		mg/Kg		94	70 - 125
Trichlorofluoromethane	0.0500	0.0446		mg/Kg		89	60 - 145
Vinyl chloride	0.0500	0.0440		mg/Kg		88	55 - 135

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	115		79 - 123
4-Bromofluorobenzene (Surr)	93		79 - 120
Dibromofluoromethane (Surr)	109		60 - 120

**Lab Sample ID: 440-111667-A-1 MS**  
**Matrix: Solid**  
**Analysis Batch: 259626**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	ND		0.0500	0.0499		mg/Kg		100	65 - 145
1,1,1-Trichloroethane	ND		0.0500	0.0445		mg/Kg		89	65 - 145
1,1,1,2,2-Tetrachloroethane	ND		0.0500	0.0508		mg/Kg		102	40 - 160
1,1,2-Trichloroethane	ND		0.0500	0.0562		mg/Kg		112	65 - 140
1,1-Dichloroethane	ND		0.0500	0.0502		mg/Kg		100	65 - 135
1,1-Dichloroethene	ND		0.0500	0.0498		mg/Kg		100	65 - 135
1,1-Dichloropropene	ND		0.0500	0.0486		mg/Kg		97	65 - 135
1,2,3-Trichlorobenzene	ND		0.0500	0.0495		mg/Kg		99	45 - 145
1,2,3-Trichloropropane	ND		0.0500	0.0518		mg/Kg		104	50 - 150
1,2,4-Trichlorobenzene	ND		0.0500	0.0525		mg/Kg		105	50 - 140

TestAmerica Irvine

# QC Sample Results

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

## Method: 8260B/5030B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-111667-A-1 MS

Matrix: Solid

Analysis Batch: 259626

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trimethylbenzene	ND		0.0500	0.0484		mg/Kg		97	65 - 140
1,2-Dibromo-3-Chloropropane	ND		0.0500	0.0672		mg/Kg		134	40 - 150
1,2-Dichlorobenzene	ND		0.0500	0.0502		mg/Kg		100	70 - 130
1,2-Dichloroethane	ND		0.0500	0.0508		mg/Kg		102	60 - 150
1,2-Dichloropropane	ND		0.0500	0.0493		mg/Kg		99	65 - 130
1,3,5-Trimethylbenzene	ND		0.0500	0.0486		mg/Kg		97	65 - 135
1,3-Dichlorobenzene	ND		0.0500	0.0495		mg/Kg		99	70 - 130
1,3-Dichloropropane	ND		0.0500	0.0565		mg/Kg		113	65 - 140
1,4-Dichlorobenzene	ND		0.0500	0.0509		mg/Kg		102	70 - 130
2,2-Dichloropropane	ND		0.0500	0.0485		mg/Kg		97	65 - 150
2-Chlorotoluene	ND		0.0500	0.0455		mg/Kg		91	60 - 135
4-Chlorotoluene	ND		0.0500	0.0471		mg/Kg		94	65 - 135
Benzene	ND		0.0500	0.0488		mg/Kg		98	65 - 130
Bromobenzene	ND		0.0500	0.0449		mg/Kg		90	65 - 140
Bromoform	ND		0.0500	0.0562		mg/Kg		112	50 - 145
Bromomethane	ND		0.0500	0.0416		mg/Kg		83	60 - 155
Carbon tetrachloride	ND		0.0500	0.0462		mg/Kg		92	60 - 145
Chlorobenzene	ND		0.0500	0.0490		mg/Kg		98	70 - 130
Chloroethane	ND		0.0500	0.0445		mg/Kg		89	60 - 150
Chloroform	ND		0.0500	0.0504		mg/Kg		101	65 - 135
Chloromethane	ND		0.0500	0.0426		mg/Kg		85	40 - 145
cis-1,2-Dichloroethene	ND		0.0500	0.0498		mg/Kg		100	65 - 135
cis-1,3-Dichloropropene	ND		0.0500	0.0600		mg/Kg		120	70 - 135
Dibromomethane	ND		0.0500	0.0491		mg/Kg		98	65 - 140
Dichlorodifluoromethane	ND		0.0500	0.0425		mg/Kg		85	30 - 160
Ethylbenzene	ND		0.0500	0.0503		mg/Kg		101	70 - 135
Hexachlorobutadiene	ND		0.0500	0.0509		mg/Kg		102	50 - 145
Isopropylbenzene	ND		0.0500	0.0509		mg/Kg		102	70 - 145
m,p-Xylene	ND		0.0500	0.0489		mg/Kg		98	70 - 130
Methylene Chloride	ND		0.0500	0.0453		mg/Kg		91	55 - 145
Naphthalene	ND		0.0500	0.0575		mg/Kg		115	40 - 150
n-Butylbenzene	ND		0.0500	0.0515		mg/Kg		103	55 - 145
N-Propylbenzene	ND		0.0500	0.0477		mg/Kg		95	65 - 140
o-Xylene	ND		0.0500	0.0494		mg/Kg		99	65 - 130
sec-Butylbenzene	ND		0.0500	0.0493		mg/Kg		99	60 - 135
Styrene	ND		0.0500	0.0532		mg/Kg		106	70 - 140
1,2-Dibromoethane (EDB)	ND		0.0500	0.0584		mg/Kg		117	65 - 140
tert-Butylbenzene	ND		0.0500	0.0489		mg/Kg		98	60 - 140
Bromochloromethane	ND		0.0500	0.0505		mg/Kg		101	65 - 145
Tetrachloroethene	ND		0.0500	0.0535		mg/Kg		107	65 - 135
Bromodichloromethane	ND		0.0500	0.0478		mg/Kg		96	65 - 145
Toluene	ND		0.0500	0.0534		mg/Kg		107	70 - 130
Dibromochloromethane	ND		0.0500	0.0550		mg/Kg		110	60 - 145
trans-1,2-Dichloroethene	ND		0.0500	0.0530		mg/Kg		106	70 - 135
p-Isopropyltoluene	ND		0.0500	0.0505		mg/Kg		101	60 - 140
trans-1,3-Dichloropropene	ND		0.0500	0.0591		mg/Kg		118	60 - 145
Trichloroethene	ND		0.0500	0.0496		mg/Kg		99	65 - 140
Trichlorofluoromethane	ND		0.0500	0.0469		mg/Kg		94	55 - 155

TestAmerica Irvine

# QC Sample Results

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

## Method: 8260B/5030B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-111667-A-1 MS**  
**Matrix: Solid**  
**Analysis Batch: 259626**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Vinyl chloride	ND		0.0500	0.0482		mg/Kg		96	55 - 140
<b>Surrogate</b>	<b>%Recovery</b>	<b>MS Qualifier</b>	<b>Limits</b>						
<i>Toluene-d8 (Surr)</i>	114		79 - 123						
<i>4-Bromofluorobenzene (Surr)</i>	93		79 - 120						
<i>Dibromofluoromethane (Surr)</i>	108		60 - 120						

**Lab Sample ID: 440-111667-A-1 MSD**  
**Matrix: Solid**  
**Analysis Batch: 259626**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	ND		0.0499	0.0495		mg/Kg		99	65 - 145	1	20
1,1,1-Trichloroethane	ND		0.0499	0.0457		mg/Kg		92	65 - 145	3	20
1,1,1,2,2-Tetrachloroethane	ND		0.0499	0.0508		mg/Kg		102	40 - 160	0	30
1,1,2-Trichloroethane	ND		0.0499	0.0571		mg/Kg		115	65 - 140	2	30
1,1-Dichloroethane	ND		0.0499	0.0515		mg/Kg		103	65 - 135	3	25
1,1-Dichloroethene	ND		0.0499	0.0504		mg/Kg		101	65 - 135	1	25
1,1-Dichloropropene	ND		0.0499	0.0506		mg/Kg		101	65 - 135	4	20
1,2,3-Trichlorobenzene	ND		0.0499	0.0495		mg/Kg		99	45 - 145	0	30
1,2,3-Trichloropropane	ND		0.0499	0.0513		mg/Kg		103	50 - 150	1	30
1,2,4-Trichlorobenzene	ND		0.0499	0.0503		mg/Kg		101	50 - 140	4	30
1,2,4-Trimethylbenzene	ND		0.0499	0.0472		mg/Kg		95	65 - 140	3	25
1,2-Dibromo-3-Chloropropane	ND		0.0499	0.0655		mg/Kg		131	40 - 150	3	30
1,2-Dichlorobenzene	ND		0.0499	0.0503		mg/Kg		101	70 - 130	0	25
1,2-Dichloroethane	ND		0.0499	0.0520		mg/Kg		104	60 - 150	2	25
1,2-Dichloropropane	ND		0.0499	0.0503		mg/Kg		101	65 - 130	2	20
1,3,5-Trimethylbenzene	ND		0.0499	0.0472		mg/Kg		95	65 - 135	3	25
1,3-Dichlorobenzene	ND		0.0499	0.0481		mg/Kg		96	70 - 130	3	25
1,3-Dichloropropane	ND		0.0499	0.0565		mg/Kg		113	65 - 140	0	25
1,4-Dichlorobenzene	ND		0.0499	0.0504		mg/Kg		101	70 - 130	1	25
2,2-Dichloropropane	ND		0.0499	0.0495		mg/Kg		99	65 - 150	2	25
2-Chlorotoluene	ND		0.0499	0.0448		mg/Kg		90	60 - 135	2	25
4-Chlorotoluene	ND		0.0499	0.0466		mg/Kg		93	65 - 135	1	25
Benzene	ND		0.0499	0.0496		mg/Kg		99	65 - 130	2	20
Bromobenzene	ND		0.0499	0.0442		mg/Kg		88	65 - 140	2	25
Bromoform	ND		0.0499	0.0584		mg/Kg		117	50 - 145	4	30
Bromomethane	ND		0.0499	0.0427		mg/Kg		85	60 - 155	2	25
Carbon tetrachloride	ND		0.0499	0.0470		mg/Kg		94	60 - 145	2	25
Chlorobenzene	ND		0.0499	0.0479		mg/Kg		96	70 - 130	2	25
Chloroethane	ND		0.0499	0.0449		mg/Kg		90	60 - 150	1	25
Chloroform	ND		0.0499	0.0511		mg/Kg		102	65 - 135	1	20
Chloromethane	ND		0.0499	0.0427		mg/Kg		86	40 - 145	0	25
cis-1,2-Dichloroethene	ND		0.0499	0.0550		mg/Kg		110	65 - 135	10	25
cis-1,3-Dichloropropene	ND		0.0499	0.0596		mg/Kg		119	70 - 135	1	25
Dibromomethane	ND		0.0499	0.0491		mg/Kg		98	65 - 140	0	25
Dichlorodifluoromethane	ND		0.0499	0.0440		mg/Kg		88	30 - 160	4	35
Ethylbenzene	ND		0.0499	0.0483		mg/Kg		97	70 - 135	4	25

TestAmerica Irvine

# QC Sample Results

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

## Method: 8260B/5030B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 440-111667-A-1 MSD**  
**Matrix: Solid**  
**Analysis Batch: 259626**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Hexachlorobutadiene	ND		0.0499	0.0477		mg/Kg		96	50 - 145	6	35
Isopropylbenzene	ND		0.0499	0.0499		mg/Kg		100	70 - 145	2	25
m,p-Xylene	ND		0.0499	0.0472		mg/Kg		95	70 - 130	4	25
Methylene Chloride	ND		0.0499	0.0510		mg/Kg		102	55 - 145	12	25
Naphthalene	ND		0.0499	0.0577		mg/Kg		116	40 - 150	0	40
n-Butylbenzene	ND		0.0499	0.0497		mg/Kg		100	55 - 145	3	30
N-Propylbenzene	ND		0.0499	0.0463		mg/Kg		93	65 - 140	3	25
o-Xylene	ND		0.0499	0.0485		mg/Kg		97	65 - 130	2	25
sec-Butylbenzene	ND		0.0499	0.0482		mg/Kg		97	60 - 135	2	25
Styrene	ND		0.0499	0.0527		mg/Kg		106	70 - 140	1	25
1,2-Dibromoethane (EDB)	ND		0.0499	0.0557		mg/Kg		112	65 - 140	5	25
tert-Butylbenzene	ND		0.0499	0.0469		mg/Kg		94	60 - 140	4	25
Bromochloromethane	ND		0.0499	0.0509		mg/Kg		102	65 - 145	1	25
Tetrachloroethene	ND		0.0499	0.0525		mg/Kg		105	65 - 135	2	25
Bromodichloromethane	ND		0.0499	0.0479		mg/Kg		96	65 - 145	0	20
Toluene	ND		0.0499	0.0523		mg/Kg		105	70 - 130	2	20
Dibromochloromethane	ND		0.0499	0.0543		mg/Kg		109	60 - 145	1	25
trans-1,2-Dichloroethene	ND		0.0499	0.0506		mg/Kg		101	70 - 135	4	25
p-Isopropyltoluene	ND		0.0499	0.0486		mg/Kg		97	60 - 140	4	25
trans-1,3-Dichloropropene	ND		0.0499	0.0604		mg/Kg		121	60 - 145	2	25
Trichloroethene	ND		0.0499	0.0480		mg/Kg		96	65 - 140	3	25
Trichlorofluoromethane	ND		0.0499	0.0472		mg/Kg		94	55 - 155	1	25
Vinyl chloride	ND		0.0499	0.0485		mg/Kg		97	55 - 140	1	30
<b>Surrogate</b>		<b>MSD</b>	<b>MSD</b>								
		<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>							
<i>Toluene-d8 (Surr)</i>		112		79 - 123							
<i>4-Bromofluorobenzene (Surr)</i>		92		79 - 120							
<i>Dibromofluoromethane (Surr)</i>		110		60 - 120							

## Method: 8015B - Gasoline Range Organics - (GC)

**Lab Sample ID: MB 440-259026/4**  
**Matrix: Water**  
**Analysis Batch: 259026**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
GRO (C4-C12)	ND		50	25	ug/L			06/03/15 10:26	1
<b>Surrogate</b>		<b>MB</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
<i>4-Bromofluorobenzene (Surr)</i>		102						06/03/15 10:26	1

**Lab Sample ID: LCS 440-259026/3**  
**Matrix: Water**  
**Analysis Batch: 259026**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.
							Limits
GRO (C4-C12)	800	868		ug/L		108	80 - 120

TestAmerica Irvine



# QC Sample Results

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

## Method: 8015B - Gasoline Range Organics - (GC) (Continued)

**Lab Sample ID: LCS 440-259026/3**  
**Matrix: Water**  
**Analysis Batch: 259026**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	107		65 - 140

**Lab Sample ID: 440-111354-B-19 MS**  
**Matrix: Water**  
**Analysis Batch: 259026**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.
	Result	Qualifier	Added	Result	Qualifier				Limits
GRO (C4-C12)	ND		800	747		ug/L		93	65 - 140
Surrogate	MS	MS							
4-Bromofluorobenzene (Surr)	%Recovery	Qualifier	Limits						
	116		65 - 140						

**Lab Sample ID: 440-111354-B-19 MSD**  
**Matrix: Water**  
**Analysis Batch: 259026**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
GRO (C4-C12)	ND		800	735		ug/L		92	65 - 140	2	20
Surrogate	MSD	MSD									
4-Bromofluorobenzene (Surr)	%Recovery	Qualifier	Limits								
	111		65 - 140								

## Method: 8015B/5030B - Gasoline Range Organics (GC)

**Lab Sample ID: MB 440-260691/26**  
**Matrix: Solid**  
**Analysis Batch: 260691**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
GRO (C4-C12)	ND		40	20	mg/Kg			06/10/15 21:21	100
Surrogate	MB	MB							
4-Bromofluorobenzene (Surr)	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
	100		65 - 140				06/10/15 21:21	100	

**Lab Sample ID: LCS 440-260691/3**  
**Matrix: Solid**  
**Analysis Batch: 260691**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec.
		Result	Qualifier				Limits
GRO (C4-C12)	160	141		mg/Kg		88	70 - 135
Surrogate	LCS	LCS					
4-Bromofluorobenzene (Surr)	%Recovery	Qualifier	Limits				
	98		65 - 140				

TestAmerica Irvine

# QC Sample Results

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

## Method: 8015B/5030B - Gasoline Range Organics (GC) (Continued)

**Lab Sample ID: LCSD 440-260691/4**  
**Matrix: Solid**  
**Analysis Batch: 260691**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
GRO (C4-C12)	160	144		mg/Kg		90	70 - 135	2	20
<b>Surrogate</b>		<b>%Recovery</b>	<b>Qualifier</b>						<b>Limits</b>
4-Bromofluorobenzene (Surr)		97							65 - 140

## Method: 8015B - Diesel Range Organics (DRO) (GC)

**Lab Sample ID: MB 440-259021/1-A**  
**Matrix: Water**  
**Analysis Batch: 259347**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 259021**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C34	ND		0.50	0.10	mg/L		06/03/15 06:57	06/04/15 09:50	1
DRO (C9-C25)	ND		0.50	0.10	mg/L		06/03/15 06:57	06/04/15 09:50	1
RRO (C24-C40)	ND		0.50	0.10	mg/L		06/03/15 06:57	06/04/15 09:50	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
n-Octacosane	62		45 - 120				06/03/15 06:57	06/04/15 09:50	1

**Lab Sample ID: LCS 440-259021/2-A**  
**Matrix: Water**  
**Analysis Batch: 259347**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 259021**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C10-C28	1.00	0.718		mg/L		72	40 - 115
<b>Surrogate</b>		<b>%Recovery</b>	<b>Qualifier</b>				<b>Limits</b>
n-Octacosane		76					45 - 120

**Lab Sample ID: 440-111423-D-1-A MS**  
**Matrix: Water**  
**Analysis Batch: 259347**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 259021**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
C10-C28	ND	F2	1.01	0.702		mg/L		70	40 - 120
<b>Surrogate</b>		<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>					
n-Octacosane		73		45 - 120					

**Lab Sample ID: 440-111423-D-1-B MSD**  
**Matrix: Water**  
**Analysis Batch: 259347**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 259021**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C10-C28	ND	F2	1.01	0.443	J F2	mg/L		44	40 - 120	45	30

TestAmerica Irvine

# QC Sample Results

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

## Method: 8015B - Diesel Range Organics (DRO) (GC) (Continued)

**Lab Sample ID: 440-111423-D-1-B MSD**  
**Matrix: Water**  
**Analysis Batch: 259347**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 259021**

Surrogate	MSD %Recovery	MSD Qualifier	Limits
<i>n</i> -Octacosane	50		45 - 120

**Lab Sample ID: MB 440-259462/1-A**  
**Matrix: Solid**  
**Analysis Batch: 259351**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 259462**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C34	ND		5.0	2.5	mg/Kg		06/04/15 14:20	06/04/15 17:01	1
DRO (C9-C25)	ND		5.0	2.5	mg/Kg		06/04/15 14:20	06/04/15 17:01	1
RRO (C24-C40)	ND		5.0	2.5	mg/Kg		06/04/15 14:20	06/04/15 17:01	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>n</i> -Octacosane	85		40 - 140	06/04/15 14:20	06/04/15 17:01	1

**Lab Sample ID: LCS 440-259462/2-A**  
**Matrix: Solid**  
**Analysis Batch: 259351**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 259462**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
C10-C28	66.7	65.3		mg/Kg		98	45 - 115

Surrogate	LCS %Recovery	LCS Qualifier	Limits
<i>n</i> -Octacosane	94		40 - 140

## Method: 8081A - Organochlorine Pesticides (GC)

**Lab Sample ID: MB 440-260125/1-A**  
**Matrix: Solid**  
**Analysis Batch: 260286**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 260125**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.050	0.010	mg/Kg		06/08/15 16:38	06/09/15 18:07	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>Tetrachloro-m-xylene</i>	74		35 - 115	06/08/15 16:38	06/09/15 18:07	1
<i>DCB Decachlorobiphenyl (Surr)</i>	87		45 - 120	06/08/15 16:38	06/09/15 18:07	1

**Lab Sample ID: LCS 440-260125/2-A**  
**Matrix: Solid**  
**Analysis Batch: 260286**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 260125**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Chlordane (technical)	0.0333	0.0242	J	mg/Kg		72	60 - 140

Surrogate	LCS %Recovery	LCS Qualifier	Limits
<i>Tetrachloro-m-xylene</i>	76		35 - 115

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# QC Sample Results

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

## Method: 8081A - Organochlorine Pesticides (GC) (Continued)

**Lab Sample ID: LCS 440-260125/2-A**  
**Matrix: Solid**  
**Analysis Batch: 260286**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 260125**

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	81		45 - 120

**Lab Sample ID: LCSD 440-260125/3-A**  
**Matrix: Solid**  
**Analysis Batch: 260286**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 260125**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chlordane (technical)	0.0333	0.0235	J	mg/Kg		71	60 - 140	1	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Tetrachloro-m-xylene	73		35 - 115
DCB Decachlorobiphenyl (Surr)	79		45 - 120

## Method: 8310 - PAHs (HPLC)

**Lab Sample ID: MB 550-65002/1-A**  
**Matrix: Solid**  
**Analysis Batch: 65096**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 65002**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.20	0.0034	mg/Kg		06/03/15 17:12	06/04/15 19:34	1
Acenaphthylene	ND		0.30	0.015	mg/Kg		06/03/15 17:12	06/04/15 19:34	1
Anthracene	ND		0.020	0.0049	mg/Kg		06/03/15 17:12	06/04/15 19:34	1
Benzo[a]anthracene	ND		0.010	0.00046	mg/Kg		06/03/15 17:12	06/04/15 19:34	1
Benzo[a]pyrene	ND		0.010	0.00051	mg/Kg		06/03/15 17:12	06/04/15 19:34	1
Benzo[b]fluoranthene	ND		0.020	0.00066	mg/Kg		06/03/15 17:12	06/04/15 19:34	1
Benzo[g,h,i]perylene	ND		0.030	0.00080	mg/Kg		06/03/15 17:12	06/04/15 19:34	1
Benzo[k]fluoranthene	ND		0.010	0.00037	mg/Kg		06/03/15 17:12	06/04/15 19:34	1
Chrysene	ND		0.020	0.00041	mg/Kg		06/03/15 17:12	06/04/15 19:34	1
Dibenz(a,h)anthracene	ND		0.010	0.00066	mg/Kg		06/03/15 17:12	06/04/15 19:34	1
Fluoranthene	ND		0.030	0.00082	mg/Kg		06/03/15 17:12	06/04/15 19:34	1
Fluorene	ND		0.030	0.00064	mg/Kg		06/03/15 17:12	06/04/15 19:34	1
Indeno[1,2,3-cd]pyrene	ND		0.010	0.00049	mg/Kg		06/03/15 17:12	06/04/15 19:34	1
Naphthalene	ND		0.20	0.0047	mg/Kg		06/03/15 17:12	06/04/15 19:34	1
Phenanthrene	ND		0.030	0.00042	mg/Kg		06/03/15 17:12	06/04/15 19:34	1
Pyrene	ND		0.020	0.00064	mg/Kg		06/03/15 17:12	06/04/15 19:34	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
p-Terphenyl	63		10 - 150	06/03/15 17:12	06/04/15 19:34	1

**Lab Sample ID: LCS 550-65002/2-A**  
**Matrix: Solid**  
**Analysis Batch: 65096**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 65002**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	0.167	0.151	J	mg/Kg		91	17 - 150
Acenaphthylene	0.333	0.291	J	mg/Kg		87	36 - 137

TestAmerica Irvine

# QC Sample Results

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

## Method: 8310 - PAHs (HPLC) (Continued)

**Lab Sample ID: LCS 550-65002/2-A**  
**Matrix: Solid**  
**Analysis Batch: 65096**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 65002**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene	0.0167	0.0153	J	mg/Kg		92	25 - 150
Benzo[a]anthracene	0.0167	0.0150		mg/Kg		90	24 - 137
Benzo[a]pyrene	0.0167	0.0149		mg/Kg		89	35 - 139
Benzo[b]fluoranthene	0.0333	0.0297		mg/Kg		89	45 - 127
Benzo[g,h,i]perylene	0.0333	0.0282	J	mg/Kg		85	18 - 150
Benzo[k]fluoranthene	0.0167	0.0146		mg/Kg		88	26 - 144
Chrysene	0.0167	0.0156	J	mg/Kg		94	41 - 141
Dibenz(a,h)anthracene	0.0333	0.0290		mg/Kg		87	10 - 150
Fluoranthene	0.0333	0.0290	J	mg/Kg		87	31 - 132
Fluorene	0.0333	0.0305		mg/Kg		92	36 - 123
Indeno[1,2,3-cd]pyrene	0.0167	0.0153		mg/Kg		92	24 - 150
Naphthalene	0.167	0.135	J	mg/Kg		81	22 - 136
Phenanthrene	0.0167	0.0163	J	mg/Kg		98	43 - 131
Pyrene	0.0167	0.0165	J	mg/Kg		99	23 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
p-Terphenyl	63		10 - 150

**Lab Sample ID: LCSD 550-65002/3-A**  
**Matrix: Solid**  
**Analysis Batch: 65096**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 65002**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Acenaphthene	0.167	0.162	J	mg/Kg		97	17 - 150	7	40
Acenaphthylene	0.333	0.321		mg/Kg		96	36 - 137	10	40
Anthracene	0.0167	0.0165	J	mg/Kg		99	25 - 150	8	40
Benzo[a]anthracene	0.0167	0.0152		mg/Kg		91	24 - 137	2	40
Benzo[a]pyrene	0.0167	0.0166		mg/Kg		99	35 - 139	11	40
Benzo[b]fluoranthene	0.0333	0.0329		mg/Kg		99	45 - 127	10	40
Benzo[g,h,i]perylene	0.0333	0.0310		mg/Kg		93	18 - 150	9	40
Benzo[k]fluoranthene	0.0167	0.0162		mg/Kg		97	26 - 144	10	40
Chrysene	0.0167	0.0173	J	mg/Kg		104	41 - 141	10	40
Dibenz(a,h)anthracene	0.0333	0.0316		mg/Kg		95	10 - 150	9	40
Fluoranthene	0.0333	0.0317		mg/Kg		95	31 - 132	9	40
Fluorene	0.0333	0.0303		mg/Kg		91	36 - 123	1	40
Indeno[1,2,3-cd]pyrene	0.0167	0.0166		mg/Kg		100	24 - 150	8	40
Naphthalene	0.167	0.138	J	mg/Kg		83	22 - 136	2	40
Phenanthrene	0.0167	0.0166	J	mg/Kg		99	43 - 131	2	40
Pyrene	0.0167	0.0177	J	mg/Kg		106	23 - 135	7	40

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
p-Terphenyl	67		10 - 150

# QC Sample Results

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

## Method: 8310 - PAHs (HPLC) (Continued)

**Lab Sample ID: 440-111637-5 MS**  
**Matrix: Solid**  
**Analysis Batch: 65096**

**Client Sample ID: DOD-02**  
**Prep Type: Total/NA**  
**Prep Batch: 65002**

Analyte	Sample		Spike Added	MS MS		Unit	D	%Rec	%Rec. Limits
	Result	Qualifier		Result	Qualifier				
Acenaphthene	ND	F1	0.249	ND	F1	mg/Kg		0	10 - 150
Acenaphthylene	ND	F1	0.499	ND	F1	mg/Kg		0	10 - 135
Anthracene	0.021	J F2 F1 p	0.0249	0.0216	J F1	mg/Kg		2	10 - 150
Benzo[a]anthracene	ND	F1	0.0249	0.374	F1	mg/Kg		1500	10 - 147
Benzo[a]pyrene	0.028	F1 F2	0.0249	0.0699	F1	mg/Kg		167	10 - 150
Benzo[b]fluoranthene	0.13	F1 p	0.0499	0.118	F1	mg/Kg		-14	10 - 136
Benzo[g,h,i]perylene	0.073	F1	0.0499	0.0711	F1	mg/Kg		-4	10 - 150
Benzo[k]fluoranthene	ND	F1	0.0249	0.0274		mg/Kg		110	10 - 139
Chrysene	0.082	F1 F2	0.0249	0.0410	F1	mg/Kg		-162	10 - 150
Dibenz(a,h)anthracene	ND	F2	0.0499	0.0218		mg/Kg		44	10 - 150
Fluoranthene	ND	F1	0.0499	ND	F1	mg/Kg		0	10 - 150
Fluorene	ND	F1	0.0499	ND	F1	mg/Kg		0	10 - 150
Indeno[1,2,3-cd]pyrene	ND	F1	0.0249	ND	F1	mg/Kg		0	10 - 150
Naphthalene	ND		0.249	0.0366	J	mg/Kg		15	10 - 150
Phenanthrene	0.044	J F2 F1 p	0.0249	0.0656		mg/Kg		88	10 - 150
Pyrene	0.46	E	0.0249	0.276	4	mg/Kg		-731	10 - 150
<b>MS MS</b>									
<b>Surrogate</b>	<b>%Recovery</b>		<b>Qualifier</b>	<b>Limits</b>					
<i>p-Terphenyl</i>	10			10 - 150					

**Lab Sample ID: 440-111637-5 MSD**  
**Matrix: Solid**  
**Analysis Batch: 65096**

**Client Sample ID: DOD-02**  
**Prep Type: Total/NA**  
**Prep Batch: 65002**

Analyte	Sample		Spike Added	MSD MSD		Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
	Result	Qualifier		Result	Qualifier						
Acenaphthene	ND	F1	0.249	ND	F1	mg/Kg		0	10 - 150	NC	40
Acenaphthylene	ND	F1	0.497	0.0610	J	mg/Kg		12	10 - 135	NC	35
Anthracene	0.021	J F2 F1 p	0.0249	0.0213	J F1	mg/Kg		0.2	10 - 150	2	40
Benzo[a]anthracene	ND	F1	0.0249	ND	F1	mg/Kg		0	10 - 147	NC	40
Benzo[a]pyrene	0.028	F1 F2	0.0249	0.0816	F1	mg/Kg		214	10 - 150	28	40
Benzo[b]fluoranthene	0.13	F1 p	0.0497	0.112	F1	mg/Kg		-26	10 - 136	5	40
Benzo[g,h,i]perylene	0.073	F1	0.0497	0.0769	F1	mg/Kg		8	10 - 150	8	40
Benzo[k]fluoranthene	ND	F1	0.0249	0.0351	F1	mg/Kg		141	10 - 139	25	40
Chrysene	0.082	F1 F2	0.0249	0.116	F2	mg/Kg		139	10 - 150	95	40
Dibenz(a,h)anthracene	ND	F2	0.0497	0.00702	J F2	mg/Kg		14	10 - 150	103	40
Fluoranthene	ND	F1	0.0497	ND	F1	mg/Kg		0	10 - 150	NC	40
Fluorene	ND	F1	0.0497	ND	F1	mg/Kg		0	10 - 150	NC	40
Indeno[1,2,3-cd]pyrene	ND	F1	0.0249	ND	F1	mg/Kg		0	10 - 150	NC	40
Naphthalene	ND		0.249	0.0480	J	mg/Kg		19	10 - 150	27	40
Phenanthrene	0.044	J F2 F1 p	0.0249	0.0435	J F1 F2	mg/Kg		-0.5	10 - 150	41	40
Pyrene	0.46	E	0.0249	0.259	4	mg/Kg		-801	10 - 150	6	40
<b>MSD MSD</b>											
<b>Surrogate</b>	<b>%Recovery</b>		<b>Qualifier</b>	<b>Limits</b>							
<i>p-Terphenyl</i>	15			10 - 150							



# QC Sample Results

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

## Method: 8310 - PAHs (HPLC) (Continued)

**Lab Sample ID: MB 550-65108/1-A**  
**Matrix: Water**  
**Analysis Batch: 65216**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 65108**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		1.0	0.31	ug/L		06/04/15 17:15	06/05/15 20:09	1
Acenaphthylene	ND		1.0	0.69	ug/L		06/04/15 17:15	06/05/15 20:09	1
Anthracene	ND		0.050	0.034	ug/L		06/04/15 17:15	06/05/15 20:09	1
Benzo[a]anthracene	ND		0.050	0.031	ug/L		06/04/15 17:15	06/05/15 20:09	1
Benzo[a]pyrene	ND		0.050	0.017	ug/L		06/04/15 17:15	06/05/15 20:09	1
Benzo[b]fluoranthene	ND		0.10	0.027	ug/L		06/04/15 17:15	06/05/15 20:09	1
Benzo[g,h,i]perylene	ND		0.10	0.030	ug/L		06/04/15 17:15	06/05/15 20:09	1
Benzo[k]fluoranthene	ND		0.050	0.020	ug/L		06/04/15 17:15	06/05/15 20:09	1
Chrysene	ND		0.10	0.016	ug/L		06/04/15 17:15	06/05/15 20:09	1
Dibenz(a,h)anthracene	ND		0.10	0.042	ug/L		06/04/15 17:15	06/05/15 20:09	1
Fluoranthene	ND		0.10	0.083	ug/L		06/04/15 17:15	06/05/15 20:09	1
Fluorene	ND		0.10	0.092	ug/L		06/04/15 17:15	06/05/15 20:09	1
Indeno[1,2,3-cd]pyrene	ND		0.10	0.025	ug/L		06/04/15 17:15	06/05/15 20:09	1
Naphthalene	ND		0.50	0.47	ug/L		06/04/15 17:15	06/05/15 20:09	1
Phenanthrene	ND		0.10	0.099	ug/L		06/04/15 17:15	06/05/15 20:09	1
Pyrene	ND		0.10	0.047	ug/L		06/04/15 17:15	06/05/15 20:09	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
p-Terphenyl	60		27 - 101				06/04/15 17:15	06/05/15 20:09	1

**Lab Sample ID: LCS 550-65108/2-A**  
**Matrix: Water**  
**Analysis Batch: 65216**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 65108**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	2.50	2.41		ug/L		96	25 - 149
Acenaphthylene	5.00	4.09		ug/L		82	58 - 112
Anthracene	0.250	0.211		ug/L		84	10 - 150
Benzo[a]anthracene	0.250	0.218		ug/L		87	43 - 141
Benzo[a]pyrene	0.250	0.210		ug/L		84	37 - 144
Benzo[b]fluoranthene	0.500	0.425		ug/L		85	57 - 129
Benzo[g,h,i]perylene	0.500	0.373		ug/L		75	15 - 150
Benzo[k]fluoranthene	0.250	0.209		ug/L		84	54 - 130
Chrysene	0.250	0.224		ug/L		89	52 - 142
Dibenz(a,h)anthracene	0.500	0.329		ug/L		66	15 - 121
Fluoranthene	0.500	0.412		ug/L		82	50 - 127
Fluorene	0.500	0.289		ug/L		58	46 - 123
Indeno[1,2,3-cd]pyrene	0.250	0.223		ug/L		89	24 - 150
Naphthalene	2.50	1.57		ug/L		63	35 - 101
Phenanthrene	0.250	0.191		ug/L		76	58 - 124
Pyrene	0.250	0.225		ug/L		90	11 - 150
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
p-Terphenyl	63		27 - 101				
p-Terphenyl	63		27 - 101				

# QC Sample Results

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

## Method: 8310 - PAHs (HPLC) (Continued)

**Lab Sample ID: LCSD 550-65108/3-A**  
**Matrix: Water**  
**Analysis Batch: 65216**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 65108**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acenaphthene	2.50	2.07		ug/L		83	25 - 149	15	35
Acenaphthylene	5.00	4.66		ug/L		93	58 - 112	13	35
Anthracene	0.250	0.232		ug/L		93	10 - 150	9	35
Benzo[a]anthracene	0.250	0.230		ug/L		92	43 - 141	5	35
Benzo[a]pyrene	0.250	0.224		ug/L		89	37 - 144	6	35
Benzo[b]fluoranthene	0.500	0.451		ug/L		90	57 - 129	6	35
Benzo[g,h,i]perylene	0.500	0.387		ug/L		77	15 - 150	4	35
Benzo[k]fluoranthene	0.250	0.222		ug/L		89	54 - 130	6	35
Chrysene	0.250	0.240		ug/L		96	52 - 142	7	35
Dibenz(a,h)anthracene	0.500	0.327		ug/L		65	15 - 121	1	35
Fluoranthene	0.500	0.436		ug/L		87	50 - 127	6	35
Fluorene	0.500	0.429	*	ug/L		86	46 - 123	39	35
Indeno[1,2,3-cd]pyrene	0.250	0.228		ug/L		91	24 - 150	3	35
Naphthalene	2.50	1.96		ug/L		79	35 - 101	22	35
Phenanthrene	0.250	0.231		ug/L		92	58 - 124	19	28
Pyrene	0.250	0.235		ug/L		94	11 - 150	4	35

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
p-Terphenyl	61		27 - 101

## Method: 6010B - Metals (ICP)

**Lab Sample ID: MB 580-191659/20-A**  
**Matrix: Solid**  
**Analysis Batch: 191894**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 191659**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.140	J	1.5	0.096	mg/Kg		06/09/15 16:18	06/11/15 11:28	1

**Lab Sample ID: LCS 580-191659/21-A**  
**Matrix: Solid**  
**Analysis Batch: 191894**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 191659**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	50.0	44.7		mg/Kg		89	80 - 120

**Lab Sample ID: LCSD 580-191659/22-A**  
**Matrix: Solid**  
**Analysis Batch: 191894**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 191659**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	50.0	45.4		mg/Kg		91	80 - 120	2	20

# QC Sample Results

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

## Method: 6010B - Metals (ICP) (Continued)

**Lab Sample ID: 440-111718-C-1-A MS**  
**Matrix: Solid**  
**Analysis Batch: 191894**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 191659**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Lead	3.1	F1 B	9.70	10.6	F1	mg/Kg		78	80 - 120

**Lab Sample ID: 440-111718-D-1-A MSD**  
**Matrix: Solid**  
**Analysis Batch: 191894**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 191659**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Lead	3.1	F1 B	9.58	11.6		mg/Kg		88	80 - 120	8	20

**Lab Sample ID: MB 440-259034/1-A ^5**  
**Matrix: Solid**  
**Analysis Batch: 259623**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 259034**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		3.0	1.5	mg/Kg		06/03/15 08:34	06/05/15 06:35	5
Barium	ND		1.5	0.74	mg/Kg		06/03/15 08:34	06/05/15 06:35	5
Cadmium	ND		0.49	0.25	mg/Kg		06/03/15 08:34	06/05/15 06:35	5
Chromium	ND		0.99	0.49	mg/Kg		06/03/15 08:34	06/05/15 06:35	5
Lead	ND		2.0	0.99	mg/Kg		06/03/15 08:34	06/05/15 06:35	5
Selenium	ND		3.0	1.5	mg/Kg		06/03/15 08:34	06/05/15 06:35	5
Silver	ND		1.5	0.74	mg/Kg		06/03/15 08:34	06/05/15 06:35	5

**Lab Sample ID: LCS 440-259034/2-A ^5**  
**Matrix: Solid**  
**Analysis Batch: 259623**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 259034**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Arsenic	49.8	48.9		mg/Kg		98	80 - 120
Barium	49.8	51.6		mg/Kg		104	80 - 120
Cadmium	49.8	50.4		mg/Kg		101	80 - 120
Chromium	49.8	51.0		mg/Kg		103	80 - 120
Lead	49.8	51.1		mg/Kg		103	80 - 120
Selenium	49.8	44.8		mg/Kg		90	80 - 120
Silver	24.9	24.8		mg/Kg		100	80 - 120

**Lab Sample ID: 440-111517-A-1-B MS ^5**  
**Matrix: Solid**  
**Analysis Batch: 259623**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 259034**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Arsenic	1.7	J	49.3	52.0		mg/Kg		102	75 - 125
Barium	39		49.3	91.8		mg/Kg		108	75 - 125
Cadmium	ND		49.3	48.8		mg/Kg		99	75 - 125
Chromium	6.7		49.3	54.1		mg/Kg		96	75 - 125
Lead	7.0		49.3	58.3		mg/Kg		104	75 - 125
Selenium	ND		49.3	43.3		mg/Kg		88	75 - 125
Silver	ND		24.6	24.5		mg/Kg		99	75 - 125

TestAmerica Irvine

# QC Sample Results

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

## Method: 6010B - Metals (ICP) (Continued)

**Lab Sample ID: 440-111517-A-1-C MSD ^5**

**Matrix: Solid**  
**Analysis Batch: 259623**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**  
**Prep Batch: 259034**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier							
Arsenic	1.7	J	49.5	49.6		mg/Kg		97	75 - 125	5	20	
Barium	39		49.5	90.2		mg/Kg		104	75 - 125	2	20	
Cadmium	ND		49.5	47.2		mg/Kg		95	75 - 125	4	20	
Chromium	6.7		49.5	52.6		mg/Kg		93	75 - 125	3	20	
Lead	7.0		49.5	55.7		mg/Kg		98	75 - 125	4	20	
Selenium	ND		49.5	42.2		mg/Kg		85	75 - 125	3	20	
Silver	ND		24.8	23.7		mg/Kg		96	75 - 125	3	20	

**Lab Sample ID: MB 440-259130/1-A**

**Matrix: Water**  
**Analysis Batch: 259237**

**Client Sample ID: Method Blank**

**Prep Type: Total Recoverable**  
**Prep Batch: 259130**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	0.00719	J	0.010	0.0050	mg/L		06/03/15 11:54	06/03/15 18:24	1
Barium	ND		0.010	0.0050	mg/L		06/03/15 11:54	06/03/15 18:24	1
Cadmium	ND		0.0050	0.0020	mg/L		06/03/15 11:54	06/03/15 18:24	1
Chromium	ND		0.0050	0.0025	mg/L		06/03/15 11:54	06/03/15 18:24	1
Lead	0.00365	J	0.0050	0.0025	mg/L		06/03/15 11:54	06/03/15 18:24	1
Selenium	ND		0.010	0.0061	mg/L		06/03/15 11:54	06/03/15 18:24	1
Silver	ND		0.010	0.0050	mg/L		06/03/15 11:54	06/03/15 18:24	1

**Lab Sample ID: LCS 440-259130/2-A**

**Matrix: Water**  
**Analysis Batch: 259237**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total Recoverable**  
**Prep Batch: 259130**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.	Limits
Barium	1.00	1.02		mg/L		102	80 - 120	
Cadmium	1.00	1.06		mg/L		106	80 - 120	
Chromium	1.00	1.05		mg/L		105	80 - 120	
Lead	1.00	1.03		mg/L		103	80 - 120	
Selenium	1.00	0.986		mg/L		99	80 - 120	
Silver	0.500	0.487		mg/L		97	80 - 120	

**Lab Sample ID: 440-110695-I-1-F MS**

**Matrix: Water**  
**Analysis Batch: 259237**

**Client Sample ID: Matrix Spike**

**Prep Type: Total Recoverable**  
**Prep Batch: 259130**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.	Limits
	Result	Qualifier	Added	Result	Qualifier					
Arsenic	0.035	B	1.00	0.966		mg/L		93	75 - 125	
Barium	0.17		1.00	1.17		mg/L		99	75 - 125	
Cadmium	ND		1.00	0.999		mg/L		100	75 - 125	
Chromium	0.030		1.00	1.07		mg/L		104	75 - 125	
Lead	0.0056	B	1.00	0.985		mg/L		98	75 - 125	
Selenium	ND		1.00	0.983		mg/L		98	75 - 125	
Silver	ND		0.500	0.515		mg/L		103	75 - 125	

TestAmerica Irvine

# QC Sample Results

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

## Method: 6010B - Metals (ICP) (Continued)

**Lab Sample ID: 440-110695-I-1-G MSD**  
**Matrix: Water**  
**Analysis Batch: 259237**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total Recoverable**  
**Prep Batch: 259130**

Analyte	Sample	Sample	Spike	MSD		Unit	D	%Rec	%Rec.		RPD	Limit
	Result	Qualifier		Result	Qualifier				Limits	RPD		
Arsenic	0.035	B	1.00	0.972		mg/L		94	75 - 125	1	20	
Barium	0.17		1.00	1.14		mg/L		97	75 - 125	2	20	
Cadmium	ND		1.00	0.977		mg/L		98	75 - 125	2	20	
Chromium	0.030		1.00	1.05		mg/L		102	75 - 125	2	20	
Lead	0.0056	B	1.00	0.983		mg/L		98	75 - 125	0	20	
Selenium	ND		1.00	0.978		mg/L		98	75 - 125	1	20	
Silver	ND		0.500	0.504		mg/L		101	75 - 125	2	20	

**Lab Sample ID: MB 440-258944/1-B**  
**Matrix: Solid**  
**Analysis Batch: 259459**

**Client Sample ID: Method Blank**  
**Prep Type: TCLP**  
**Prep Batch: 259266**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	ND		0.20	0.070	mg/L		06/04/15 00:30	06/04/15 12:40	1
Barium	ND		0.20	0.060	mg/L		06/04/15 00:30	06/04/15 12:40	1
Cadmium	ND		0.10	0.020	mg/L		06/04/15 00:30	06/04/15 12:40	1
Chromium	ND		0.10	0.020	mg/L		06/04/15 00:30	06/04/15 12:40	1
Lead	ND		0.10	0.040	mg/L		06/04/15 00:30	06/04/15 12:40	1
Selenium	ND		0.10	0.080	mg/L		06/04/15 00:30	06/04/15 12:40	1
Silver	ND		0.20	0.060	mg/L		06/04/15 00:30	06/04/15 12:40	1

**Lab Sample ID: LCS 440-258944/2-B**  
**Matrix: Solid**  
**Analysis Batch: 259459**

**Client Sample ID: Lab Control Sample**  
**Prep Type: TCLP**  
**Prep Batch: 259266**

Analyte	Spike	LCS		Unit	D	%Rec	%Rec.	
		Result	Qualifier				Limits	RPD
Arsenic	2.00	2.29		mg/L		115	80 - 120	
Barium	2.00	2.06		mg/L		103	80 - 120	
Cadmium	2.00	2.08		mg/L		104	80 - 120	
Chromium	2.00	2.05		mg/L		103	80 - 120	
Lead	2.00	2.08		mg/L		104	80 - 120	
Selenium	2.00	1.89		mg/L		95	80 - 120	
Silver	1.00	0.963		mg/L		96	80 - 120	

**Lab Sample ID: 440-110820-A-1-G MS**  
**Matrix: Solid**  
**Analysis Batch: 259459**

**Client Sample ID: Matrix Spike**  
**Prep Type: TCLP**  
**Prep Batch: 259266**

Analyte	Sample	Sample	Spike	MS		Unit	D	%Rec	%Rec.	
	Result	Qualifier		Result	Qualifier				Limits	RPD
Arsenic	ND	^	2.00	2.37		mg/L		119	75 - 125	
Barium	0.082	J	2.00	2.10		mg/L		101	75 - 125	
Cadmium	ND		2.00	2.03		mg/L		102	75 - 125	
Chromium	0.073	J	2.00	2.15		mg/L		104	75 - 125	
Lead	ND		2.00	2.11		mg/L		105	75 - 125	
Selenium	ND		2.00	1.90		mg/L		95	75 - 125	
Silver	ND		1.00	0.956		mg/L		96	75 - 125	

# QC Sample Results

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

## Method: 7470A - Mercury (CVAA)

**Lab Sample ID: MB 440-259220/1-A**  
**Matrix: Water**  
**Analysis Batch: 259456**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 259220**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00010	mg/L		06/03/15 17:36	06/04/15 13:32	1

**Lab Sample ID: LCS 440-259220/2-A**  
**Matrix: Water**  
**Analysis Batch: 259456**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 259220**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Mercury	0.00800	0.00823		mg/L		103	80 - 120

**Lab Sample ID: 440-111756-E-1-C MS**  
**Matrix: Water**  
**Analysis Batch: 259456**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 259220**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Mercury	ND		0.00800	0.00798		mg/L		100	70 - 130

**Lab Sample ID: 440-111756-E-1-D MSD**  
**Matrix: Water**  
**Analysis Batch: 259456**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 259220**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Mercury	ND		0.00800	0.00795		mg/L		99	70 - 130	0	20

**Lab Sample ID: MB 440-258944/1-D**  
**Matrix: Solid**  
**Analysis Batch: 260248**

**Client Sample ID: Method Blank**  
**Prep Type: TCLP**  
**Prep Batch: 260092**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.0010	mg/L		06/08/15 13:56	06/08/15 18:52	1

**Lab Sample ID: LCS 440-258944/2-D**  
**Matrix: Solid**  
**Analysis Batch: 260248**

**Client Sample ID: Lab Control Sample**  
**Prep Type: TCLP**  
**Prep Batch: 260092**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Mercury	0.0800	0.0899		mg/L		112	80 - 120

**Lab Sample ID: 440-111637-5 MS**  
**Matrix: Solid**  
**Analysis Batch: 260248**

**Client Sample ID: DOD-02**  
**Prep Type: TCLP**  
**Prep Batch: 260092**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Mercury	ND		0.0800	0.0936		mg/L		117	70 - 130

**Lab Sample ID: 440-111637-5 MSD**  
**Matrix: Solid**  
**Analysis Batch: 260248**

**Client Sample ID: DOD-02**  
**Prep Type: TCLP**  
**Prep Batch: 260092**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Mercury	ND		0.0800	0.0941		mg/L		118	70 - 130	1	20

TestAmerica Irvine



# QC Sample Results

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

## Method: 7471A - Mercury (CVAA)

**Lab Sample ID: MB 440-259402/1-A**  
**Matrix: Solid**  
**Analysis Batch: 259670**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 259402**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.020	0.012	mg/Kg		06/04/15 16:05	06/04/15 20:08	1

**Lab Sample ID: LCS 440-259402/2-A**  
**Matrix: Solid**  
**Analysis Batch: 259670**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 259402**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.800	0.856		mg/Kg		107	80 - 120

**Lab Sample ID: 440-111915-B-1-B MS**  
**Matrix: Solid**  
**Analysis Batch: 259670**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 259402**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.27		0.784	1.04		mg/Kg		99	70 - 130

**Lab Sample ID: 440-111915-B-1-C MSD**  
**Matrix: Solid**  
**Analysis Batch: 259670**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 259402**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.27		0.784	1.19		mg/Kg		117	70 - 130	13	20

## Method: 1010 - Ignitability, Pensky-Martens Closed-Cup Method

**Lab Sample ID: LCS 440-260418/1**  
**Matrix: Water**  
**Analysis Batch: 260418**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Flashpoint	127	123.8		Degrees F		97	92.6 - 107.4

## Method: 9045C - pH

**Lab Sample ID: 440-111915-A-1-B DU**  
**Matrix: Solid**  
**Analysis Batch: 259897**

**Client Sample ID: Duplicate**  
**Prep Type: Soluble**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	8.14		8.150		SU		0.1	2

# QC Sample Results

Client: AECOM, Inc.  
 Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
 SDG: 60340502

## Method: EPA 150.1 - General Chemistry Parameters

Lab Sample ID: 15E0040-DUP1  
 Matrix: Water - NonPotable  
 Analysis Batch: 15E0040

Client Sample ID: DOD-01  
 Prep Type: Total  
 Prep Batch: 15E0040\_P

Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD	Limit
pH - measured in lab not in field	8.74		8.74		pH Units		0	20

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# QC Association Summary

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

## GC/MS VOA

### Analysis Batch: 259289

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-111637-1	DOD-01	Total/NA	Water	8260B	
440-111689-C-3 MS	Matrix Spike	Total/NA	Water	8260B	
440-111689-C-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	
LCS 440-259289/4	Lab Control Sample	Total/NA	Water	8260B	
MB 440-259289/3	Method Blank	Total/NA	Water	8260B	

### Analysis Batch: 259626

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-111637-5	DOD-02	Total/NA	Solid	8260B/5030B	
440-111667-A-1 MS	Matrix Spike	Total/NA	Solid	8260B/5030B	
440-111667-A-1 MSD	Matrix Spike Duplicate	Total/NA	Solid	8260B/5030B	
LCS 440-259626/5	Lab Control Sample	Total/NA	Solid	8260B/5030B	
MB 440-259626/4	Method Blank	Total/NA	Solid	8260B/5030B	

## GC VOA

### Analysis Batch: 259026

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-111354-B-19 MS	Matrix Spike	Total/NA	Water	8015B	
440-111354-B-19 MSD	Matrix Spike Duplicate	Total/NA	Water	8015B	
440-111637-1	DOD-01	Total/NA	Water	8015B	
LCS 440-259026/3	Lab Control Sample	Total/NA	Water	8015B	
MB 440-259026/4	Method Blank	Total/NA	Water	8015B	

### Analysis Batch: 260691

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-111637-5	DOD-02	Total/NA	Solid	8015B/5030B	260819
LCS 440-260691/3	Lab Control Sample	Total/NA	Solid	8015B/5030B	
LCS 440-260691/4	Lab Control Sample Dup	Total/NA	Solid	8015B/5030B	
MB 440-260691/26	Method Blank	Total/NA	Solid	8015B/5030B	

### Prep Batch: 260819

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-111637-5	DOD-02	Total/NA	Solid	5030B	

## GC Semi VOA

### Prep Batch: 259021

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-111423-D-1-A MS	Matrix Spike	Total/NA	Water	3510C	
440-111423-D-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	3510C	
440-111637-1	DOD-01	Total/NA	Water	3510C	
LCS 440-259021/2-A	Lab Control Sample	Total/NA	Water	3510C	
MB 440-259021/1-A	Method Blank	Total/NA	Water	3510C	

### Analysis Batch: 259347

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-111423-D-1-A MS	Matrix Spike	Total/NA	Water	8015B	259021
440-111423-D-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	8015B	259021
LCS 440-259021/2-A	Lab Control Sample	Total/NA	Water	8015B	259021

TestAmerica Irvine

# QC Association Summary

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

## GC Semi VOA (Continued)

### Analysis Batch: 259347 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 440-259021/1-A	Method Blank	Total/NA	Water	8015B	259021

### Analysis Batch: 259349

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-111637-1	DOD-01	Total/NA	Water	8015B	259021

### Analysis Batch: 259351

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 440-259462/2-A	Lab Control Sample	Total/NA	Solid	8015B	259462
MB 440-259462/1-A	Method Blank	Total/NA	Solid	8015B	259462

### Prep Batch: 259462

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-111637-5	DOD-02	Total/NA	Solid	3546	
LCS 440-259462/2-A	Lab Control Sample	Total/NA	Solid	3546	
MB 440-259462/1-A	Method Blank	Total/NA	Solid	3546	

### Analysis Batch: 259610

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-111637-5	DOD-02	Total/NA	Solid	8015B	259462

### Prep Batch: 260125

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-111637-2	DOD-03	Total/NA	Solid	3546	
440-111637-3	DOD-04	Total/NA	Solid	3546	
440-111637-4	DOD-05	Total/NA	Solid	3546	
LCS 440-260125/2-A	Lab Control Sample	Total/NA	Solid	3546	
LCSD 440-260125/3-A	Lab Control Sample Dup	Total/NA	Solid	3546	
MB 440-260125/1-A	Method Blank	Total/NA	Solid	3546	

### Analysis Batch: 260286

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-111637-2	DOD-03	Total/NA	Solid	8081A	260125
440-111637-3	DOD-04	Total/NA	Solid	8081A	260125
LCS 440-260125/2-A	Lab Control Sample	Total/NA	Solid	8081A	260125
LCSD 440-260125/3-A	Lab Control Sample Dup	Total/NA	Solid	8081A	260125
MB 440-260125/1-A	Method Blank	Total/NA	Solid	8081A	260125

### Analysis Batch: 260594

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-111637-4	DOD-05	Total/NA	Solid	8081A	260125

## HPLC/IC

### Prep Batch: 65002

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-111637-5	DOD-02	Total/NA	Solid	3545	
440-111637-5 MS	DOD-02	Total/NA	Solid	3545	
440-111637-5 MSD	DOD-02	Total/NA	Solid	3545	
LCS 550-65002/2-A	Lab Control Sample	Total/NA	Solid	3545	

TestAmerica Irvine

# QC Association Summary

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

## HPLC/IC (Continued)

### Prep Batch: 65002 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 550-65002/3-A	Lab Control Sample Dup	Total/NA	Solid	3545	
MB 550-65002/1-A	Method Blank	Total/NA	Solid	3545	

### Analysis Batch: 65096

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-111637-5	DOD-02	Total/NA	Solid	8310	65002
440-111637-5 MS	DOD-02	Total/NA	Solid	8310	65002
440-111637-5 MSD	DOD-02	Total/NA	Solid	8310	65002
LCS 550-65002/2-A	Lab Control Sample	Total/NA	Solid	8310	65002
LCSD 550-65002/3-A	Lab Control Sample Dup	Total/NA	Solid	8310	65002
MB 550-65002/1-A	Method Blank	Total/NA	Solid	8310	65002

### Prep Batch: 65108

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-111637-1	DOD-01	Total/NA	Water	3510C	
LCS 550-65108/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 550-65108/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
MB 550-65108/1-A	Method Blank	Total/NA	Water	3510C	

### Analysis Batch: 65216

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-111637-1	DOD-01	Total/NA	Water	8310	65108
LCS 550-65108/2-A	Lab Control Sample	Total/NA	Water	8310	65108
LCSD 550-65108/3-A	Lab Control Sample Dup	Total/NA	Water	8310	65108
MB 550-65108/1-A	Method Blank	Total/NA	Water	8310	65108

## Metals

### Prep Batch: 191659

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-111637-2	DOD-03	Total/NA	Solid	3050B	
440-111637-3	DOD-04	Total/NA	Solid	3050B	
440-111637-4	DOD-05	Total/NA	Solid	3050B	
440-111718-C-1-A MS	Matrix Spike	Total/NA	Solid	3050B	
440-111718-D-1-A MSD	Matrix Spike Duplicate	Total/NA	Solid	3050B	
LCS 580-191659/21-A	Lab Control Sample	Total/NA	Solid	3050B	
LCSD 580-191659/22-A	Lab Control Sample Dup	Total/NA	Solid	3050B	
MB 580-191659/20-A	Method Blank	Total/NA	Solid	3050B	

### Analysis Batch: 191894

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-111637-2	DOD-03	Total/NA	Solid	6010B	191659
440-111637-3	DOD-04	Total/NA	Solid	6010B	191659
440-111637-4	DOD-05	Total/NA	Solid	6010B	191659
440-111718-C-1-A MS	Matrix Spike	Total/NA	Solid	6010B	191659
440-111718-D-1-A MSD	Matrix Spike Duplicate	Total/NA	Solid	6010B	191659
LCS 580-191659/21-A	Lab Control Sample	Total/NA	Solid	6010B	191659
LCSD 580-191659/22-A	Lab Control Sample Dup	Total/NA	Solid	6010B	191659
MB 580-191659/20-A	Method Blank	Total/NA	Solid	6010B	191659

TestAmerica Irvine

# QC Association Summary

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

## Metals (Continued)

### Leach Batch: 258944

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-110820-A-1-G MS	Matrix Spike	TCLP	Solid	1311	
440-111637-2	DOD-03	TCLP	Solid	1311	
440-111637-3	DOD-04	TCLP	Solid	1311	
440-111637-4	DOD-05	TCLP	Solid	1311	
440-111637-5	DOD-02	TCLP	Solid	1311	
440-111637-5 MS	DOD-02	TCLP	Solid	1311	
440-111637-5 MSD	DOD-02	TCLP	Solid	1311	
LCS 440-258944/2-B	Lab Control Sample	TCLP	Solid	1311	
LCS 440-258944/2-D	Lab Control Sample	TCLP	Solid	1311	
MB 440-258944/1-B	Method Blank	TCLP	Solid	1311	
MB 440-258944/1-D	Method Blank	TCLP	Solid	1311	

### Prep Batch: 259034

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-111517-A-1-B MS ^5	Matrix Spike	Total/NA	Solid	3050B	
440-111517-A-1-C MSD ^5	Matrix Spike Duplicate	Total/NA	Solid	3050B	
440-111637-5	DOD-02	Total/NA	Solid	3050B	
LCS 440-259034/2-A ^5	Lab Control Sample	Total/NA	Solid	3050B	
MB 440-259034/1-A ^5	Method Blank	Total/NA	Solid	3050B	

### Prep Batch: 259130

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-110695-I-1-F MS	Matrix Spike	Total Recoverable	Water	3005A	
440-110695-I-1-G MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	
440-111637-1	DOD-01	Total Recoverable	Water	3005A	
LCS 440-259130/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 440-259130/1-A	Method Blank	Total Recoverable	Water	3005A	

### Prep Batch: 259220

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-111637-1	DOD-01	Total/NA	Water	7470A	
440-111756-E-1-C MS	Matrix Spike	Total/NA	Water	7470A	
440-111756-E-1-D MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	
LCS 440-259220/2-A	Lab Control Sample	Total/NA	Water	7470A	
MB 440-259220/1-A	Method Blank	Total/NA	Water	7470A	

### Analysis Batch: 259237

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-110695-I-1-F MS	Matrix Spike	Total Recoverable	Water	6010B	259130
440-110695-I-1-G MSD	Matrix Spike Duplicate	Total Recoverable	Water	6010B	259130
LCS 440-259130/2-A	Lab Control Sample	Total Recoverable	Water	6010B	259130
MB 440-259130/1-A	Method Blank	Total Recoverable	Water	6010B	259130

### Prep Batch: 259266

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-110820-A-1-G MS	Matrix Spike	TCLP	Solid	3010A	258944
440-111637-2	DOD-03	TCLP	Solid	3010A	258944
440-111637-3	DOD-04	TCLP	Solid	3010A	258944
440-111637-4	DOD-05	TCLP	Solid	3010A	258944
440-111637-5	DOD-02	TCLP	Solid	3010A	258944
LCS 440-258944/2-B	Lab Control Sample	TCLP	Solid	3010A	258944

TestAmerica Irvine



# QC Association Summary

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

## Metals (Continued)

### Prep Batch: 259266 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 440-258944/1-B	Method Blank	TCLP	Solid	3010A	258944

### Analysis Batch: 259335

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-111637-1	DOD-01	Total Recoverable	Water	6010B	259130

### Prep Batch: 259402

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-111637-5	DOD-02	Total/NA	Solid	7471A	
440-111915-B-1-B MS	Matrix Spike	Total/NA	Solid	7471A	
440-111915-B-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	7471A	
LCS 440-259402/2-A	Lab Control Sample	Total/NA	Solid	7471A	
MB 440-259402/1-A	Method Blank	Total/NA	Solid	7471A	

### Analysis Batch: 259456

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-111637-1	DOD-01	Total/NA	Water	7470A	259220
440-111756-E-1-C MS	Matrix Spike	Total/NA	Water	7470A	259220
440-111756-E-1-D MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	259220
LCS 440-259220/2-A	Lab Control Sample	Total/NA	Water	7470A	259220
MB 440-259220/1-A	Method Blank	Total/NA	Water	7470A	259220

### Analysis Batch: 259459

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-110820-A-1-G MS	Matrix Spike	TCLP	Solid	6010B	259266
440-111637-2	DOD-03	TCLP	Solid	6010B	259266
440-111637-3	DOD-04	TCLP	Solid	6010B	259266
440-111637-4	DOD-05	TCLP	Solid	6010B	259266
440-111637-5	DOD-02	TCLP	Solid	6010B	259266
LCS 440-258944/2-B	Lab Control Sample	TCLP	Solid	6010B	259266
MB 440-258944/1-B	Method Blank	TCLP	Solid	6010B	259266

### Analysis Batch: 259623

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-111517-A-1-B MS ^5	Matrix Spike	Total/NA	Solid	6010B	259034
440-111517-A-1-C MSD ^5	Matrix Spike Duplicate	Total/NA	Solid	6010B	259034
440-111637-5	DOD-02	Total/NA	Solid	6010B	259034
LCS 440-259034/2-A ^5	Lab Control Sample	Total/NA	Solid	6010B	259034
MB 440-259034/1-A ^5	Method Blank	Total/NA	Solid	6010B	259034

### Analysis Batch: 259670

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-111637-5	DOD-02	Total/NA	Solid	7471A	259402
440-111915-B-1-B MS	Matrix Spike	Total/NA	Solid	7471A	259402
440-111915-B-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	7471A	259402
LCS 440-259402/2-A	Lab Control Sample	Total/NA	Solid	7471A	259402
MB 440-259402/1-A	Method Blank	Total/NA	Solid	7471A	259402

### Prep Batch: 260092

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-111637-5	DOD-02	TCLP	Solid	7470A	258944

TestAmerica Irvine

# QC Association Summary

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

## Metals (Continued)

### Prep Batch: 260092 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-111637-5 MS	DOD-02	TCLP	Solid	7470A	258944
440-111637-5 MSD	DOD-02	TCLP	Solid	7470A	258944
LCS 440-258944/2-D	Lab Control Sample	TCLP	Solid	7470A	258944
MB 440-258944/1-D	Method Blank	TCLP	Solid	7470A	258944

### Analysis Batch: 260248

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-111637-5	DOD-02	TCLP	Solid	7470A	260092
440-111637-5 MS	DOD-02	TCLP	Solid	7470A	260092
440-111637-5 MSD	DOD-02	TCLP	Solid	7470A	260092
LCS 440-258944/2-D	Lab Control Sample	TCLP	Solid	7470A	260092
MB 440-258944/1-D	Method Blank	TCLP	Solid	7470A	260092

## General Chemistry

### Analysis Batch: 259874

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-111637-5	DOD-02	Total/NA	Solid	7.1.2	

### Leach Batch: 259896

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-111637-5	DOD-02	Soluble	Solid	DI Leach	
440-111915-A-1-B DU	Duplicate	Soluble	Solid	DI Leach	

### Analysis Batch: 259897

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-111637-5	DOD-02	Soluble	Solid	9045C	259896
440-111915-A-1-B DU	Duplicate	Soluble	Solid	9045C	259896

### Analysis Batch: 260418

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-111637-1	DOD-01	Total/NA	Water	1010	
LCS 440-260418/1	Lab Control Sample	Total/NA	Water	1010	

## WetChem

### Analysis Batch: 15E0040

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
15E0040-DUP1	DOD-01	Total	Water - NonPotable	EPA 150.1	15E0040_P
440-111637-1	DOD-01	Total	Water	EPA 150.1	15E0040_P

### Prep Batch: 15E0040\_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
15E0040-DUP1	DOD-01	Total	Water - NonPotable	Default Prep GenChem	
440-111637-1	DOD-01	Total	Water	Default Prep GenChem	

TestAmerica Irvine

# Definitions/Glossary

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
*	ISTD response or retention time outside acceptable limits
X	Surrogate is outside control limits

### GC Semi VOA

Qualifier	Qualifier Description
F2	MS/MSD RPD exceeds control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
X	Surrogate is outside control limits
p	The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported.

### HPLC/IC

Qualifier	Qualifier Description
*	RPD of the LCS and LCSD exceeds the control limits
X	Surrogate is outside control limits
E	Result exceeded calibration range.
F1	MS and/or MSD Recovery is outside acceptance limits.
p	The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported.
F2	MS/MSD RPD exceeds control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

### Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio

# Definitions/Glossary

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

## Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

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# Certification Summary

Client: AECOM, Inc.  
Project/Site: DOD Demo Bldg 301 & 304

TestAmerica Job ID: 440-111637-1  
SDG: 60340502

## Laboratory: TestAmerica Irvine

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	CA01531	06-30-15
Arizona	State Program	9	AZ0671	10-13-15
California	LA Cty Sanitation Districts	9	10256	01-31-16 *
California	State Program	9	2706	06-30-16
Guam	State Program	9	Cert. No. 12.002r	01-23-16
Hawaii	State Program	9	N/A	01-29-16
Nevada	State Program	9	CA015312007A	07-31-15
New Mexico	State Program	6	N/A	01-29-15 *
Northern Mariana Islands	State Program	9	MP0002	01-29-15 *
Oregon	NELAP	10	4005	01-29-16

## Laboratory: TestAmerica Honolulu

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
USDA	Federal		HON-S-206	01-31-18

## Laboratory: TestAmerica Phoenix

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
AIHA-LAP, LLC	ELLAP		154268	02-01-17
AIHA-LAP, LLC	IHLAP		154268	07-01-15 *
Arizona	State Program	9	AZ0728	06-09-15 *
California	State Program	9	2941	03-05-17
Nevada	State Program	9	AZ01030	07-31-15 *
New York	NELAP	2	11898	03-31-16
Oregon	NELAP	10	AZ100001	03-09-16
USDA	Federal		P330-09-00024	06-09-15 *

## Laboratory: TestAmerica Seattle

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-02-16
California	State Program	9	2901	01-31-17
L-A-B	DoD ELAP		L2236	01-19-16
L-A-B	ISO/IEC 17025		L2236	01-19-16
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-06-15
US Fish & Wildlife	Federal		LE192332-0	02-28-16
USDA	Federal		P330-11-00222	04-08-17
Washington	State Program	10	C553	02-17-16

\* Certification renewal pending - certification considered valid.

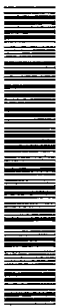
TestAmerica Irvine





**TestAmerica Irvine**  
 17461 Derfat Ave Suite 100  
 Irvine, CA 92614-5817  
 Phone (949) 261-1022 Fax (949) 260-3297

**Chain of Custody Record**



**TestAmerica**  
 THE LEADER IN ENVIRONMENTAL TESTING

<b>Client Information (Sub Contract Lab)</b>	Company: TestAmerica Laboratories, Inc	Address: 4825 East Cotton Cir Blvd, Suite 189, Phoenix AZ, 85040	City: Phoenix	State: AZ	Zip: 85040	Phone: 602-437-3344 (Tel) 602-454-9303 (Fax)	Email: [Redacted]	Project Name: DOD Demo Bldg 301 & 304	Site: [Redacted]	Project #: 44013197	SSOW#: [Redacted]	Sampler: [Redacted]	Lab PM: Piliatona, Craig O	E-Mail: craig.piliatona@testamericainc.com	Carrier Tracking No(s): [Redacted]	COC No: 440-83611-1	Page: Page 1 of 1	Job #: 440-111637-1
--	--	--	---------------	-----------	------------	--	-------------------	---------------------------------------	------------------	---------------------	-------------------	---------------------	----------------------------	--	------------------------------------	---------------------	-------------------	---------------------

<b>Analysis Requested</b>	Due Date Requested: 6/9/2015	TAT Requested (days): [Redacted]	Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/>	Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/>	8310_LL3510C PAHs	8310_LL3546 PAHs	Total Number of containers	Special Instructions/Note:
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Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Water, Solid, Other)	Preservation Code	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8310_LL3510C PAHs	8310_LL3546 PAHs	Total Number of containers	Special Instructions/Note:
DOD-1 (440-11637-1)	5/28/15	10:00 Pacific	Water	Water		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	X		2	J flag
DOD-2 (440-11637-5)	5/28/15	14:15 Pacific	Solid	Solid		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	X		1	J flag

**Possible Hazard Identification**

**Unconfirmed**

Deliverable Requested: I, II, III, IV, Other (specify)

Empty Kit Relinquished by: [Redacted] Date: [Redacted] Time: [Redacted] Method of Shipment: [Redacted]

Relinquished by: *V. B. Smith* Date/Time: 6/2/15 12:00 Company: *CHI* Received by: *F. Edwards* Date/Time: 6/2/15 12:00 Company: [Redacted]

Relinquished by: [Redacted] Date/Time: [Redacted] Company: [Redacted] Received by: [Redacted] Date/Time: 6/3/15 09:00 Company: *TA*

Custody Seals Intact:  Yes  No Custody Seal No.: [Redacted] Cooler Temperature(s) °C and Other Remarks: 2.3

## Login Sample Receipt Checklist

Client: AECOM, Inc.

Job Number: 440-111637-1

SDG Number: 60340502

**Login Number: 111637**

**List Number: 1**

**Creator: Freitag, Kevin R**

**List Source: TestAmerica Irvine**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



## Login Sample Receipt Checklist

Client: AECOM, Inc.

Job Number: 440-111637-1

SDG Number: 60340502

**Login Number: 111637**

**List Number: 2**

**Creator: Gravlin, Andrea**

**List Source: TestAmerica Phoenix**

**List Creation: 06/03/15 10:27 AM**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

## Login Sample Receipt Checklist

Client: AECOM, Inc.

Job Number: 440-111637-1

SDG Number: 60340502

**Login Number: 111637**

**List Number: 3**

**Creator: Gravlin, Andrea**

**List Source: TestAmerica Phoenix**

**List Creation: 06/03/15 10:27 AM**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.



## Login Sample Receipt Checklist

Client: AECOM, Inc.

Job Number: 440-111637-1

SDG Number: 60340502

**Login Number: 111637**

**List Number: 4**

**Creator: Shoemaker, Cory M**

**List Source: TestAmerica Phoenix**

**List Creation: 06/08/15 01:47 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.



## Login Sample Receipt Checklist

Client: AECOM, Inc.

Job Number: 440-111637-1

SDG Number: 60340502

**Login Number: 111637**

**List Number: 5**

**Creator: Abello, Andrea N**

**List Source: TestAmerica Seattle**

**List Creation: 06/09/15 01:20 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

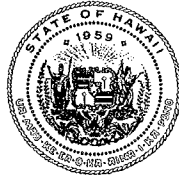




**Appendix D:  
Inspector and Laboratory Certifications**



DAVID Y. IGE  
GOVERNOR OF HAWAII



VIRGINIA PRESSLER, M.D.  
DIRECTOR OF HEALTH

STATE OF HAWAII  
DEPARTMENT OF HEALTH  
P.O. Box 3378  
HONOLULU, HAWAII 96801-3378

In reply, please refer to:  
File: EHSJ/IRH

June 4, 2015

To: Teresa Quiniola, Environmental Scientist  
AECOM Technical Services, Inc.

From: Department of Health, Indoor and Radiological Health Branch  
Asbestos Section

Subject: Annual Asbestos Entity Registration

Your Asbestos Entity Registration packet has been received and processed. Your registration number is **A-0169** and is valid until **May 25, 2016**. You are now registered with the Hawaii State Department of Health to perform asbestos projects pursuant to Hawaii Administrative Rules, Chapter 11-504.

The following employees who perform asbestos work **are expired** with the State:

- Danielle Coulombe (expired 07/25/2014)
- Bryan T. Matsunobu (expired 11/07/2014)
- Watson Y. Tanji (expired 07/09/2014)

If they are currently performing asbestos work, they are required to be certified with the State, pursuant to HAR, Chapter 11-504.

Thank you for your cooperation. Should you have any questions or require additional information, please contact Ms. Kristie Kasaoka Kimura at (808) 586-5800.

Encl: As stated

kkk

NEIL ABERCROMBIE  
GOVERNOR OF HAWAII



LINDA ROSEN, M.D., M.P.H.  
DIRECTOR OF HEALTH

STATE OF HAWAII  
DEPARTMENT OF HEALTH  
P.O. Box 3378  
HONOLULU, HAWAII 96801-3378

In reply, please refer to:  
File: EHSD/IRH

August 28, 2014

To: Frank Cioffi, Senior Engineer  
AECOM

From: Department of Health, Indoor and Radiological Health Branch  
Lead Section

Subject: Lead-Based Paint Activities Firm Certification

Your Lead-Based Paint Activities Firm certification packet has been received and processed. Your certification number is **PBF-0071** and is valid until **October 5, 2017**. You are now certified with the Hawaii State Department of Health to perform lead-based paint activities pursuant to Hawaii Administrative Rules, Chapter 11-41.

To maintain certification as a firm, please be sure to apply for re-certification prior to the expiration date.

Enclosed is the receipt for the \$400.00 certification fee.

Thank you for your cooperation. Should you have any questions or require additional information, please contact Mr. Thomas Lileikis at (808) 586-5800.

Enc: As stated

kkk

STATE OF HAWAII

DEPARTMENT OF HEALTH



## Lead-Based Paint Activities Firm Certification

*THIS IS TO CERTIFY THAT*

# AECOM

has fulfilled the requirements of Chapter 11-41 Hawaii Administrative Rules and the Toxic Substance Control Act (TSCA) Section 402(a)(2), and has received certification as a firm pursuant to §11-41-4, HAR to conduct lead-based paint activities in Hawaii.

This certification is valid from the date of issuance and expires on **OCTOBER 5, 2017**.

Date of Issue: **AUGUST 28, 2014**  
Certification # **PBF-0071**

A handwritten signature in blue ink, appearing to be "L. L. L.", is written over a horizontal line.

FOR DIRECTOR OF HEALTH

NON-TRANSFERABLE

REVOCABLE FOR CAUSE



**Quiniola**  
Teresa A.  
AECOM  
HIASB-2956  
State Exp. Date **10/20/2015**

## State of Hawai'i Asbestos Certification

### Training Course Exp. Dates

W	n/a	MP	n/a
CS	08/14/15	PD	n/a
INS	08/07/15	PM	12/27/14

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





**MURANAKA ENVIRONMENTAL CONSULTANTS, INC.**

*Training Certificate*

*This is to certify that*

***TERESA QUINIOLA***

*has attended the*

***ASBESTOS INSPECTOR REFRESHER COURSE***

*The person has completed the requisite training course  
for asbestos accreditation under TSCA Title II, Asbestos Model Accreditation Plan.*

*Accreditation number: MEC-AIR-08-07-2014-0142-07*

*Student's Social Security Number: XXX-XX-0017*

*Muranaka Environmental Consultants, Inc. is an accredited training provider in the State of Hawaii  
P.O. Box 4341 Honolulu, Hawaii 96812-4341 Phone: (808) 845-8822 Fax: (808) 845-8823*

*August 7, 2014*

*Date of Attendance*

*August 7, 2015*

*Expiration Date*

*August 7, 2014*

*Date of examination*

*Mark T. Muranaka, MS., M.P.H., President*



**MURANAKA ENVIRONMENTAL CONSULTANTS, INC.**

**Training Certificate**

*This is to certify that*

***TERESA QUINIOLA***

*has attended the*

***AHERA ASBESTOS ABATEMENT REFRESHER COURSE  
FOR CONTRACTORS & SUPERVISORS***

*The person has completed the requisite training course  
for asbestos accreditation under TSCA Title II, Asbestos Model Accreditation Plan.*

*Accreditation number: MEC-ACSR-08-14-2014-0146-01*

*Student's Social Security Number: XXX-XX-0017*

*Muranaka Environmental Consultants, Inc. is an accredited training provider in the State of Hawaii  
P.O. Box 4341 Honolulu, Hawaii 96812-4341 Phone: (808) 845-8822 Fax: (808) 845-8823*

*August 14, 2014 - August 14, 2014*

*Dates of Attendance*

*August 14, 2015*

*Expiration Date*

*August 14, 2014*

*Date of examination*

*Mark T. Muranaka, M.S., M.P.H., President*



# **GLOBETECK GROUP, INC**

2752 Woodlawn Drive, Suite 5-204A, Honolulu, HI 96822 - PHONE (808) 833-5787 - FAX (808) 833-5987

SITE: <http://www.globetecckgroup.com>

is pleased to announce that

**Teresa Quiniola**

XXX-XX-0017



has attended and successfully completed, in accordance with the State of Hawaii, Asbestos Project Monitor Initial Training Course as prescribed by the state of Hawaii under Title 11-504, Hawaii Administrative Rules. This training course meets all requirements of the Title 11, HAR 501-504 and the training provider is accredited within the state of Hawaii

## **Hawaii Asbestos Project Monitor Initial Training Certificate**

Certificate Number: GGI-APMI12272013-01Q  
Place of Training: Honolulu, Hawaii  
Date of Course: December 26-27, 2013  
Date of Examination: December 27, 2013  
Date of Expiration: December 27, 2014

  
Mohammad Rouf, MPH, CHMM  
Training Director  
Honolulu, Hawaii



**State of Hawai'i**  
**Lead Based Paint Activities Certification**

Expiration Dates:

Inspector- 01/18/2018  
Supervisor- n/a  
Risk Assessor- n/a  
Project Designer- n/a  
Worker- n/a

**Quiniola**  
**Teresa**

Certification # PB-0558





STATE OF HAWAII

DEPARTMENT OF HEALTH



## Lead-Based Paint Activities Certification

*THIS IS TO CERTIFY THAT*

**Teresa A. Quiniola**

has fulfilled the requirements of Chapter 11-41 Hawaii Administrative Rules and the Toxic Substance Control Act (TSCA) Section 402(a)(2), and has received certification to conduct lead-based paint activities in Hawaii pursuant to §11-41-4, HAR in the following discipline:

**Inspector**

This certification is valid from the date of issuance and expires on **JANUARY 18, 2018**.

Date of Issue: AUGUST 28, 2014

Certification #: PB-0558

A handwritten signature in blue ink, appearing to read "L. L. L.", is written over a horizontal line.

FOR DIRECTOR OF HEALTH

NON-TRANSFERABLE

REVOCABLE FOR CAUSE



# **GLOBETECK GROUP, INC**

2752 Woodlawn Drive, Suite 5-204A, Honolulu, HI 96822 - PHONE (808) 833-5787 - FAX (808) 833-5987

SITE: <http://www.globetecckgroup.com>

is pleased to announce that

***Teresa Quiniola***

**1001 Bishop St. #1600, Honolulu, HI 96813**



**has attended and successfully completed EPA/DOH Accredited Lead Inspector Refresher Training Course in accordance with 40 CFR 745/HAR Title 11, Chapter 41.**

## **EPA/DOH Accredited Lead Inspector Refresher Training Certificate**

Certificate Number: GGI-LIR08222014-02Q

Training Date : August 22, 2014

Examination Date: August 22, 2014

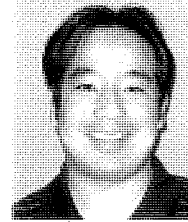
**Mohammad Rouf, CHMM, MPH**  
Training Director  
Honolulu, Hawaii



# State of Hawai'i Asbestos Certification

## Training Course Exp. Dates

W	n/a	MP	03/05/16
CS	n/a	PD	09/23/15
INS	01/23/16	PM	n/a



**Kimura**  
Fletcher M.  
AECOM Technical Services  
**HIASB-3073**  
State Exp. Date 06/17/2015

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



# GLOBETECK GROUP, INC

2752 Woodlawn Drive, Suite 5-204A, Honolulu, HI 96822 - PHONE (808) 833-5787 - FAX (808) 833-5987

SITE: <http://www.globetecckgroup.com>

is pleased to announce that

**Fletcher Kimura**

XXX-XX-1467



has attended and successfully completed the requisite training course for AHERA Asbestos Project Designer Refresher accreditation under TSCA Title II, Asbestos Model Accreditation Plan and the provider is accredited to provide training within the State of Hawaii.

## AHERA Project Designer Refresher Training Certificate

Certificate Number: GGI-PDR09232014-01K  
Place of Training: Honolulu, Hawaii  
Date of Course: September 23, 2014  
Date of Examination: September 23, 2014  
Date of Expiration: September 23, 2015

Mohammad Rouf, MPH, CHMM  
Training Director  
Honolulu, Hawaii





**MURANAKA ENVIRONMENTAL CONSULTANTS, INC.**

*Training Certificate*

*This is to certify that*

***FLETCHER KIMURA***

*has attended the*

***ASBESTOS INSPECTOR REFRESHER COURSE***

*The person has completed the requisite training course  
for asbestos accreditation under TSCA Title II, Asbestos Model Accreditation Plan.*

*Accreditation number: MEC-AIR-01-23-2015-0006-15*

*Student's Social Security Number: XXX-XX-1467*

*Muranaka Environmental Consultants, Inc. is an accredited training provider in the State of Hawaii  
P.O. Box 4341 Honolulu, Hawaii 96812-4341 Phone: (808) 845-8822 Fax: (808) 845-8823*

*January 23, 2015*

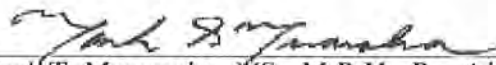
*Date of Attendance*

*January 23, 2016*

*Expiration Date*

*January 23, 2015*

*Date of examination*

  
*Mark T. Muranaka, MS., M.P.H., President*



**MURANAKA ENVIRONMENTAL CONSULTANTS, INC.**

*Training Certificate*

*This is to certify that*

***FLETCHER KIMURA***

*has attended the*

***AHERA ASBESTOS MANAGEMENT PLANNER INITIAL COURSE***

*The person has completed the requisite training course  
for asbestos accreditation under TSCA Title II, Asbestos Model Accreditation Plan.*

*Accreditation number: MEC-AMPI-03-05-2015-0035-04*

*Student's Social Security Number: XXX-XX-1467*

*Muranaka Environmental Consultants, Inc. is an accredited training provider in the State of Hawaii  
P.O. Box 4341 Honolulu, Hawaii 96812-4341 Phone: (808) 845-8822 Fax: (808) 845-8823*

*March 4, 2015 - March 5, 2015*

*Dates of Attendance*

*March 5, 2016*

*Expiration Date*

*March 5, 2015*

*Date of examination*

*Mark T. Muranaka, M.S., M.P.H., President*



**State of Hawai'i**  
**Lead Based Paint Activities Certification**

**Expiration Dates:**

Inspector- n/a  
Supervisor- n/a  
Risk Assessor- 03/24/2016  
Project Designer- n/a  
Worker- n/a

**Kimura**  
**Fletcher**

Certification # PB-0429



NEIL ABERCROMBIE  
GOVERNOR OF HAWAII



LORETTA J. FUDDY, A.C.S.W., M.P.H.  
DIRECTOR OF HEALTH

STATE OF HAWAII  
DEPARTMENT OF HEALTH  
P.O. Box 3378  
HONOLULU, HAWAII 96801-3378

In reply, please refer to:  
File:

February 27, 2013

To: Mr. Fletcher Kimura

From: Department of Health, Indoor and Radiological Health Branch  
Lead Section

Subject: Lead-Based Paint Activities Individual Certification

Your lead-based paint activities re-certification packet has been received and processed. Your certification number is **PB-0429** and is valid until **March 24, 2016 (Risk Assessor)**. You are now certified to perform lead-based paint activities within the State of Hawaii and will abide by the rules set forth in Hawaii Administrative Rules (HAR) Chapter 11-41.

The expiration date(s) on your card is the expiration date(s) of your state certification for the discipline(s) you applied. You may not perform any work related to your discipline(s) after the expiration date. In order to maintain your certification in Hawaii, please ensure that you attend the appropriate re-certification course and **apply to the department prior to this expiration date**. By doing so, you avoid having to retake the initial course (**there is NO GRACE PERIOD**). You will need to schedule an appointment for a new card.

Enclosed is the receipt for the \$375.00 certification fee.

Thank you for your cooperation. Should you have any questions or require additional information, please contact Mr. Tom Lileikis at (808) 586-5800.

Enc: As stated

kk







# Receipt



591 Ala Moana Blvd  
Honolulu, HI 96813  
Phone: (808) 586-4700 Fax: (808) 586-5838

Receipt Date	2/27/2013	Receipt Number	2013-32164
--------------	-----------	----------------	------------

Name	Kimura International, Inc.	Country	USA
Address	1600 Kapiolani Blvd., Suite 1610	Phone	(808) 944-8848
	Honolulu HI		96814

Check Number	2634	Delivery method	Receipt Mailed
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This is not proof of licensure or permit

**Comments** Lead-Based Paint Individual Re-certification for Fletcher M. Kimura PB-0429 (Risk Assessor) expires 03/24/2016

Source Code	Source Code ID	Fee Amount
0988	Fees, Cert & Annual Registration	\$375.00
<b>Sum</b>		<b>\$375.00</b>

Wednesday, February 27, 2013



# **GLOBETECK GROUP, INC**

2752 Woodlawn Drive, Suite 5-204A, Honolulu, HI 96822 - PHONE (808) 833-5787 - FAX (808) 833-5987

SITE: <http://www.globetecckgroup.com>

is pleased to announce that

**Ryan Shinmoto**


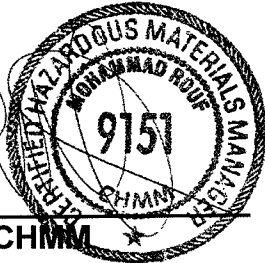
XXX-XX-8702



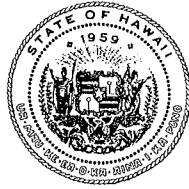
has attended and successfully completed the requisite training course for AHERA Asbestos Building Inspector Initial accreditation under TSCA Title II, Asbestos Model Accreditation Plan and the provider is accredited to provide training within the State of Hawaii.

## **AHERA Asbestos Building Inspector Initial Training Certificate**

Certificate Number: GGI-BII01302015-01M  
Place of Training: Honolulu, Hawaii  
Date of Course: January 28-30, 2015  
Date of Examination: January 30, 2015  
Date of Expiration: January 30, 2016

  
  
**Mohammad Rouf, MPH, CHMM**  
Training Director  
Honolulu, Hawaii

DAVID Y. IGE  
GOVERNOR OF HAWAII



VIRGINIA PRESSLER, M.D.  
DIRECTOR OF HEALTH

STATE OF HAWAII  
DEPARTMENT OF HEALTH  
P.O. Box 3378  
HONOLULU, HAWAII 96801-3378

In reply, please refer to:  
File: EHSD/IRH

March 23, 2015

To: Mr. Ryan Shinmoto

From: Department of Health, Indoor and Radiological Health Branch  
Asbestos Section

Subject: Annual Asbestos Individual Certification

Your asbestos certification packet has been received and processed. Your certification number is **HIASB-3957** and is valid until **March 23, 2016**. You are now certified to perform work in the asbestos field within the State of Hawaii and will abide by the rules set forth in HAR Chapter 11-501 through 11-504.

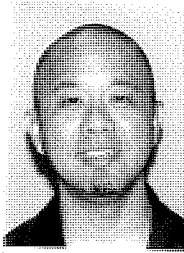
All certified individuals are provided with an identification card. The expiration date(s) on the top of the card is the expiration date of your training. You may not perform any work related to your discipline after the expiration date(s) without completion of a refresher course. Contact our office when you have received your refresher course certification. You will need to schedule an appointment for a new card. Annual renewal fees are due before the expiration date specified on the bottom of the certification card.

Enclosed is the receipt for the **\$200.00** certification fee.

Thank you for your cooperation. Should you have any questions or require additional information, please contact Ms. Kristie Kasaoka Kimura at (808) 586-5800.

Enc: As stated

kkk



# State of Hawai'i Asbestos Certification

## Training Course Exp. Dates

W	n/a	MP	n/a
CS	n/a	PD	n/a
INS	01/30/16	PM	n/a

**Shinmoto**

Ryan K.

AECOM Technical Services, Inc.

HIASB-3957

State Exp. Date 03/23/2016

W= Worker

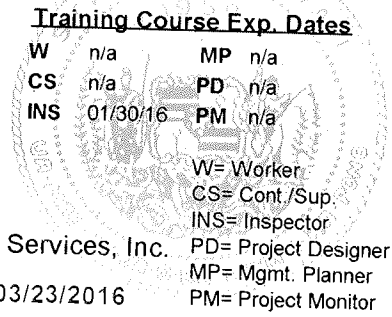
CS= Cont./Sup.

INS= Inspector

PD= Project Designer

MP= Mgmt. Planner

PM= Project Monitor







## AIHA Laboratory Accreditation Programs, LLC

*acknowledges that*

### **NVL Laboratories, Inc.**

4708 Aurora Avenue N., Seattle, WA 98103

Laboratory ID: 101861

along with all premises from which key activities are performed, as listed above, has fulfilled the requirements of the AIHA Laboratory Accreditation Programs (AIHA-LAP), LLC accreditation to the ISO/IEC 17025:2005 international standard, *General Requirements for the Competence of Testing and Calibration Laboratories* in the following:

#### **LABORATORY ACCREDITATION PROGRAMS**

- |                                      |                                   |
|--------------------------------------|-----------------------------------|
| ✓ <b>INDUSTRIAL HYGIENE</b>          | Accreditation Expires: 05/01/2017 |
| ✓ <b>ENVIRONMENTAL LEAD</b>          | Accreditation Expires: 05/01/2017 |
| ✓ <b>ENVIRONMENTAL MICROBIOLOGY</b>  | Accreditation Expires: 05/01/2017 |
| <input type="checkbox"/> <b>FOOD</b> | Accreditation Expires:            |
| ✓ <b>UNIQUE SCOPES</b>               | Accreditation Expires: 05/01/2017 |

Specific Field(s) of Testing (FoT)/Method(s) within each Accreditation Program for which the above named laboratory maintains accreditation is outlined on the attached **Scope of Accreditation**. Continued accreditation is contingent upon successful on-going compliance with ISO/IEC 17025:2005 and AIHA-LAP, LLC requirements. This certificate is not valid without the attached **Scope of Accreditation**. Please review the AIHA-LAP, LLC website ([www.aihaaccreditedlabs.org](http://www.aihaaccreditedlabs.org)) for the most current Scope.

Gerald Schultz, CIH  
Chairperson, Analytical Accreditation Board

Cheryl O. Morton  
Managing Director, AIHA Laboratory Accreditation Programs, LLC

Revision 14: 03/26/2014

Date Issued: 04/30/2015





## AIHA Laboratory Accreditation Programs, LLC SCOPE OF ACCREDITATION

**NVL Laboratories, Inc.**  
4708 Aurora Avenue N., Seattle, WA 98103

Laboratory ID: **101861**  
Issue Date: 04/30/2015

The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

### Industrial Hygiene Laboratory Accreditation Program (IHLAP)

**Initial Accreditation Date: 04/01/1997**

IHLAP Scope Category	Field of Testing (FoT)	Technology sub-type/ Detector	Published Reference Method/Title of In-house Method	Method Description or Analyte <i>(for internal methods only)</i>
<b>Spectrometry Core</b>	Atomic Absorption	FAA	EPA 3051	
			NIOSH 7082	
	Inductively-Coupled Plasma	ICP/AES	EPA SW-846 3051	
			NIOSH 7300	
X-ray Diffraction (XRD)		NIOSH 7500		
<b>Asbestos/Fiber Microscopy Core</b>	Phase Contrast Microscopy (PCM)		NIOSH 7400	
<b>Miscellaneous Core</b>	Gravimetric		NIOSH 0500	
			NIOSH 0600	

A complete listing of currently accredited Industrial Hygiene laboratories is available on the AIHA-LAP, LLC website at: <http://www.aihaaccreditedlabs.org>



## AIHA Laboratory Accreditation Programs, LLC SCOPE OF ACCREDITATION

**NVL Laboratories, Inc.**  
4708 Aurora Avenue N., Seattle, WA 98103

Laboratory ID: **101861**  
Issue Date: 04/30/2015

The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

The EPA recognizes the AIHA-LAP, LLC ELLAP program as meeting the requirements of the National Lead Laboratory Accreditation Program (NLLAP) established under Title X of the Residential Lead-Based Paint Hazard Reduction Act of 1992 and includes paint, soil and dust wipe analysis. Air analysis is not included as part of the NLLAP.

### Environmental Lead Laboratory Accreditation Program (ELLAP)

**Initial Accreditation Date: 02/07/1997**

Field of Testing (FoT)	Method	Method Description <i>(for internal methods only)</i>
Paint	EPA SW-846 3051	
	EPA SW-846 7000B	
Soil	EPA SW-846 3051	
	EPA SW-846 7000B	
Settled Dust by Wipe	EPA SW-846 3051	
	EPA SW-846 7000B	
Airborne Dust	EPA SW-846 3051	
	NIOSH 7082	

A complete listing of currently accredited Environmental Lead laboratories is available on the AIHA-LAP, LLC website at: <http://www.aihaaccreditedlabs.org>



## AIHA Laboratory Accreditation Programs, LLC SCOPE OF ACCREDITATION

**NVL Laboratories, Inc.**  
4708 Aurora Avenue N., Seattle, WA 98103

Laboratory ID: **101861**  
Issue Date: 04/30/2015

The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

### Environmental Microbiology Laboratory Accreditation Program (EMLAP)

**Initial Accreditation Date: 02/01/1997**

EMLAP Category	Field of Testing (FoT)	Method	Method Description <i>(for internal methods only)</i>
<b>Fungal</b>	Air - Direct Examination	SOP 12.133	In-House: Analysis of Spore Trap
	Bulk - Direct Examination	SOP 12.130	In-House: Bulk Analysis
	Surface - Direct Examination	SOP 12.130	In-House: Surface Analysis

A complete listing of currently accredited Environmental Microbiology laboratories is available on the AIHA-LAP, LLC website at: <http://www.aihaaccreditedlabs.org>



## AIHA Laboratory Accreditation Programs, LLC SCOPE OF ACCREDITATION

**NVL Laboratories, Inc.**  
4708 Aurora Avenue N., Seattle, WA 98103

Laboratory ID: **101861**  
Issue Date: 04/30/2015

The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

### Unique Scopes Laboratory Accreditation Program (Unique Scopes)

**Initial Accreditation Date: 04/01/2013**

Unique Scope Category	Field of Testing (FoT)	Method	Method Description <i>(for internal methods only)</i>
<b>Consumer Product Testing</b>	Lead in Paint and Other Similar Surface Coatings	CPSC-CH-E1003-09	
	Total Lead in Metal Children's Products	CPSC-CH-E1001-08	
	Total Lead in Non-Metal Children's Products	CPSC-CH-E1003-08.2	

A complete listing of currently accredited Unique Scope laboratories is available on the AIHA-LAP, LLC website at: <http://www.aihaaccreditedlabs.org>





April 30, 2015

Laboratory ID: 101861

Nghiep Vi Ly  
NVL Laboratories, Inc.  
4708 Aurora Avenue N.  
Seattle, WA 98103

Dear Nghiep Vi Ly:

Congratulations! The AIHA Laboratory Accreditation Programs (AIHA-LAP), LLC's Analytical Accreditation Board (AAB) has approved NVL Laboratories, Inc. as an accredited Industrial Hygiene, Environmental Lead, Environmental Microbiology, and Unique Scopes laboratory.

Accreditation documentation includes the IHLAP, ELLAP, EMLAP and Unique Scopes accreditation certificate, scope of accreditation document and a copy of the current AIHA-LAP, LLC license agreement (if your completed agreement is not on file at AIHA-LAP, LLC). The accreditation logo has been designed for use by all AIHA-LAP, LLC accredited laboratories. If your laboratory chooses to use the logo in its advertising the laboratory's accreditation, you must complete and return the AIHA-LAP, LLC license agreement to a Laboratory Accreditation Specialist. Once submitted, an electronic copy of the accreditation logo will be sent to you. Please inform us if your laboratory does not wish to use the logo in advertising.

Laboratory accreditation shall be maintained by continued compliance with IHLAP, ELLAP, EMLAP and Unique Scopes requirements (*see Policy Modules 2B, 2C, 2D, 2E and 6*), which includes proficient participation in AIHA-LAP, LLC approved proficiency testing, demonstration of competency, or round robin program as indicated on the AIHA-LAP "Approved PT and Round Robin" webpage, its associated PT-Scope table, and as required in Policy Module 6, for all Fields of Testing (FoTs) for which the laboratory is accredited. An accredited laboratory that wishes to expand into a new FoT must submit an updated accreditation application to AIHA-LAP, LLC for review by the AAB.

Any changes in ownership, laboratory location, personnel, FoTs/Methods, or significant procedural changes shall be reported to AIHA-LAP, LLC in writing within twenty (20) business days of the change.

The accreditation certificate is the property of AIHA-LAP, LLC and must be returned to us should your laboratory withdraw or be removed from the Industrial Hygiene, Environmental Lead, Environmental Microbiology, and Unique Scopes.

Again, congratulations. If you have any questions, please contact Lauren Schnack, Laboratory Accreditation Specialist, at (703) 846-0716.

Sincerely,

Cheryl O. Morton  
Managing Director  
AIHA Laboratory Accreditation Programs, LLC

*AIHA Laboratory Accreditation Programs, LLC*  
3141 Fairview Park Drive, Suite 777, Falls Church, VA 22042 USA  
*main* +1 703-846-0736 *fax* +1 703-207-8558

*Twitter: @AIHA\_LAP\_LLC*

R2 04/26/2013

Page 1 of 1

United States Department of Commerce  
National Institute of Standards and Technology



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**Certificate of Accreditation to ISO/IEC 17025:2005**

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NVLAP LAB CODE: 102063-0

**NVL Laboratories, Inc.**  
Seattle, WA

*is accredited by the National Voluntary Laboratory Accreditation Program for specific services,  
listed on the Scope of Accreditation, for:*

**BULK ASBESTOS FIBER ANALYSIS**

*This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005.  
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality  
management system (refer to joint ISO-ILAC-IAF Communiqué dated January 2009).*

2014-10-01 through 2015-09-30

*Effective dates*



A handwritten signature in black ink, appearing to read "William R. Mallory".

*For the National Institute of Standards and Technology*





**National Voluntary  
Laboratory Accreditation Program**



**SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005**

**NVL Laboratories, Inc.**  
4708 Aurora Avenue N.  
Seattle, WA 98103  
Mr. Nghiep Vi Ly  
Phone: 206-547-0100 Fax: 206-634-1936  
E-Mail: [nick.l@nvlabs.com](mailto:nick.l@nvlabs.com)  
URL: <http://www.nvlabs.com>

**BULK ASBESTOS FIBER ANALYSIS (PLM)**

**NVLAP LAB CODE 102063-0**

***NVLAP Code    Designation / Description***

- 18/A01            EPA 600/M4-82-020: Interim Method for the Determination of Asbestos in Bulk Insulation Samples
- 18/A03            EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials

2014-10-01 through 2015-09-30

*Effective dates*

*For the National Institute of Standards and Technology*





**About AECOM**

AECOM (NYSE: ACM) is a global provider of professional technical and management support services to a broad range of markets, including transportation, facilities, environmental and energy. With more than 59,000 employees around the world, AECOM is a leader in all of the key markets that it serves. AECOM provides a blend of global reach, local knowledge, innovation, and technical excellence in delivering solutions that enhance and sustain the world's built, natural, and social environments.

**AECOM Technical Services, Inc.**

1001 Bishop Street, Suite 1600

Honolulu, Hawaii 96813

T 808.523.8874

F 808.523.8950

[www.aecom.com](http://www.aecom.com)

HIARNG ENVIRONMENTAL CONTRACTOR REQUIREMENTS

<b>PROJECT NAME:</b>	
<b>PROJECT NUMBER:</b>	<b>SUBMISSION DATE:</b>
<b>REVIEWER:</b> ENV-Compliance	<b>DATE REVIEWED:</b>
	<b>DATE RECEIVED:</b>

	<b>COMMENTS</b>
X	In order to facilitate Emergency Planning and Community Right-to-Know Act (EPCRA) reporting requirements, prior to project start and within 30 days of completion of the project, contractor shall submit to HIARNG-ENV a Hazardous Material Inventory Log of chemical products to be used in the project, and provide an update no later than 31 January of each calendar year. The log shall include the product name and manufacturer ID number, container size, amount used, and maximum number of containers to be stored on site at any given day during the project. HIARNG-ENV may waive this requirement based upon contractor request. (Sample inventory log attached). Safety Data Sheets (SDSs) shall be provided or made available to the government COR/project manager and HIARNG-ENV upon request.
X	Prior to project start, Contractor will provide to HIARNG-ENV and the COR/project manager an estimate of the maximum amount of hazardous waste, universal waste, and other regulated waste (e.g., asbestos, lead paint chips, fluorescent lamps, PCB ballasts) expected to be generated per month, and the total amount anticipated to be stored on-site at any given time. Contractor shall also provide name of disposal/recycling facilities and transporters to be used for hazardous waste, including their EPA ID numbers; disposal/recycling facilities and transporters used must be listed on DRMS's lists of Qualified Facilities and Qualified Transporters at <a href="http://www.dispositionservices.dla.mil/newenv/hwdisposal.shtml">http://www.dispositionservices.dla.mil/newenv/hwdisposal.shtml</a> . All waste will be stored in a secured area pending removal for disposal, with signage indicating contact information, and shall be managed, packaged, and transported in accordance with all applicable federal, state, and local regulations. Monthly waste generation reports shall be provided to HIARNG-ENV and the COR/project manager by the 5 <sup>th</sup> of the month after the end of the month being reported. The reports shall indicate the type of waste and the number of pounds of each type generated in each container each month. (Sample container waste collection log and waste generation report attached).
X	Contractor shall be responsible for all costs for disposal of waste generated from this project and shall provide copies of all waste disposal documentation (including any required lab analyses, waste profiles, and any other supporting documentation) to the HIARNG-ENV and the COR/project manager, along with draft copies of the waste manifests for review prior to waste shipment off-site for disposal. The applicable HIARNG EPA ID Number shall be used on waste manifests, and manifests will only be signed by individuals authorized by HIARNG-ENV.
X	All construction sites are subject to the regulations of 40 CFR 112 <i>Oil Pollution Prevention</i> and are required to prepare a site specific Spill Prevention, Control and Countermeasure (SPCC) plan if storing more than 1320 gallons (G) of POL on site. A copy of the SPCC plan must be submitted to HIARNG-ENV before start of the project and kept readily available on site. If the site is storing less than 1320 G of POL no SPCC plan is required, however, the contractor shall implement the applicable HIARNG SPCC plan.
X	Contractor, in general, shall be responsible for assessing whether the project and/or project activities require environmental permits and are responsible for obtaining, implementing and maintaining all applicable permit requirements.
X	All projects that disturb more than 1 acre of soil, including projects that, considered with other related projects (i.e., are part of a larger common plan of development or sale), cumulatively

	disturb more than 1 acre of soil, are required to obtain an applicable National Pollutant Discharge Elimination System (NPDES) stormwater discharge permit from the Hawaii Department of Health (HDOH) and implement all permit requirements, plans, and inspections. Sites less than 1 acre are required to implement best management practices (BMP's) to prevent contaminated stormwater from leaving the site.
X	Contractors shall be responsible for assessing the need for and obtaining the following permits as applicable: NPDES permits for construction activity, underground injection control well (UIC), oil water separator, grease trap, and individual waste water system. The ENV office shall be copied on all permit correspondence, and shall be provided the original copy of all permits.
X	Contractors are required to install and maintain stormwater Best Management Practices (BMPs) and protective measures (regardless of project size or scope) to prevent the pollution of stormwater to the maximum extent practicable (MEP).
X	Contractor shall be responsible for complying with all existing and applicable HIARNG environmental permits, e.g., National Pollutant Discharge Elimination System (NPDES) permits, UIC permits, Industrial Wastewater Discharge permits (IWDPs), Individual Wastewater System (IWS) permits, etc.
X	Contractor shall post emergency contact sign indicating the name and phone number for the government COR/project manager, the contractor emergency contact, police/fire department 911, and HIARNG ENV 672-1013. (Sample sign attached). Contractor shall report spills immediately to the COR and HIARNG-ENV and complete the HIARNG Spill Incident Report Form as required. Contractor shall immediately clean up all spills IAW federal and state guidelines and to the satisfaction of HIARNG-ENV. Contractor shall maintain adequate spill supplies commensurate with the potential for spills, and will contract out spill cleanup beyond their capabilities. Contractor shall accomplish all regulatory verbal and written notifications to the State Emergency Response Commission, Local Emergency Planning Committee (LEPC), National Response Center (NRC), Environmental Protection Agency (EPA), as applicable, and provide HIARNG-ENV copies of all spill reports submitted.
X	Contractor shall be responsible for determining, via generator knowledge (including applicable SDS information, etc.), sampling and testing, etc., the constituents and concentrations of hazardous substances/materials (HS/M) released/spilled into the environment and determining the applicable and regulatory compliant method/procedure to mitigate any resulting hazardous (to human health and the environment) condition; appropriate cleanup (including cleanup of the contaminated media); appropriate storage and management of any contaminated material/media; and proper disposal of all contaminated material/media. For contaminated waste disposal, the Contractor shall determine whether the waste material/media is a Resource, Conservation and Recovery Act (RCRA) hazardous waste (HW), which requires management and disposal pursuant to all applicable RCRA requirements.
X	Send to HIARNG-ENV the data for non-hazardous <b>recycled/diverted waste</b> (i.e. waste that does not go into the landfill or H-POWER) and non-hazardous <b>disposed waste</b> for all construction projects. Data can be provided by any means (e.g. receipt copies, Excel table, email message) Data should include: Recycled/Diverted waste -type of material -net weight -recycle facility (e.g. Schnitzer, Island Recycling, Refrigerant Recycling) -ticket number (if available) -cost/revenue (if applicable) Disposed waste -net weight -disposal facility (e.g. PVT, Schnitzer)



	-ticket number (if available) -cost (if applicable)
X	If Hazardous Substances/Materials (HazMat), e.g., lead-based paint (LBP), asbestos, PCBs, mercury lamps, etc., have been determined to be present within the project site and the contract requires that the Contractor demolish, remove, manage, transport and disposed of the existing HazMat, Contractor will conduct/complete such HazMat activities in accordance with all applicable federal, state and county requirements. Such environmental requirements include, but is not limited to, the federal Toxic Substances Control Act (TSCA) and the State of Hawaii Department of Health solid waste and recycling requirements.



# NAME OF CONTRACTOR



NPDES Permit: HI S000XXX

Superintendent: NAME/PHONE

Project Engineer: NAME/PHONE

Spill/Safety: NAME/PHONE

HIARNG PM: NAME/PHONE

HIARNG NPDES POC: NAME/PHONE

Police/Fire: 911

**HIARNG Environmental Office**

**Spill Hotline:**

**672-1013**



# HAZARDOUS MATERIAL INVENTORY LOG

*Continuation Page*

PRODUCT NAME AND IDENTIFICATION NUMBER	MANUFACTURER	SIZE OF CONTAINER	ESTIMATED NUMBER OF CONTAINERS FOR PROJECT	MAXIMUM NUMBER OF CONTAINERS STORED ON SITE AT ANY ONE TIME	ACTUAL NUMBER OF CONTAINERS USED	FOR ENV USE
					Page	of



# HIARNG Spill Incident Report Form

REPORT SPILLS IMMEDIATELY TO HIARNG-ENV AT 672-1013.  
 Fax this form to 672-1262 or e-mail [ng.hi.hiarng.list.nghi-env-comp@mail.mil](mailto:ng.hi.hiarng.list.nghi-env-comp@mail.mil) within 72 hours of the spill.

<b>1</b>	LOCATION OF SPILL (Facility/Address/Bldg):	DATE & TIME OF SPILL:	
<b>2</b>	CALLER NAME & PHONE NUMBER:	OSC NAME & PHONE NUMBER:	
<b>3</b>	ORGANIZATION REPORTING:		
<b>4</b>	DATE AND TIME OF DISCOVERY:	DURATION OF THE SPILL:	
<b>5</b>	TIME & DATE HIARNG ENV NOTIFIED (672-1013):	PERSON NOTIFIED:	
<b>6</b>	SUBSTANCE SPILLED ( <i>Attach SDS</i> ):	AMOUNT SPILLED:	SIZE OF AREA IMPACTED:
<b>7</b>	CAUSE AND SOURCE OF THE SPILL:		
<b>8</b>	EXTENT AND SEVERITY OF SPILL: Potential Dangers: <input type="checkbox"/> Fire <input type="checkbox"/> Explosion <input type="checkbox"/> Toxic Fumes/Fluid <input type="checkbox"/> Evacuation Needed <input type="checkbox"/> Damage or Injuries ( <i>Specify</i> ):  Media into Which the Release Occurred or is Likely to Occur (Check all applicable): <input type="checkbox"/> Soil <input type="checkbox"/> Concrete <input type="checkbox"/> Asphalt <input type="checkbox"/> UIC <input type="checkbox"/> Storm Drain <input type="checkbox"/> Swale <input type="checkbox"/> Sewer <input type="checkbox"/> Stream <input type="checkbox"/> Other ( <i>Specify</i> ): Raining? <input type="checkbox"/> No <input type="checkbox"/> Yes Raining Imminent? <input type="checkbox"/> No <input type="checkbox"/> Yes Direction of Flow:		
<b>9</b>	RESPONSE ACTIONS TAKEN TO STOP, REMOVE, AND MITIGATE EFFECTS OF THE SPILL:		
<b>10</b>	ADDITIONAL ASSISTANCE REQUIRED? <input type="checkbox"/> No <input type="checkbox"/> Yes ( <i>Specify</i> ):		
<b>11</b>	OTHER HIARNG OR EXTERNAL AGENCIES NOTIFIED ( <i>Agency, Individual, Date, Time, and Incident Number Assigned by Agency</i> ): <input type="checkbox"/> Fire Dept. <input type="checkbox"/> Ambulance <input type="checkbox"/> Other ( <i>Specify</i> ):		
<b>12</b>	PREVENTIVE ACTIONS TO BE TAKEN: ( <i>NOTE: This incident is required to be covered in the next unit/activity spill training.</i> )		
<b>13</b>	SUBMITTED BY ( <i>Name, Title, Phone</i> )		

*For Environmental Office Use Only.*

<b>1</b>	REPORTABLE? <input type="checkbox"/> No <input type="checkbox"/> Yes	REPORTABLE QTY:	Samples Taken? <input type="checkbox"/> No <input type="checkbox"/> Yes
<b>2</b>	VERBAL NOTIFICATIONS MADE ( <i>Indicate Agency, Individual, Date, and Time Notified, and any Incident Number Assigned</i> ) <input type="checkbox"/> SERC (HEER): <input type="checkbox"/> LEPC: <input type="checkbox"/> NRC (800) 424-8801: <input type="checkbox"/> Other ( <i>Specify</i> ): DATE WRITTEN NOTIFICATIONS MADE:		
<b>3</b>	CORRECTIVE ACTIONS TAKEN/ RECOMMENDED TO PRECLUDE RECURRENCE:		





## **SECTION 01770 - CLOSEOUT PROCEDURES**

### **PART 1 - GENERAL**

#### **1.01 SUMMARY**

- A. This Section includes administrative and procedural requirements for contract closeout, including the following:
  - 1. Project Record Documents.
- B. Related documents include the following:
  - 1. SECTION 01700 - EXECUTION REQUIREMENTS.

#### **1.02 SUBSTANTIAL COMPLETION**

- A. Preliminary Procedures: Before requesting a Final Inspection to determine Substantial Completion, complete the following items in addition to requirements of Article 7 of the GENERAL CONDITIONS.
  - 1. Terminate and remove temporary facilities from Project.
  - 2. Complete final cleaning requirements, including any bare areas that need to be grassed.

#### **1.03 FINAL COMPLETION**

- A. Within 10 days from the Project Acceptance Date, notify the Contracting Officer to coordinate any miscellaneous items.

#### **1.04 LIST OF INCOMPLETE ITEMS (PUNCH LIST)**

- A. Preparation: Submit 2 copies of any updated and action taken list. In addition to requirements of GENERAL CONDITIONS Article 7 PROSECUTION AND PROGRESS, include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
  - 1. Organize list of subject categories.
  - 2. Include the following information at the top of each page:
    - a. Project Name and Title.
    - b. Job No.
    - c. Date and page number.
    - d. Name of Contractor.

#### **1.05 PROJECT RECORD DOCUMENTS AND REQUIREMENTS**

- A. General:
  - 1. Definition: "Project Record Documents", including Record Drawings, shall fulfill the requirements of "Field-Posted As-Built Drawings" listed in the GENERAL CONDITIONS.
  - 2. Submit final Record Documents (Field Posted Record Drawings) before the Final Inspection Date and no later than the Contract Completion Date, unless the GENERAL CONDITIONS require otherwise.

3. The Contractor shall guarantee the accuracy of its final Record Documents. The State will hold the Contractor liable for costs the State incurs as a result of inaccuracies in the Contractor's Record Documents.
  4. The Designer, under contract with the State, will update the electronic drawings to record the changes depicted on the Contractor's Field Posted Record ("As-Builts")
  5. Prepare and submit [construction photographs and electronic files], damage or settlement surveys, property surveys, and similar final record information as required by the Contracting Officer.
- B. Record Drawings:
1. Maintain a duplicate full-size set as the Field Posted Record ("As-Builts") Drawings at the job site. Clearly and accurately record all deviations from alignments, elevations and dimensions, which are stipulated on the drawings and for changes directed by the Contracting Officer that deviate from the drawings.
  2. Record changes immediately after they are constructed in place and where applicable, refer to the authorizing document (Field Order, Change Order, or Contract Modification). Use red pencil to record changes. Make Field Posted Record Drawings available to the Contracting Officer at any time so that its clarity and accuracy can be monitored and can be countersigned for validity.
    - a. Give particular attention to information on concealed elements that cannot be readily identified and recorded later.
    - b. Accurately record information in an understandable drawing technique.
    - c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
    - d. Mark the contract drawings or the shop drawings, whichever is most capable of showing actual physical conditions, completely and accurately. Where Shop Drawings are marked, show cross-reference on contract drawings.
    - e. Mark important additional information that was either shown schematically or omitted from original Drawings.
    - f. Locate concealed building utilities by dimension from bench marks or permanent structures. Locate site utilities by dimensions, azimuth and lengths from bench marks or permanent structures.
    - g. Note field order numbers, Change Order numbers, Contract Modification numbers, Alternate numbers, post-construction drawing numbers (PCD) and similar identification (RFI numbers) where applicable.
    - h. The Contractor shall initial each deviation and each revision marking.
  3. Use the final updated Contract Drawing set (including all addenda, PCD, and sketches) plus applicable shop drawings for making the final Field Posted Record Drawings submittal.
  4. Certify drawing accuracy and completeness. Label and sign the record drawings or use digital electronic signature as approved by the Contracting Officer.
  5. Label the title sheet and on all sheets in the margin space to the right of the sheet number, written from the bottom upward, with the title "FIELD POSTED

RECORD DRAWINGS” and certification information as shown below. Provide a signature line and company name line for each subcontractor that will also certify the respective drawing. Adjust size to fit margin space.

FIELD POSTED                      Certified By: \_\_\_\_\_ Date: \_\_\_\_\_  
RECORD DRAWINGS                [Contractor’s Company Name]

6. Revise the Drawing Index and label the set “FIELD POSTED RECORD DRAWINGS”. Include the label “A COMPLETE SET CONTAINS [\_\_\_\_] SHEETS” in the margin at the bottom right corner of each sheet. Quantify the total number of sheets comprising the set.
7. If the Contracting Officer determines a drawing does not accurately record a deviation or omits relevant information, the State will correct any FIELD POSTED RECORD DRAWINGS sheet. Contractor will be charged for the State’s cost to correct the error or omission.
8. Use the final Field Posted Record Drawings sheets and create one electronic version of the set. The set shall be recorded in Adobe Acrobat PDF (Portable Document Format). Create a single indexed, bookmarked PDF file of the entire set of drawings and provide a copy to the Contracting Officer.

## **PART 2 – PRODUCTS (Not Used)**

## **PART 3 - EXECUTION**

### **3.01 FINAL CLEANING**

- A. General: Provide final cleaning. Contractor shall conduct cleaning and waste-removal operations to comply with local laws and ordinances and federal and local environmental and antipollution regulations.
- B. Cleaning:
  1. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
  2. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits resulting from construction activities.
  3. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
  4. Remove tools, construction equipment, machinery, and surplus material from Project site.
- C. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the State’s property. Do not discharge volatile, harmful, or dangerous materials into drainage and sewer systems or onto State property. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION

## **DIVISION 2 - SITE CONSTRUCTION**

### **SECTION 02100 - DEMOLITION AND REMOVAL**

#### **PART 1 - GENERAL**

##### **1.01 SUMMARY**

- A. This Section includes the following for demolition and removal:
  1. Furnish all materials, labor and equipment necessary to demolish and remove all existing structures and appurtenances as shown in the drawings and as specified herein.

##### **1.02 GENERAL**

- A. Condition at Site:
  1. Visit the site, examine and note all existing conditions and extent of work involved for completion of this work.
  2. Accept obvious conditions and extent of work involved for completion of this work.
  3. Exercise every precaution to preserve and protect from damage all existing structures, plants, trees, walls, private and public utilities above and below ground, etc., that are to remain. Repair any damage to the satisfaction of the Contracting Officer.
- B. Permits, Notices, Etc.:
  1. Procure and pay for all necessary permits or certificates required in connection with this work.
  2. Serve proper notices and consult with the Contracting Officer regarding any temporary disconnections of electrical or other utility lines which may interfere with this work. Properly disconnect all such lines where necessary before commencing with the work.
- C. Existing Utility Lines: Existence of underground utility lines other than those shown is not definitely known. Should any be encountered, immediately notify the Contracting Officer and follow his direction as to procedure at no additional cost to the State of Hawai'i.

##### **1.03 STANDARD REFERENCES**

- A. "Hawai'i Standard Specifications for Road, Bridge and Public Works Construction," dated 1994 (paragraph concerning measurements and payment in the section are not applicable to this project) and all related revisions and amendments.

Removal of Structures and Obstructions

Section 202

#### **PART 2 - PRODUCTS (Not Used)**

## **PART 3 - EXECUTION**

### **3.01 DEMOLITION AND REMOVAL**

- A. Execute all work in an orderly manner, with proper safety precautions observed at all times. Provide warning signs, lights, barricades, etc., as required or as directed by the Contracting Officer.
  
- B. Demolish all improvements indicated on the drawings completely on the site.

### **3.02 CONTRACT ZONE LIMITS**

- A. The Contract Zone Limits shown on the drawings indicate only in general, limits of the work involved. Perform any and all necessary and incidental work which may fall outside of these demarcation lines. Confine all activities within the Contract Zone Limits and do not spread equipment and materials indiscriminately about the area.

### **3.03 DUST CONTROL**

- A. Keep the work area thoroughly wetted down to prevent dirt and dust from rising. Provide all waterlines required for this purpose. Grade to fill all depressions or pits and to remove high spots after grubbing and removing all debris.

### **3.04 DEBRIS**

- A. Remove all debris existing or accumulated from this work completely and promptly from the site to the satisfaction of the Contracting Officer. Burning of debris at the site is not permitted.

### **3.05 CLEANING**

- A. Keep the premises clean, neat and orderly at all times. Promptly remove all tools, debris, materials, apparatus, temporary toils, lights, barriers, etc., from the site upon completion of this work.

### **3.06 FILLING VOIDS**

- A. Completely fill below-grade areas and voids resulting from demolition of structures.
  - 1. Use satisfactory soil materials as defined in ASTM D 2478, consisting of stone, gravel, and sand, free from debris, trash, roots, and other organic matter.
  - 2. Prior to placement of fill materials, ensure that areas to be filled are free of standing water, trash and debris.
  - 3. Place fill materials in horizontal layers not exceeding 6 inches in loose depth. Compact each layer at optimum moisture content of fill material to a density equal to original adjacent ground, but not less than 90 percent density when tested in accordance with ASTM D 1556, unless subsequent excavation for new work is required.
  - 4. After fill placement and compaction, grade surface to meet adjacent contours and to provide flow to surface drainage structures.

END OF SECTION



## **SECTION 02230 - SITE CLEARING**

### **PART 1 - GENERAL**

#### **1.01 SUMMARY**

- A. This Section includes the following for site clearing:
  - 1. Clearing means removal of all waste material found at or above original ground level, such as, surface rocks and trees, shrubs, bushes and other organic matter.
  - 2. Grubbing means removal all waste material found at or below original ground level, such as, stumps, roots, boards, logs and other organic matter.

#### **1.02 STANDARD REFERENCES**

- A. "Hawai'i Standard Specifications for Road, Bridge and Public Works Construction," dated 1994 (paragraph concerning measurements and payment in the section are not applicable to this project) and all related revisions and amendments.

Clearing and Grubbing

Section 201

### **PART 2 - PRODUCTS**

#### **2.01 EXPLOSIVES**

- A. Explosives will not be permitted.

### **PART 3 - EXECUTION**

#### **3.01 INSPECTION**

- A. Drawings do not purport to show all objects existing on site required to be cleared and grubbed.
- B. Carefully inspect entire site and verify with Contracting Officer for clarification where doubt exists.

#### **3.02 PREPARATION**

- A. Existing Utilities:
  - 1. Existence of existing utility lines other than those shown is not definitely known. Notify the Contracting Officer as to procedure to follow should others than shown be encountered.
  - 2. Maintain existing utility services and protect against damage.
  - 3. Provide temporary services during interruptions.

#### **3.03 CLEARING AND GRUBBING**

- A. Clearing:
  - 1. Remove all waste material and other organic matter found at or above original ground level.

2. Remove all trees and tree stumps, if existing, with bulk of roots to minimum depth of four (4) feet below existing grade or finish grade, whichever is lower, within a radius of the tree canopy or three (3) feet beyond perimeter of trunk at ground line, whichever is greater. Backfill and compact with material and methods specified in Section 02300 - SITE EARTHWORK.

B. Grubbing:

1. Remove all waste material and other organic matter to a depth of two (2) feet below existing grade or finish grade, whichever is lower.
2. Herbicides: Apply to all roots remaining in soil in accordance with manufacturer's instructions.

**3.04 REMOVAL OF DEBRIS**

- A. Remove all waste material from site and dispose of legally.

B. Recycling Green Waste:

In the effort to maximize the use of green waste by Hawai'i's composting and soil amendment industries and reduce the dependency on mainland-produced materials, facilitate the generation of electricity, enhance the economy through increased employment opportunities, extend the life of existing sanitary landfills and enrich the environment, the following efforts for recycling green waste material (e.g., yard debris and tree trimming, logs and stumps, untreated wood, etc.) shall be exercised where applicable:

1. Where a commercial composting or recycling facility is available on the island on which the project is situated and where economically practical, green waste material shall be delivered to a composting or recycling facility for recycling. The types and condition of acceptable green waste material shall be confirmed with the composting facility and all applicable charges shall be paid for by the Contractor. A copy of the receipts for disposal (e.g., tipping fees) shall be submitted to the Contracting Officer.

**3.05 AUTHORITY**

- A. To comply with the requirement set forth under the HRS.

END OF SECTION

## **SECTION 02300 - SITE EARTHWORK**

### **PART 1 - GENERAL**

#### **1.01 SUMMARY**

- A. This Section includes the following for site earthwork:
  - 1. Furnish all labor, materials, services, equipment and related items necessary to excavate, fill, remove, transport, stockpile and dispose of all materials within the limits of the project required to construct the site work improvements in conformity with the dimensions, sections and details shown on the drawings.

#### **1.02 STANDARD REFERENCES**

- A. "Hawai'i Standard Specifications for Road, Bridge and Public Works Constructions," dated 1994 (paragraph concerning measurements and payment in the section are not applicable to this project) and all related revisions and amendments.

Excavation and Embankment                      Section 203

#### **1.03 PROTECTION**

- A. Erosion Control: The Contractor shall incorporate into his work schedule the Temporary Erosion Control Measures.
  
- B. Dust Control:
  - 1. Every effort shall be made by the Contractor to keep dust to a minimum. Spraying the ground with water or other means of control shall be used wherever possible.
  
  - 2. Without limiting the generality or applicability of other indemnity provisions of the contract, the Contractor agrees that he shall indemnify and hold harmless the State of Hawaii from and against all suits, actions, claims, demands, damages, costs and expenses (including but not limited to attorney's fees) arising out of any damage to any property whatsoever or injury to any person whomsoever, in any way caused or contributed to by dust from the Contractor's operations.
  
- C. Existing Utilities and Work Areas: The Contractor shall be responsible for the protection of existing surface and subsurface utilities and poles within and abutting the project site, trench excavations and other work areas.

### **PART 2 - PRODUCTS**

#### **2.01 MATERIALS**

- A. Fill: On-site material excavated within the project limits may be utilized in the fills required, unless otherwise specified in the plans or otherwise directed by the Contracting Officer during construction. Roots, trees, branches and all other organic matter missed during clearing and grubbing shall be removed from the fill material. Generally, fill materials, unless otherwise specified, may consist of rock, gravel, sand or soil, or a mixture thereof.

- B. Borrow: Imported material shall be non-expansive and free from organic matter and debris and shall meet the requirements for the particular use intended. All imported materials shall be treated, inspected and approved by the Contracting Officer prior to being hauled to the project site. Borrow shall conform to Section 203 of the standard specification presented in Part 1 of this section.
- C. Rocks: Rocks greater than 6 inches in diameter shall be removed off-site or stockpiled for use other than as an engineered fill. Rocks may be placed in areas suitable for rock disposal in accordance with the recommendations of the Contracting Officer.
- D. Rock for Fill: Rock for fill shall conform to Section 203 of the standard specification presented in Part 1 of this section.
- E. Crushed Rock: Crushed rock shall conform to Section 203 of the standard specification presented in Part 1 of this section.
- F. #3B Fine Gravel: Conform to ASTM C 33 No. 67 gradation.

### **PART 3 - EXECUTION**

#### **3.01 GRADING**

- A. Notification of Schedule: The Contracting Officer shall be notified by the Contractor after clearing and grubbing and before any fill is placed; and also at least 2 weeks in advance before mass grading operations are scheduled to begin. Further, the Contractor shall advise the Contracting Officer of the proposed overall schedule for earthwork operations.
- B. General: All cuts and fills to be constructed shall be monitored by the Contracting Officer or his representative, who shall approve all foundation preparation, fill material, methods of placing and compaction and perform field density tests during the grading. Written approval shall be issued upon completion of cuts and fills. No deviation from these specifications shall be made except upon the written approval of the Contracting Officer.
- C. Preparation of Subgrades for Areas to Receive Fill:
  - 1. Firm Competent Soils: Areas upon which fill is to be placed shall be uniform scarified to a depth of at least 6 inches until free of large clods, brought to the proper moisture content and recompact to a minimum of 90 percent of its maximum density as established by ASTM D 1557. Soft, yielding or pumping areas shall be over-excavated and stabilized by backfilling with select borrow placed in 12-inch loose lifts compacted to 90 percent maximum dry density.
  - 2. Soft Wet Soils: Where soft wet soils are encountered, special grading techniques should be used to avoid bogging down of the earth moving equipment and/or loss of stability in the subsoils. In general, light equipment should be used for the clearing and grubbing operations; and, earthwork operations should progress slowly to lessen the possibility of disruption of the subsoils which could result in failure or slippage of the fill mass.

After the clearing and grubbing and archaeological monitoring of a section of existing ground are completed, a working platform shall be established before the placement of major fills. The working platform shall consist of a single lift of borrow material 3 feet loose thickness.

D. Compaction Requirements:

1. After completion of the subgrade preparation, fill shall be placed in uniform layers not exceeding 12 inches in loose thickness and compacted to 90 percent of its maximum dry density. Each layer shall be thoroughly compacted completely to the edge before the next layer is laid thereon. Compaction shall be obtained with the use of conventional equipment designed for the purpose. The incidental compaction achieved by the passage of hauling units over the fill will not be considered adequate.
2. Each layer of soils shall be brought to moisture content sufficiently close to "optimum moisture" being determined by ASTM D 1557. If the soils moisture content is too high or too low, it shall be adjusted by suitable means before placing. Compaction of each layer of fill, including slopes, berms, etc., shall be continued until the density as determined by field tests reaches a value of 90 percent of maximum indicated by the aforementioned methods. In lieu of compacting the slopes, embankments may be overfilled past the design slope and then cut back.
3. Where fill supports structural loads, the material shall be compacted at least 95 percent of the maximum dry density. The fill shall extend beyond the footings a distance of at least 5 feet, or the depth of fill beneath the footings, whichever is greater.
4. In all cases where the existing ground slope is steeper than 5 horizontal to 1 vertical, the existing slope shall be keyed when fill is placed on the slope.

E. Excavations:

1. All excavation shall be made to the lines and grades as shown on the project plans. All excavation shall be inspected and approved by the Contracting Officer. Where conditions encountered require, he shall direct the necessary modifications to be made.
2. Suitable material from excavation shall be used in the fill and unsuitable material from excavation shall be disposed of.

F. Drainage: Care shall be exercised during grading so that areas involved will drain properly. Water shall be prevented from running over the slopes by temporary measures, such as, berms.

G. Supervision: At all times the Contractor shall have a responsible field superintendent on the project in full charge of the work authority to make decisions. He shall cooperate with the Contracting Officer in carrying out the work. Any instructions given to him by the Contracting Officer shall be considered to have been given to the Contractor personally.

- J. Rainy Weather: No fill shall be placed, spread or rolled during unfavorable weather. When the work is interrupted by rain, operations shall not be resumed until field tests by the Geotechnical Engineer indicate that conditions will permit satisfactory results.
- K. Unforeseen Conditions: If unforeseen or undetected soil conditions, such as, soft spots, existing utility trenches, structure foundations voids or cavities, boulders seepage water or expansive soil pockets, etc., are encountered, the Contractor at his sole expense shall make all necessary corrective measures in the field as such conditions are detected.

**3.02 UNSUITABLE EXCAVATED MATERIAL**

- A The Contractor shall remove from the site all unsuitable excavated material unless specified otherwise by the Contracting Officer.
- B. Removal of unsuitable material will not be paid for directly, but shall be considered incidental to the project.

END OF SECTION



## **SECTION 02510 - WATER DISTRIBUTION SYSTEMS**

### **PART 1 - GENERAL**

#### **1.01 SUMMARY**

- A. This Section includes the following for water distribution systems:
  - 1. Furnish labor, materials, services, equipment, and other necessary items required to cut and plug the existing system.

#### **1.02 STANDARD REFERENCES**

- A. In addition, the following construction standards, with certain modifications as hereinafter specified, are hereby incorporated into and made a part of these specifications by reference and shall be applicable to all work performed by the Contractor under this section.
  - 1. Specific sections of the City & County of Honolulu "Standard Specifications for Public Works Construction," dated September 1986, and "Standard Details for Public Works Construction," dated September 1984, as revised, except as amended on the drawings and/or in the specifications herewith (paragraphs concerning measurements and payments in the sections are not applicable to this project).
  - 2. City & County of Honolulu, Board of Water Supply (BWS) "Water System Standards," dated 2002, "Water System External Corrosion Control Standards", Volume 3 dated 1991, and all subsequent amendments and additions, referred to hereinafter as the "Water Standards."

#### **1.03 SUBMITTALS**

- A. Submit in accordance with SECTION 01330 - SUBMITTAL PROCEDURES.
- B. As-Built Drawings: As-built drawings shall be submitted by the Contractor to the Contracting Officer in accordance with SECTION 01770 - CLOSEOUT PROCEDURES.

#### **1.04 COORDINATION**

- A. Coordinate the work with termination of water system service connection outside building.

#### **1.05 QUALITY ASSURANCE**

- A. Perform work in accordance with utility company and/or municipality requirements.

### **PART 2 - PRODUCTS**

#### **2.01 MATERIALS FOR WATER SYSTEM**

- A. Materials for water system shall be in accordance with, but not be limited to, the following section of the Water Standards:

Service Laterals and Appurtenances

Section 208

**PART 3 - EXECUTION**

**3.01 INSTALLATION**

A. Location and Adjustment of Existing Utility Lines:

1. The Contactor shall be responsible for precisely locating the various exterior utility lines shown on the drawings. The locations shown on the drawings of the various existing utility lines were determined on the basis of the best information available; however, no assurance can be provided that the actual locations will be precisely as shown on the drawings.
2. In performing all work, the Contractor shall exercise due care and caution necessary to avoid any damage to and impairment in the use of any existing utility line. Any damage inflicted on existing lines resulting from the Contractor's operations shall be immediately repaired and restored as directed by the Contracting Officer entirely at the Contractor's expense at no additional cost to the State.

B. Excavation and Backfill:

1. Trench excavation and backfill for the laying and installation of water lines, to the required line, grade and structural excavation for the construction of appurtenant structures, shall be governed by, but not be limited to, the following provisions of the Water Standards:

Trench Excavation	Section 302.02
Trench Backfill	Section 302.03
Restoring Pavements, Driveways, Sidewalks, Curbs, Gutters, Fences, Walls and Miscellaneous	Section 302.37
Sitework	Section 303.02

Compaction testing of backfill shall be done by an independent testing laboratory licensed in the State of Hawai'i retained by the Contractor. All cost of testing shall be borne by the Contractor.

2. Surplus material resulting from trench and structure excavation shall be used by the Contractor for backfilling, filling and grading to the extent required as specified elsewhere in these specifications.

END OF SECTION



B. The Contractor shall mark the location of the sewer stub that is cut and plugged.

**3.02 FINAL INSPECTION**

A. Before Final Inspection, the Contractor shall ensure that sanitary sewer lines and manholes are free from sand, silt or other obstructions.

END OF SECTION

## **SECTION 02920 - GRASSING**

### **PART 1—GENERAL**

#### 1.01 SUMMARY

#### 1.02 GENERAL REQUIREMENTS

Furnish all labor, materials, equipment and tools for grassing the area indicated on the plans.

- A. All existing grassed areas that are damaged by construction operations;
- B. Areas that are dug up for utility trenches;
- C. Areas from which existing structures are to be removed;
- D. Areas with Limits of Grading.
- E. Existing bare areas.

#### 1.03 PROJECT CONDITIONS

- A. Protect existing utilities, paving and other facilities from damage during preparation and grassing operations. All trenching and backfilling will be completed prior to grassing.
- B. Perform grassing work only after other work affecting ground surface has been completed.
- C. No planting shall be attempted when weather conditions would make uniform planting impossible, such as high wind, excessive heat or saturated seedbeds.

### **PART 2 - PRODUCTS**

#### 2.01 Mulch Materials

- A. Mulch shall be specially-processed fiber containing no growth or germination-inhibiting factors. It shall be such that any addition and agitation in the hydraulic equipment with seed, fertilizer, water and other additives not detrimental to plant growth, the fibers will form a homogeneous slurry. When hydraulically sprayed on the soil, the fibers shall form a blotter-like ground cover which readily absorbs water and allows infiltration to the underlying soil.
- B. Stabilizing and water retaining agent for hydro-mulching option only shall be "Verdyol Super", "Ecology Control M-Binder" or approved equal. Rate of application of "Verdyol Super" shall be 50 lbs./acre and that for "Ecology Control M-Binder" shall be 60 lbs./acre.

## **PART 3 - EXECUTION**

### **3.01 INSTALLATION AND WORKMANSHIP**

#### **A. Site Preparation:**

1. Before hydromulching is started, weeds and other obnoxious vegetation shall be removed by manual or chemical methods.
2. Leveling: Any undulations or irregularities in the surface resulting from grading or other operations shall be leveled out before mulching operations are begun.
3. Planting Option by Hydraulic Planting and Mulching: This work shall consist of furnishing and applying mulch.

#### **F. Watering:**

1. Initial watering shall be applied immediately following mulching and should be approximately 30-45 minutes.
2. Water shall be applied to the planted areas, and planted areas shall be kept moist until roots are established.

### **3.02 CLEANING AND REPAIR**

- A. Perform cleaning during installation of the work and upon completion of the work. Remove from site all excess materials, debris and equipment.
- B. Repair damage resulting from grassing operations.
- C. Areas eroded more than three inches deep or six inches wide shall be mitigated and restored to the original grade.

### **3.03 INSPECTIONS**

- A. Maintenance Period: Contractor is responsible for maintaining the planting for 90 days from notice of preliminary acceptance.
- B. Final Inspection:
  1. At the completion of the maintenance period, request a final inspection. Notify the Commanding Officer five (5) working days prior to the inspection so a mutually agreeable time for inspection may be arranged.
  2. The Contracting Officer, Contractor, or their representatives shall be present at the inspection.
  3. If, after the inspection, the Contracting Officer are of the opinion that all work has been performed in accordance with the Drawings and Specifications, written notice of acceptance and completion of the project will be given. If all or certain portions of the project are not acceptable under the terms and intent of the Drawings and Specifications, a reasonable



amount will be retained from the final payment and the defects in the work shall be corrected before the work is accepted by the Contracting Officer.

#### 3.04 MAINTENANCE DURING GROW-IN

- A. General: Begin maintenance period immediately after completion. Maintenance shall include watering, mowing, maintaining of grades and elevations in all grassed areas, and other operations necessary to maintain work. Remove from the site all leaves, papers, trash, and debris which accumulate in grassed areas. Maintenance shall be required until the entire project is accepted, but in any event for a period not less than 6 days after planting of grass.
- B. Watering: After mulching the ground shall be watered as deemed necessary by the Contractor to establish a healthy growth.
- C. Weeding: Weeds shall be uprooted and removed completely and in no case shall they be allowed to grow and propagate more seeds. Large holes caused by weeding shall be filled with screened soil and raked level. At fourteen (14) days, a pre-emergent herbicide can be applied to greatly reduce weed infestation. Read and follow label. Apply at 1/4 to 1/2 the suggested rate on label. Water immediately and avoid over-watering and runoff.
- D. Mowing: Grass shall be mowed to a height of 1" whenever the height of grass becomes 1-1/2". Initial mowing should be six (6) to eight (8) weeks after planting. Dry out field before mowing and maintenance.
- F. Repairing and Regrassing: When any portion of the surface becomes gullied or otherwise damaged and grass has failed to grow, such areas shall be repaired with screened soil and replanted with grass. Any area of one (1) foot square or more in which grass has failed to grow after 30 days of maintenance shall be regrassed.

#### 3.05 ACCEPTANCE OF GRASSING

- A. Acceptance of grass areas at conclusion of maintenance period shall be conditioned upon 98 percent coverage of grass areas. Individual bare spots shall not exceed one square foot in area.
- B. At the end of the maintenance period, should there appear areas where grass has failed to grow, such areas shall be replanted with grass, refertilized and maintained beyond the maintenance period until a healthy growth is established. Maintenance period for all planting shall be extended at no additional cost if grass planting does not meet this requirement.
- C. At the time of acceptance, the grass shall have been well established and shall be given a final weeding, final fertilization, and a final mowing to a height of 1 inch. If the maintenance period has expired before acceptance of the entire project, the Contractor shall continue to maintain the grass until acceptance of the entire project. If the maintenance period should extend beyond acceptance of the entire project, the Contractor shall continue to maintain the grass until the end of the specified period of time required for maintenance.

END OF SECTION

## **DIVISION 13 - SPECIAL CONSTRUCTION**

### **SECTION 13200 - ABOVE GROUND STORAGE TANK REMOVAL**

#### **PART 1 - GENERAL**

##### **1.01 SUMMARY**

- A. Furnish all labor, materials, equipment, and services necessary to carry out the safe removal and disposal of the oil-water separator unit and associated waste oil holding tank located at the CSMS-1 Building 304 Complex for the State of Hawaii, Department of Defense, Hawaii Army National Guard, Demolition of Building 304 Complex at Fort Ruger, Honolulu, Hawaii, project in conformance with these specifications, and notes and details shown on the drawings.

##### **1.02 DESCRIPTION**

- A. In performing this project, all possible safeguards, precautions and protective measures shall be utilized to prevent the release of any amount of petroleum product or other potentially hazardous material into the environment during the closure and removal of the oil-water separator unit, including the surge pit and all associated drains and piping, located at the HIARNG CSMS-1 Building 304 Complex, located in Fort Ruger, Honolulu, Hawaii. This work shall include:
  - 1. Proper removal, handling, transportation, and disposal of all of the contents of the oil-water separator, holding tank, and piping, including waste oil, sludge, and other liquids or sediment.
  - 2. Removal and disposal of the oil-water separator unit and associated holding tank located on the northwest end of Building 304, as indicated in the Drawings.
  - 3. Removal and disposal of pumping systems, drains, surge pit, foundations, associated below ground piping and miscellaneous equipment from the site, as indicated in the Drawings.

##### **1.03 COORDINATION WITH OTHER SECTIONS**

- A. The Contractor is to coordinate all work with the Engineer and the work and requirements described in the following:
  - 1. SECTION 02240 - DEMOLITION AND REMOVAL for work and requirements involving demolition and removal of existing structures.
  - 2. SECTION 02300 - SITE EARTHWORK for work and requirements involving site earthwork and excavations.
  - 3. SECTION 02600 - DRAINAGE AND CONTAINMENT for work and requirements involving drainage and containment.

##### **1.04 ABBREVIATIONS**

- A. AST: Above ground Storage Tank
- B. CGI: Combustible Gas Indicator
- C. CSMS-1: Combined Support Maintenance Shop Number 1

- D. HDOD: State of Hawaii, Department of Defense
- E. HIARNG: Hawaii Army National Guard
- F. LEL: Lower Explosive Limit
- G. NESHAP: National Emission Standards for Hazardous Air Pollutants
- H. OSHA: Occupational Safety and Health Administration
- I. UL: Underwriters Laboratories

**1.05 SUBMITTALS PRIOR TO WORK**

- A. Submit in accordance with SECTION 01330 - SUBMITTAL PROCEDURES.
- B. Submit the Contractor's Health and Safety Plan for informational review.

**1.06 SUBMITTALS AFTER WORK IS COMPLETED**

- A. Submit in accordance with SECTION 01330 - SUBMITTAL PROCEDURES
- B. At the completion of the work, the following items shall be submitted for acceptance by the Engineer:
  - 1. Remove UL tank labels.
  - 2. Written certification of tank destruction within 20 days of removal.
  - 3. A statement signed by the Contractor that the removal and disposal of the AST and associated drains, pits, and piping was performed in compliance with this specification, and federal and state regulations.

**1.07 PROTECTION**

- A. The Contractor shall adequately protect the work site, adjacent property, workers, and members of the general public during all phases of the project. The Contractor shall be solely responsible for all damages, including environmental contamination, or injury due to his or her negligence.

**1.08 QUALIFICATIONS**

- A. All work under this contract must be completed under the direction of properly-trained and licensed personnel.

**1.09 UTILITIES**

- A. Prior to commencing work, the Contractor is required to verify and to have professionally identified the location of all site utilities and take precautions to protect them during the course of work. Should damage result due to Contractor negligence, the Contractor shall bear the cost of all repairs.

## **PART 2 - PRODUCTS (Not Used)**

## **PART 3 - EXECUTION**

### **3.01 SAFETY PRECAUTIONS**

- A. Avoid all sources of ignition while removing liquids from the existing equipment, and while removing the equipment.
- B. Smoking, use of an open flame, or the use of spark generating tools within 50 feet of the oil-water separator and waste oil holding tank or other potential source are strictly prohibited.
- C. Place barricades and appropriate warning signs around the area adjacent to the project site to prevent the entry of unauthorized persons during cleaning, oil-water separator and waste oil holding tank removal preparation, oil-water separator and waste oil holding tank removal and fuel line closure.
- D. Verify that all electrical sources to tanks, pumps, dispensers, and instruments have been de-energized and disconnected prior to commencing work.
- E. At all times during the work, the Contractor shall have on site equipment suitable for the detection of organic/combustible vapors, and to safely quench any fires and contain and remove any leaks.
- F. The Contractor shall have a Health and Safety Plan (HSP) prepared prior to the initiation of work. All field personnel and subcontractors shall have read and signed the plan prior to conducting the work on the project.
- G. Neither the State nor the Engineer shall not be responsible for the approval of the Health and Safety Plan or for the Contractor's safety, but shall be provided the opportunity to review the HSP prior to mobilization.
- H. All on-site Contractor and Subcontractor personnel shall have completed the OSHA 40-hour Health and Safety Course and annual OSHA 8-hour refresher, including any required related training or monitoring, and carry certification of same at the site.

### **3.02 PRODUCT REMOVAL AND TANK INERTING**

- A. Prior to commencing the oil-water separator and waste oil holding tank removal operations, the Contractor shall attempt to empty the AST as completely as possible with the existing pumping system.
- B. Piping: Prior to commencing removal, all fuel piping shall be completely drained by the Contractor with all product being flushed and drained back into the AST. Under no circumstances shall product be allowed to drain from the piping into or onto the surrounding ground areas.
- C. Pump Out: All remaining liquids, solids and sludge inside of the AST shall be completely removed by the Contractor, and handled, containerized, transported, and disposed of in accordance with all applicable State, Federal, and other requirements. Any material that is not considered recyclable shall be disposed of in accordance with applicable

requirements at a properly permitted facility, at the Contractor's expense. Copies of all manifests for the disposal of hazardous waste (if any) shall be submitted to the Engineer within 24 hours of delivery to the licensed treatment or disposal facility.

- D. Pumps: All vacuum and transfer pump motors and suction hoses shall be grounded to the oil-water separator and waste oil holding tank to prevent electrostatic ignition hazards. Only explosion-proof or air driven pumps shall be allowed at the site.
- E. Inerting:
  - 1. Ignition: Shut down all open flame and spark producing equipment within the vapor hazard area (50 feet from the oil-water separator and waste oil holding tank). Smoking at any time during the inerting process is strictly prohibited. Remove all non-explosion proof electrical and internal combustion equipment. Utilize only non-sparking tools on the exposed oil-water separator and waste oil holding tank fittings. Minimize static electricity by grounding all working equipment.
  - 2. Before oil-water separator and waste oil holding tank removal, the unit shall be rendered inert with the addition of dry ice, or compressed nitrogen or carbon dioxide gas. Flammable vapors expelled from the oil-water separator and waste oil holding tank during this process shall be vented a minimum of 12 feet above grade and 3 feet above adjacent roof lines. The oil-water separator and waste oil holding tank removal shall not proceed if atmospheric conditions will prevent the dispersal and dilution of the vapors discharged from the unit.
  - 3. Inerting with Dry Ice: The vapors in the oil-water separator and waste oil holding tank may be displaced by adding 1.5 pounds of dry ice for every 100 gallons of oil-water separator and waste oil holding tank capacity. The dry ice shall be crushed and distributed evenly over the greatest possible area on the oil-water separator and waste oil holding tank bottom. Avoid skin contact with dry ice. As the dry ice evaporates, flammable vapors may surround the area. Observe all safety precautions regarding flammable vapors.
  - 4. Inerting with Compressed Gas: The vapors of the oil-water separator and waste oil holding tank may be displaced by flushing the unit with compressed nitrogen or carbon dioxide gas. Using tubing or other appropriate delivery methods, flush the unit by allowing the nitrogen or carbon dioxide gas to freely flow into its bottom. Continue delivery of nitrogen or carbon dioxide until the oxygen percentage, as measured by the CGI, is as low as feasibly possible.
  - 5. During the inerting process, the oxygen level in the oil-water separator and waste oil holding tank shall be checked continuously with an oxygen and CGI meter. Achieve an oxygen level as close to zero percent as is practicable. When the process is successfully complete, plug all openings except for the vent lines, and commence oil-water separator and waste oil holding tank removal.

### **3.03 TANK AND PIPE REMOVAL**

- A. Safety: Exercise care during oil-water separator and waste oil holding tank removal to minimize spark production. Monitor the site atmosphere with a combustible gas indicator (CGI) during all activities.

- B. Continued Testing: After initial purging/inerting, periodically continue testing both in and around the oil-water separator and waste oil holding tank with a CGI until the oil-water separator and waste oil holding tank is removed from the site.
- C. Removal: The Contractor shall provide equipment of sufficient capacity to lift the oil-water separator and waste oil holding tank and load it onto a transportation vehicle for transportation to the disposal site. Dragging of oil-water separator and waste oil holding tank shall not be allowed.
- D. The Contractor shall remove all drains, underground pump, pits, and piping from the site.

**3.04 TANK DISPOSAL**

- A. Removal: Upon removal and loading of the oil-water separator and waste oil holding tank onto an appropriate mode of transportation, the oil-water separator and waste oil holding tank shall be immediately removed from the site. The oil-water separator and waste oil holding tank shall not be stored on site overnight after the removal.
- B. Testing: Prior to shipping, test in and around the oil-water separator and waste oil holding tank with a CGI to ensure that flammable vapor concentrations do not exceed safe levels for transportation.
- C. Labeling: Label as to vapor state, vapor inerting treatment and date. Also, permanently label the oil-water separator and waste oil holding tank with 2-inch high letters as follows:

TANK HAS CONTAINED FLAMMABLE LIQUID  
NOT GAS FREE  
NOT SUITABLE FOR FOOD OR DRINKING WATER THAT IS  
INTENDED FOR ANIMAL OR HUMAN CONSUMPTION

- D. Transportation: The oil-water separator and waste oil holding tank shall be secured on a vehicle for transportation to the disposal site in accordance with all applicable requirements.
- E. UL oil-water separator and waste oil holding tank labels shall be removed from the oil-water separator and waste oil holding tank and returned to the Engineer.
- F. Disposal: The removed AST shall not be sold for reuse. Final disposal shall be accomplished by cutting the oil-water separator and waste oil holding tank for scrap metal or discarding it in an accepting and approved solid waste disposal facility.
- G. Provide written certification to the Engineer of the AST destruction within 20 days of removal.
- H. The Contractor shall not be allowed to disassembled or cut the AST for scrap metal on site.

END OF SECTION



## **SECTION 13281 - ASBESTOS ABATEMENT**

### **PART 1 - GENERAL**

#### **1.01 SUMMARY**

- A. Furnish all labor, materials, equipment, and services necessary to carry out the safe removal and disposal of all asbestos-containing materials for the State of Hawaii, Department of Defense, Hawaii Army National Guard, Demolition of Building 304 Complex at Fort Ruger, Honolulu, Hawaii, in conformance with these specifications, and notes and details shown on the drawings. All asbestos abatement work will be done in compliance with all applicable laws, regulations, and other requirements, including those established by the EPA, OSHA, and State and local authorities. Whenever there is a conflict or overlap of these contract drawings, or any applicable legal requirements, the most stringent shall apply.

#### **1.02 DESCRIPTION**

- A. In performing this work, all possible safeguards, precautions, and protective measures shall be utilized to prevent exposure of any individual to asbestos particulates.
- B. Asbestos containing materials have been identified at the project site. Material descriptions, locations and extents have been identified in the "Hazardous and Recyclable Materials Survey Report, HIARNG CSMS-1 Building 304 Complex and CERFP Building 301, TMK Number: (1) 3-1-042:006 (Por.), Fort Ruger, Honolulu, Hawaii", dated September 2015, and the drawings, including all findings, limitations, and exclusions therein.
- C. The asbestos abatement work includes removal of all asbestos containing materials present in the project buildings, as indicated in the survey report and the drawings, including:
  1. Removal and disposal of all interior and exterior window and door frame caulking present in concrete wall openings of Building 304, as indicated by the survey report and architectural drawings, to allow for the safe demolition of the structure. After removal, all exposed surfaces will be sealed using an encapsulant to prevent exposure.
  2. Removal and disposal of black asphaltic mastic beneath 9"x9" vinyl floor tile in select rooms of Building 304, as indicated by the survey report and architectural drawings.
  3. Removal and disposal of dark brown 9"x9" vinyl floor tile in select rooms of Building 304, as indicated by the survey report and architectural drawings.
  4. Removal and disposal of asbestolux fiber board ceilings and walls in select rooms of Building 304, as indicated by the survey report and architectural drawings.
  5. Removal and disposal of sink insulation in the kitchen of Building 304, as indicated by the survey report and architectural drawings.

6. Removal and disposal of window glazing from select windows in Building 304 and Building 304D (Carpenter Shop), as indicated by the survey report and architectural drawings.
  7. Removal and disposal of metal roofing panels with asbestos containing silver paint located beneath the white hydrostop roofing membrane, on Building 304, as indicated by the survey report and architectural drawings.
  8. Removal and disposal of asbestos containing metal fire and vault doors located in Building 304, Building 304A (Canvas Repair Shop), and Building 304D (Carpenter Shop), as indicated by the survey report and the architectural drawings.
- D. The Contractor shall review the survey report, and confirm all findings and quantities before submitting a bid. The Contractor is responsible to satisfy himself as to the total extent of all work, including, but not limited to, the quantity, location, extent, thickness, and accessibility of all asbestos containing material prior to submitting a bid.
- E. Unexpected Discovery of Asbestos: For any previously untested building components suspected to contain asbestos, notify the Engineer, who will have the option of ordering up to 9 bulk samples in accordance with 11 HAR 502-6, to be delivered to a laboratory accredited under the National Institute of Standards and Technology (NIST) National Voluntary Laboratory Accreditation Program (NVLAP) and analyzed by polarized light microscopy (PLM). If the asbestos content is less than 10 percent, as determined by a method other than point counting, the material will be assumed to be asbestos-containing or, at the Engineer's option, the asbestos content may be verified by point counting. Any additional, unexpected components identified as ACM that have been approved by the Engineer for removal shall be removed and will be paid for by an equitable adjustment to the contract price under the CONTRACT CLAUSE titled "changes." Sampling shall be conducted by a State of Hawaii-certified Building Inspector.

### **1.03 COORDINATION WITH OTHER SECTIONS**

- A. The Contractor is to coordinate all work with the Engineer, the Contractor's hired Qualified Consultant, and the work and requirements described in the following:
1. SECTION 13282 - LEAD CONTAINING PAINT CONTROL MEASURES for work and requirements involving lead containing/based paint.
  2. SECTION 13283 - OTHER HAZARDOUS MATERIALS for work and requirements involving other hazardous regulated materials.
  3. SECTION 13288 - TESTING AND AIR MONITORING for work and requirements involving air monitoring.

### **1.04 ABBREVIATIONS**

- A. ACM: Asbestos Containing Materials
- B. ANSI: American National Standards Institute, Inc.

- C. CFR: Code of Federal Regulations
- D. EL: Excursion Limit
- E. EPA: U.S. Environmental Protection Agency
- F. HAR: Hawaii Administrative Rules
- G. HDOD: State of Hawaii, Department of Defense
- H. HDOH: State of Hawaii, Department of Health
- I. HIARNG: State of Hawaii, Department of Defense, Army National Guard
- J. HEPA: High Efficiency Particulate Air
- K. HIOSH: State of Hawaii, Department of Labor and Industrial Relations, Division of Occupational Safety and Health
- L. MAP: Model Accreditation Plan
- M. NARA: U.S. National Archives and Records Administration
- N. NESHAP: National Emission Standards for Hazardous Air Pollutants
- O. NIOSH: National Institute for Occupational Safety and Health
- P. NIST: National Institute of Standards and Technology
- Q. NVLAP: National Voluntary Laboratory Accreditation Program
- R. OSHA: Occupational Safety and Health Administration
- S. PEL: Permissible Exposure Limit
- T. PLM: Polarizing Light Microscopy
- U. SHWB: Solid and Hazardous Waste Branch
- V. TSI: Thermal System Insulation
- W. TWA: Time Weighted Average
- X. UL: Underwriters Laboratory

#### **1.05 REFERENCES**

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE

ANSI Z41-1991 - American National Standard for Personal Protection - Protective Footwear

ANSI Z88.2 - 2015 American National Standard Practices for Respiratory Protection

ANSI Z87.1 - 2010 American National Standard for Occupation and Educational Personal Eye and Face Protection Devices

ANSI Z89.1 - 2014 American National Standard for Industrial Head Protection

ASTM INTERNATIONAL (ASTM)

ASTM D1331-89 (Reapproved 2001) Standard Test Methods for Surface and Interfacial Tension of Solutions of Surface-Active Agents

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH)

NIOSH 2003-154 (2003; 4th Ed; Supp. 3) NIOSH Manual of Analytical Methods

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)

EPA 340/1-90/018 (1990) Asbestos/NESHAP Regulated Asbestos Containing Materials Guidance

EPA 560/5-85-024 (1985) Guidance for Controlling Asbestos-Containing Materials in Buildings

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

29 CFR 1910.134      Respiratory Protection

29 CFR 1910.141      Sanitation

29 CFR 1910.147      Control of Hazardous Energy (Lock Out/Tag Out)

29 CFR 1926.1101      Asbestos

29 CFR 1926.32      Safety and Health Regulations for Construction - Definition

40 CFR 61      National Emission Standards for Hazardous Air Pollutants

40 CFR 763      Asbestos

42 CFR 84      Approval of Respiratory Protective Devices

49 CFR 107      Hazardous Materials Program Procedures

49 CFR 171	General Information, Regulations, and Definitions
49 CFR 172	Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements
49 CFR 173	Shippers - General Requirements for Shipments and Packagings

UNDERWRITERS LABORATORIES (UL)

UL 586 (2009) Standard for High-Efficiency Particulate, Air Filter Units

**1.06 DEFINITIONS**

- A. Amended Water: Water containing a wetting agent or surfactant with a surface tension of at least 29 dynes per square centimeter.
- B. Asbestos-Containing Material (ACM): Any materials containing more than one percent asbestos.
- C. Authorized Person: Any person authorized by the Contractor and required by work duties to be present in the regulated areas.
- D. Building Inspector: Individual who inspects buildings for asbestos and has EPA Model Accreditation Plan (MAP) "Building Inspector" training; accreditation required by 40 CFR 763, Subpart E, Appendix C, and has State of Hawaii certification as a "Building Inspector".
- E. Class I Asbestos Work: Activities defined by OSHA involving the removal of thermal system insulation (TSI) and surfacing ACM.
- F. Class II Asbestos Work: Activities defined by OSHA involving the removal of ACM which is not thermal system insulation or surfacing material. This includes, but is not limited to, the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastic. Certain "incidental" roofing materials such as mastic, flashing and cements when they are still intact are excluded from Class II asbestos work. Removal of small amounts of these materials which would fit into a glovebag may be classified as a Class III job.
- G. Class III Asbestos Work: Activities defined by OSHA that involve repair and maintenance operations, where ACM, including TSI and surfacing ACM, is likely to be disturbed. Operations may include drilling, abrading, cutting a hole, cable pulling, crawling through tunnels or attics and spaces above the ceiling, where asbestos is actively disturbed or asbestos-containing debris is actively disturbed.
- H. Class IV Asbestos Work: Maintenance and custodial construction activities during which employees contact but do not disturb ACM and activities to clean-up dust, waste and debris resulting from Class I, II, and III activities. This may include dusting surfaces where ACM waste and debris and accompanying dust exists and cleaning up loose ACM debris from TSI or surfacing ACM following construction.

- I. Clean Room: An uncontaminated room having facilities for the storage of employees' street clothing and uncontaminated materials and equipment.
- J. Contractor/Supervisor: Individual who supervises asbestos abatement work and has EPA Model Accreditation Plan "Contractor/Supervisor" training; and has State of Hawaii certification as a "Contractor/Supervisor".
- K. Critical Barrier: One or more layers of plastic sealed over all openings into a regulated area or any other similarly placed physical barrier sufficient to prevent airborne asbestos in a regulated area from migrating to an adjacent area.
- L. Decontamination Area: An enclosed area adjacent and connected to the regulated area and consisting of an equipment room, shower area, and clean room, which is used for the decontamination of workers, materials, and equipment that are contaminated with asbestos.
- M. Demolition: The wrecking or taking out of any load-supporting structural member and any related razing, removing, or stripping of asbestos products.
- N. Designated Competent Person: An employee designated by the Contractor as a person who is capable of identifying existing asbestos hazards as defined in 29 CFR 1926.1101. This person will carry the certifications and qualifications listed in paragraph 1.08A.2, "Designated Competent Person."
- O. Disposal Bag: A 6 mil thick, leak-tight plastic bag, pre-labeled in accordance with 29 CFR 1926.1101, used for transporting asbestos waste from containment to disposal site.
- P. Disturbance: Activities that disrupt the matrix of ACM, crumble or pulverize ACM, or generate visible debris from ACM. Disturbance includes cutting away small amounts of ACM, no greater than the amount which can be contained in 1 standard sized glovebag or waste bag, not larger than 60 inches in length and width in order to access a building component.
- Q. Equipment Room or Area: An area adjacent to the regulated area used for the decontamination of employees and their equipment.
- R. Fiber: A fibrous particulate, 5 micrometers or longer, with a length to width ratio of at least 3 to 1.
- S. Friable ACM: A term defined in 40 CFR 61, Subpart M and EPA 340/1-90/018 meaning any material which contains more than 1 percent asbestos, as determined using the method specified in 40 CFR 763, Polarized Light Microscopy (PLM), that when dry, can be crumbled, pulverized, or reduced to powder by hand pressure.
- T. Glovebag: Not more than a 60 by 60 inch impervious plastic bag-like enclosure affixed around an asbestos-containing material, with glove-like appendages through which material and tools may be handled.



- U. High-Efficiency Particulate Air (HEPA) Filter: A filter capable of trapping and retaining at least 99.97 percent of all mono-dispersed particles of 0.3 micrometers in diameter.
- V. Intact: ACM which has not crumbled, been pulverized, or otherwise deteriorated so that the asbestos is no longer likely to be bound with its matrix. Removal of "intact" asphaltic, resinous, cementitious products does not necessarily render the ACM non-intact simply by separation into smaller pieces.
- W. Model Accreditation Plan (MAP): EPA training accreditation requirements for persons who work with asbestos as specified in 40 CFR 763.
- X. Negative Initial Exposure Assessment: A demonstration by the Contractor to show that employee exposure during an operation is expected to be consistently below the OSHA Permissible Exposure Limits (PELs).
- Y. Nonfriable ACM: A NESHAP term defined in 40 CFR 61, Subpart M and EPA 340/1-90/018 meaning any material containing more than 1 percent asbestos that, when dry, cannot be crumbled, pulverized or reduced to powder by hand pressure.
- Z. Nonfriable ACM (Category I): A NESHAP term defined in 40 CFR 61, Subpart E and EPA 340/1-90/018 meaning asbestos-containing packings, gaskets, resilient floor covering, and asphalt roofing products containing more than 1 percent asbestos.
- AA. Nonfriable ACM (Category II): A NESHAP term defined in 40 CFR 61, Subpart E and EPA 340/1-90/018 meaning any material, excluding Category I nonfriable ACM, containing more than 1 percent asbestos.
- BB. Permissible Exposure Limits (PELs):
  - 1. PEL-Time Weighted Average (TWA): Concentration of asbestos not in excess of 0.1 fibers per cubic centimeter of air (f/cc) as an 8 hour time weighted average (TWA).
  - 2. PEL-Excursion Limit: An airborne concentration of asbestos not in excess of 1.0 f/cc of air as averaged over a sampling period of 30 minutes.
- CC. Project Designer: Person who determines how asbestos abatement work should be conducted; has EPA Model Accreditation Plan (MAP) "Project Designer" training; accreditation required by 40 CFR 763, Subpart E, Appendix C; and has State of Hawaii certification as a "Project Designer".
- DD. Project Monitor: An individual, certified by the State of Hawaii Department of Health, to perform asbestos abatement project monitoring duties, including, but not limited to, area air monitoring, project enclosure inspection, removal method inspections and clearance inspections; has HDOH "Project Monitor" certification, as described in 11 HAR 504.
- EE. Qualified Consultant: A third party independent consultant hired by the Contractor who will produce the Contractor's abatement work plan; perform air monitoring and inspection during abatement work; assist the Contractor's Competent Person in implementing and ensuring that safety, health, and specification requirements are

complied with during the performance of all work; and shall have both “stop work authority” and authority to initiate engineering controls. The Qualified Consultant will be completely independent from the Contractor according to federal, state, or local regulations; that is, will not be a Contractor’s employee or be an employee or principal of a firm in a business relationship with the Contractor negating such independent status. The Qualified Consultant will be accredited as a State of Hawaii Department of Health accredited Contractor/Supervisor, Project Designer, and Project Monitor with at least 5 years of practical onsite asbestos abatement project monitoring experience. The Qualified Consultant will also be certified in the practice of industrial hygiene as determined and documented by the American Board of Industrial Hygiene (ABIH).

FF. Regulated Area: An OSHA term defined in 29 CFR 1926.1101 meaning an area established by the Contractor to demarcate areas where Class I, II, and III asbestos work is conducted; also any adjoining area where debris and waste from such asbestos work accumulate; and an area within which airborne concentrations of asbestos exceed, or there is a reasonable possibility they may exceed, the permissible exposure limit.

GG. Removal: All operations where ACM is taken out or stripped from structures or substrates, including demolition operations.

HH. Thermal System Insulation (TSI) ACM: ACM which contains more than 1% asbestos and is applied to pipes, fittings, boilers, breeching, tanks, ducts, or other interior structural components to prevent heat loss or gain or water condensation.

II. Time Weighted Average (TWA): The average exposure to any hazardous contaminant in the workplace on a basis of an 8 hour per day or 40 hour per week work program.

JJ. Worker: Individual (not designated as the Competent Person or a supervisor) who performs asbestos work and has completed asbestos worker training required by 29 CFR 1926.1101, to include EPA Model Accreditation Plan (MAP) "Worker" training, and accreditation by the State of Hawaii.

#### **1.07 GENERAL REQUIREMENTS**

- A. The Contractor and the Contractor’s Designated Competent Person, Project Supervisor, and Qualified Consultant shall meet with the Engineer prior to beginning work at a safety preconstruction conference to discuss the details of the Contractor’s submitted Asbestos Hazard Abatement Plan (AHAP) were discrepancies and/or deficiencies will be discussed. Onsite works will not begin until the AHAP has been accepted.
- B. The Contractor acknowledges that he alone is responsible for the instruction and for enforcing personnel protection requirements and that these specifications provide only a minimum acceptable standard with regards to handling and disposing of asbestos containing materials and asbestos waste. The Contractor is solely responsible for the safe execution of asbestos removal.
- C. The Contractor shall examine, and have at all times in his possession at his office and in view at each job site office, current issues of the following publications:

1. 11 HAR 501 - Asbestos Requirements
  2. 11 HAR 502 - Asbestos Containing Materials in Schools
  3. 11 HAR 504 - Asbestos Abatement Certification Program
  4. 12 HAR 145.1 - Asbestos
  5. 29 CFR 1910.134 - Respiratory Protection
  6. 29 CFR 1910.145 - Specifications for accident prevention signs and tags
  7. 29 CFR 1910.1020 - Access to Employee Exposure and Medical Records
  8. 29 CFR 1910.1200 - Hazard Communication
  9. 29 CFR 1926.1101 - Asbestos
  10. 40 CFR 61, Subpart M - National Emissions Standards for Hazardous Air Pollutants
  11. 40 CFR 763, Subpart E - Asbestos-Containing Materials in Schools
  12. ANSI Z88.2-80 - Practices for Respiratory Protection
  13. EPA 560/5-85-024 - Guidance for Controlling Asbestos-Containing Materials in Buildings
- D. Ignorance of the above requirements and any applicable State and City and County regulations resulting in additional cost to the Contractor shall be solely the Contractor's responsibility.
- E. All regulations shall govern over these specifications, except that any more stringent specification or specification providing greater protection against asbestos exposure, injury, loss, or liability shall control to the extent permitted by regulation. Any question regarding conflict or inconsistency between this specification and the regulations should be directed to the Engineer.
- F. Whenever approval of the Engineer is required prior to proceeding with other work, the following shall be complied with:
1. The Contractor shall allow the Engineer 72 hours notification to respond to the request for inspection.
  2. The Contractor shall designate one person (either a foreman or superintendent) who will be authorized to request inspections from the Engineer. The name of the designated person shall be submitted in writing to the Engineer prior to commencing with the work. Requests from any other person will not be considered an official request.

#### **1.08 QUALITY ASSURANCE**

- A. Project personnel and entities will have the following qualifications

1. Asbestos Abatement Contractor: Certified by HDOH as an asbestos entity allowed to perform abatement activities. Will also possess a DCCA C-19 classification license.
2. Designated Competent Person: Qualified in accordance with 29 CFR 1926.32 and 29 CFR 1926.1101, has HDOH Contractor/Supervisor training certification, and is experienced in the administration and supervision of asbestos abatement projects. The Designated Competent person shall be responsible for compliance with applicable federal, state, and local requirements, the Contractor's Asbestos Hazard Abatement Plan, and these specifications. The person will have a minimum of 2 years of on-the-job asbestos abatement experience relevant to OSHA competent person requirements. The Designated Competent Person will be onsite at all times during the performance of this project.
3. Qualified Consultant: The Qualified Consultant will be a person who is board certified in the practice of industrial hygiene as determined and documented by the American Board of Industrial Hygiene (ABIH). Additionally, the Qualified Consultant will have HDOH Asbestos Contractor/Supervisor, Project Designer, and Project Monitor certification. The Qualified Consultant will be completely independent from the Contractor according to federal, State, and/or local regulations; that is, the Qualified Consultant will not be a Contractor's employee or be an employee or principal of a firm in a business relationship with the Contractor, negating such independent status. The Qualified Consultant will visit the site at least once per week for the duration of asbestos activities and will be available for emergencies. The Qualified Consultant will be directly responsible for any industrial hygienists (IH) or industrial hygiene technicians (IHT) that may be assisting in performing onsite tasks.
4. IH and IHTs: IHs and IHTs will be individuals under the direct supervision of the Qualified Consultant and will have HDOH Asbestos Project Monitor certification. Additionally, these individuals will have a minimum of 2 years of practical onsite asbestos abatement monitoring experience.
5. Asbestos Abatement Workers: Asbestos Abatement Workers will meet the requirements contained in 29 CFR 1926.1101, 40 CFR 61, Subpart M, 11 HAR 501 through 504, and other applicable federal, State, and local requirements.
6. Independent Testing Laboratory: The testing laboratory will be completely independent from the Contractor as recognized by federal, State, or local regulations. The laboratory must be capable of the following analyses:
  - a. Phase Contrast Microscopy (PCM): The laboratory will be fully equipped and proficient in conducting PCM analysis of airborne samples using the methods specified by 29 CFR 1926.1101, OSHA method ID-160
  - b. Polarized Light Microscopy (PLM): The laboratory will be fully equipped and proficient in conducting PLM analyses of suspect ACM bulk samples in accordance with 40 CFR 763, Subpart E, Appendix E. The laboratory will also be currently accredited by NIST under the NVLAP for bulk asbestos analysis and will use analysts with demonstrated proficiency to conduct PLM analyses.

- c. Transmission Electron Microscopy (TEM): The laboratory will be fully equipped and proficient in conducting TEM analysis of airborne samples using the mandatory method specified by 40 CFR 763, Subpart E, Appendix E. The laboratory will also be currently accredited by NIST under the NVLAP for airborne sample analysis of asbestos by TEM. The laboratory will use analysts with demonstrated proficiency under NVLAP.
  - d. PCM/TEM: The laboratory will be fully equipped and each analyst performing the work will be proficient in conducting PCM and TEM analysis of airborne samples using NIOSH 2003-154 Method 7400 (PCM) and NIOSH 2003-154 Method 7402 (TEM confirmation of asbestos content of PCM results) from the same filter.
7. Disposal Facility, Transporter: The landfill accepting the asbestos waste must be certified by the State of Hawaii, Department of Solid and Hazardous Waste Branch (SHWB) to accept such waste. Signed agreements between the Contractor (including subcontractors and transporters) and the asbestos waste disposal facility to accept and dispose of all asbestos containing waste will be included as a part of the pre-construction submittal package. The Contractor and transports will meet the DOT requirements of 49 CFR 171, 49 CFR 172, and 49 CFR 173 as well as registration requirements of 49 CFR 107 and other applicable State or local requirements. The disposal facility will meet the requirements of 40 CFR 61, Section 154 or 155, as required in 40 CFR 61 150(b), and other applicable State or local requirements.

#### **1.09 SECURITY**

- A. A locked security area will be provided for each regulated area. A log book will be kept, documenting entry into and out of the regulated area. The log book will record the following information:
  - 1. Date of visit/worker entry
  - 2. Visitor's/Worker's name, employer, business address, and telephone number
  - 3. Time of entry and exit from work area
  - 4. Purpose of visit
  - 5. Type of protective clothing and respirator worn
  - 6. All initial visits must be accompanied with a signed certificate of release acknowledging the presence of asbestos in the area to be entered, filed with the Contractor.
- B. Entry into regulated areas will only be by personnel authorized by the Contractor and the Engineer. Personnel authorized to enter regulated areas shall be trained, medically evaluated, and wear the required personal protective equipment.
- C. Regulated Areas: All Class I, II, and III asbestos work shall be conducted within regulated areas. The regulated area shall be demarcated to minimize the number of persons within the area and to protect persons outside the area from exposure to airborne asbestos. Access to regulated areas will be controlled to ensure that only

authorized personnel enter. Verification that Contractor required medical surveillance, training and respiratory protection program requirements have been met by all personnel entering regulated areas will be obtained prior to entrance.

- D. Warning Signs and Tape: Warning signs and tape will be provided at the regulated boundaries and entrances to regulated areas. Signs will be located at all entrances to regulated areas to allow personnel to read the signs and take the necessary protective steps required before entering. Warning signs will display the following legend in the lower panel, in accordance with 11 HAR 501-7:

DANGER  
ASBESTOS  
MAY CAUSE CANCER  
CAUSES DAMAGE TO LUNGS  
AUTHORIZED PERSONNEL ONLY

- E. Warning Labels: Warning labels shall be affixed to all asbestos disposal containers, asbestos materials, scrap, waste debris, and other products contaminated with asbestos. Containers with preprinted warning labels conforming to the requirements are acceptable.

#### **1.10 MEDICAL SURVEILLANCE REQUIREMENTS**

- A. Medical surveillance requirements shall conform to 29 CFR 1926.1101. Asbestos workers shall be enrolled in a medical surveillance program that meets 29 CFR 1926.1101, Subpart M requirements and other pertinent State or local requirements. This requirement will have been satisfied within the last 12 months.
- B. Respiratory Protection Program: The Contractor will establish in writing, and implement a respiratory protection program in accordance with 29 CFR 1926.1101 and 29 CFR 1910.134. The Contractor's Qualified Consultant will establish minimum respiratory protection requirements based on measured or anticipated levels of airborne asbestos fiber concentrations.
- C. Respirator Fit Testing: The Contractor shall conduct a qualitative or quantitative fit test conforming to Appendix A of 29 CFR 1910.134 for each worker required to wear a respirator, and authorized visitors who enter a regulated area where respirators are required to be worn. A respirator fit test shall be performed prior to initially wearing a respirator and every 12 months thereafter. If physical changes develop that will affect the fit, a new fit test shall be performed. Function fit checks shall be performed each time a respirator is put on and in accordance with the manufacturer's recommendation.
- D. Respirator Selection and Use Requirements: Provide respirators and ensure that they are used as required by 29 CFR 1926.1101 and in accordance with the manufacturer's recommendations. Respirators will be approved by NIOSH under the provisions of 42 CFR 84, for use in environments containing airborne asbestos fibers. The initial respirator selection and the decisions regarding upgrading or downgrading of respirator type shall be made by the Contractor's Qualified Consultant based on the measured or anticipated airborne asbestos fiber concentrations to be encountered.



- E. **Personal Protective Equipment:** The Engineer and authorized visitors will each receive one complete set of personal protective equipment for entry into the regulated area. The Engineer and authorized visitors will be provided with training equivalent to that provided to the Contractor's employees in the selection, fitting, and use of personal protective equipment and the site safety and health requirements. The Contractor will provide workers with personal protective clothing and ensure that it is worn properly. The Qualified Consultant and the Designated Competent Person shall select and approve all of the required personal protective clothing and equipment.
- F. **Whole Body Protection:** Personnel exposed to or having the potential to be exposed to airborne concentrations of asbestos that exceed the PELs, or for all OSHA Classes of work for which a required negative exposure assessment is not produced, shall be provided with whole body protection and such protection shall be worn properly. Disposable whole body protection shall be disposed of as asbestos contaminated waste upon exiting from the regulated area. Reusable whole body protection worn shall be either disposed of as asbestos contaminated waste upon exiting from the regulated area or be properly laundered in accordance with 29 CFR 1926.1101. The Contractor's Designated Competent Person, in consultation with the Qualified Consultant, has the authority to take immediate action to upgrade or downgrade whole body protection when there is an immediate danger to health and safety of the wearer.

#### **1.11 HYGIENE**

- A. Establish a decontamination area for the decontamination of employees, material, and equipment. Ensure that employees enter and exit the regulated area through the decontamination area.
- B. **3-Stage Decontamination Area:** A 3-stage decontamination area shall have an equipment room and a clean room separated by a shower that complies with 29 CFR 1910.141, unless the Contractor can demonstrate that such facilities are not feasible. Equipment and surfaces of containers filled with ACM shall be cleaned prior to removing them from the equipment room or area. Two separate lockers shall be provided for each asbestos worker, one in the equipment room and one in the clean room. Wastewater shall be collected and filtered to remove asbestos contamination. Filters and residue shall be disposed of as asbestos contaminated material. Wastewater filters shall be installed in series with the first stage pore size of 20 microns and the second stage pore size of 5 microns. The floor of the decontamination unit's clean room shall be kept dry and clean at all times. Proper housekeeping and hygiene requirements shall be maintained. Soap and towels shall be provided for showering, washing, and drying. Any cloth towels provided shall be disposed of as ACM waste or shall be laundered in accordance with 29 CFR 1926.1101.
- C. **Load-Out Unit:** A temporary load-out unit that is adjacent and connected to the regulated area shall be provided. The load-out unit shall be attached in a leak-tight manner to each regulated area.
- D. **Single Stage Decontamination Area:** A single state decontamination area (equipment room/area) shall be provided for Class I work involving less than 25 feet or 10 square feet of TSI or surfacing ACM, and for Class II and Class III asbestos work

operations where exposures exceed the PELs or where there is no negative exposure assessment. The equipment room or area shall be adjacent to the regulated area for the decontamination of employees, material, and their equipment which could be contaminated with asbestos. The area shall be covered by an impermeable drop cloth on the floor or horizontal working surface. The area must be of sufficient size to accommodate cleaning of equipment and removing personal protective equipment without spreading contamination beyond the area.

- E. Decontamination Area Exit Procedures: Ensure that the following procedures are followed:
  - 1. Before leaving the regulated area, remove all gross contamination and debris from work clothing using a HEPA vacuum.
  - 2. Employees shall remove their protective clothing in the equipment room and deposit the clothing in labeled impermeable bags or containers for disposal and/or laundering.
  - 3. Employees shall not remove their respirators until showering.
  - 4. Employees shall shower prior to entering the clean room.
  - 5. If a shower has not been located between the equipment room and the clean room, or the work is performed outdoors, ensure that employees engaged in Class I asbestos jobs:
    - a. Remove asbestos contamination from their work suits in the equipment room or decontamination area using a HEPA vacuum before proceeding to a shower that is not adjacent to the work area; or
    - b. Remove their contaminated work suits in the equipment room, without cleaning worksuits, and proceed to a shower that is not adjacent to the work area.
  - 6. Smoking: Smoking, if allowed by the Contractor, shall only be permitted in designated areas approved by the Engineer.

#### **1.12 TRAINING PROGRAM**

- A. Establish a written training program in accordance with 40 CFR 763, 11 HAR 504, and OSHA requirements listed in 29 CFR 1926.1101 (k)(9). Contractor employees will complete the required training for the type of work they are to perform and such training will be documented and provided to the Engineer.
  - 1. Prior to commencement of work, the Contractor's Designated Competent Person and Qualified Consultant shall instruct each worker about:
    - a. The hazards and health effects of the specific types of ACM to be abated; and
    - b. The content and requirements of the Contractor's AHAP and site-specific safety and health precautions.
- B. The Engineer and any authorized visitors entering regulated areas will be given training equivalent to that provided to Contractor employees by the Contractor's Designated Competent Person and Qualified Consultant regarding:
  - 1. The selection, fitting, and use of personal protective equipment

2. Specific site safety and health requirements pertaining to the area being visited/inspected

### **1.13 SUBMITTALS PRIOR TO WORK**

- A. Submit in accordance with SECTION 01330 - SUBMITTAL PROCEDURES.
- B. Final payment will not be made until copies of all submittals have been furnished to and accepted by the Engineer. Submit 4 copies of the submittal package which will include the items listed below:
- C. Qualifications
  1. Asbestos abatement contractor certification:
    - a. HDOH asbestos entity certification
    - b. DCCA C-19 asbestos classification license
  2. Designated Competent Person Qualifications:
    - a. HDOH asbestos Contractor/Supervisor certification
    - b. Most recent asbestos Contractor/Supervisor refresher training certificate
    - c. Evidence of 2 years of on-the-job asbestos abatement experience
    - d. Most recent medical surveillance records
    - e. Most recent respirator fit test results
    - f. Signed "Certificate of Worker Acknowledgement" form
  3. Project and Other Supervisors:
    - a. HDOH asbestos Contractor/Supervisor certification
    - b. Most recent HDOH asbestos Contractor/Supervisor refresher training certificates
    - c. Project Supervisor: Evidence of 2 years of on-the-job asbestos abatement experience
    - d. Other Supervisors: Evidence of 1 year of on-the-job asbestos abatement experience commensurate with the responsibilities they will have on the project
    - e. Signed "Certificate of Worker Acknowledgement" forms
  4. Asbestos Worker Qualifications
    - a. HDOH asbestos worker certification
    - b. Most recent HDOH refresher asbestos Worker training course certificate
    - c. Most recent medical surveillance records

- d. Most recent respirator fit test results
  - e. Signed "Certificate of Worker Acknowledgement" forms
5. Qualified Consultant Qualifications:
- a. Qualified Consultant's resume documenting at least 2 years of comprehensive experience in planning and overseeing asbestos abatement activities.
  - b. ABIH Industrial Hygienist certification (CIH)
  - c. HDOH asbestos Contractor/Supervisor, Project Designer, and Project Monitor certification
  - d. Most recent HDOH refresher asbestos Contractor/Supervisor, Project Designer, and Project Monitor training certificates
6. IH and IHT Technicians Qualifications:
- a. Resumes of each IH and IHT expected to assist the Qualified Consultant, documenting at least 2 years of practical onsite asbestos abatement experience
  - b. HDOH asbestos Project Monitor certification
  - c. Most recent HDOH refresher asbestos Project Monitor training course certificate
7. Laboratory:
- a. Accreditation under NVLAP for PLM analysis
  - b. Accreditation under NVLAP for TEM analysis
- D. Asbestos Hazard Abatement Plan: The AHAP must be produced by the Contractor's Qualified Consultant and be approved by the Engineer prior to the commencement of work. The AHAP will include, but not be limited to, the following elements:
- 1. Detailed Shop Drawings depicting:
    - a. Extent of the abatement work to be performed
    - b. Security provisions in and around the project area
    - c. Entrances and exits to the work place
    - d. Location and construction of all airtight barriers
    - e. Location and construction of worker decontamination units (3-stage or single stage)
    - f. Locations of local exhaust systems
  - 2. Initial exposure assessment in accordance with 29 CFR 1926.1101.

3. Organization chart showing the Contractor's staff organization chain-of-command and reporting relationship with all subcontractors, the Contractor's Designated Competent Person, Qualified Consultant, and IH and IHTs.
4. A written description of the following:
  - a. Procedures for the preparation of the work area(s).
  - b. Personal protective equipment, including respiratory protection and protective clothing, to be employed during each step of the abatement process.
  - c. Contractor's Respiratory Protection Program
  - d. Level of supervision.
  - e. Abatement method, including containment and control procedures.
  - f. A detailed description of the method to be employed in order to control the spread of ACM wastes and airborne fibers.
  - g. Type of wetting agent and asbestos encapsulant to be used.
  - h. Storage and disposal procedures and plan.
  - i. Decontamination procedures for all personnel who may be exposed to asbestos.
  - j. Required air monitoring procedures and sampling protocol proposed.
  - k. Procedures for final clean-up and clearance.
  - l. A sequence of work and performance schedule in coordination with other trades.
  - m. Bulk sampling and analytical methods
  - n. The security procedures to be used for all regulated areas
  - o. The report shall be signed by the Contractor, the Contractor's Designated Competent Person, Qualified Consultant, and the principals of all subcontractors to be used. The following statement must be included in the report:

"By signing this report, I certify that the personnel I am responsible for during the course of this project fully understand the contents of 29 CFR 1926.1101, 40 CFR 61, Subpart M, and the federal, state, and local requirements for those asbestos abatement activities that they will be involved in."

- E. Emergency Planning Procedures: Submit an emergency plan prior to abatement initiation:
1. Emergency procedures shall be in written form and prominently posted at the entrance to the job site.
  2. Emergency planning shall include notification of police, fire, and emergency medical personnel of planned abatement activities work schedule, and layout of the work area, particularly barriers that may affect response capabilities.
  3. Emergency planning shall include, but not be limited to, considerations of fire, explosion, toxic atmospheres, electrical hazards, slips, trips, and falls, and heat related injury. Procedures developed and training devised will be provided within the Emergency Plan.
- F. Documentation from Physician: Submit documentation from a physician that all employees or agents who may be exposed to airborne asbestos have been provided with an opportunity to be medically monitored to determine whether they are physically capable of working while wearing the respirator required without suffering adverse health effects. In addition, document that all individuals permitted within regulated areas have received medical monitoring or had such monitoring made available to them as required in 29 CFR 1926.1101, and 12 HAR 145.1. The Contractor must be aware of and provide information to the examining physician about unusual conditions in the workplace environment (e.g. high temperatures, high humidity, chemical contaminants) that may impact on the employee's ability to perform work activities. The Contractor shall keep and make available to all affected individuals a record and the results of such examinations.
- G. Notices
1. The amount of friable asbestos to be removed requires HDOH notification. Therefore, complete the HDOH Notification of Demolition and Renovation form, in accordance with 40 CFR 61.145, at least 10 business days prior to the proposed start of asbestos abatement activities. Submit the completed form to

Noise, Radiation, and Indoor Air Quality Branch  
Asbestos Abatement Office  
State Department of Health  
P.O. Box 3378  
Honolulu, Hawaii 96801-9984

and include a copy of the completed notification in the submittal package.

- H. Permits and Licenses: Copies of all permits, licenses, and arrangements for removal, transportation, and disposal of asbestos-containing materials no later than 20 consecutive business days from notice of award unless otherwise instructed, in writing, by the Engineer.
- I. Insurance: Proof of insurance for Workman's Compensation and General Liability which covers asbestos, lead, and pollution.
- J. Local Exhaust System: Local exhaust units must conform to 29 CFR 1926.1101. Filters on local exhaust system equipment must conform to UL 586. Filters must be



UL labeled. Submit pressure differential recordings and Manufacturer's certifications for:

1. Vacuums
  2. Water filtration equipment
  3. Ventilation equipment
  4. Other equipment required to contain airborne fibers
- K. Rental Equipment: When rental equipment is to be used in abatement areas or to transport asbestos contaminated waste, a written notification concerning intended use of the rental equipment must be provided to the rental agency with a copy of the notification included in this submittal package.

#### **1.14 SUBMITTALS DURING CONSTRUCTION**

- A. Submit in accordance with SECTION 01330 - SUBMITTAL PROCEDURES.
- B. Submit copies of weigh bills and delivery tickets to the Engineer for all asbestos waste removed from the site during the progress of the work. Furnish scale tickets for each load of ACM weighed and certified. These tickets shall include tare weight; identification mark for each vehicle weighed; and date, time, and location of loading and unloading. Tickets shall be furnished at the point and time individual trucks arrive at the worksite. A master log of all vehicle loading shall be furnished for each day of loading operations.

#### **1.15 SUBMITTALS AFTER WORK IS COMPLETED**

- A. Submit in accordance with SECTION 01330 - SUBMITTAL PROCEDURES.
- B. At the completion of the work, a final report shall be prepared by the Contractor for acceptance by the Engineer prior to final statement and payment. Four copies of the report shall be submitted and shall include the items listed below.
  1. Asbestos Abatement Work Summary: The summary shall include the project name, Abatement Contractor, Abatement Contractor license number, notification form to the Hawaii Department of Health and EPA, work duration, material removed, respiratory protection employed and total quantity of waste generated.
  2. Air Monitoring Results: Submit all documentation regarding initial exposure assessments, negative exposure assessments, employee exposure air sample results, area air monitoring sample results, and the results of the most current PAT round results for the laboratory conducting all air sample analysis.
  3. Asbestos Waste Disposal Documentation: Submit copies of weigh bills, delivery tickets and all master logs of the loading and unloading of asbestos waste generated from the project. Discrepancies between weigh bills, delivery tickets and master logs provided in the final report with those provided during the progress of the work (paragraph 1.14) to the Engineer must be addressed at this time.
  4. A copy of the visitor/worker entry log book.

5. Clearance certifications received from the Qualified Consultant.
6. A statement signed by the Contractor and the Qualified Consultant that all asbestos abatement and disposal was completed in compliance with this specification, applicable federal, state, and local regulations, and the approved AHAP.

## **PART 2 - PRODUCTS**

### **2.01 EXPENDABLE SUPPLIES**

- A. Glovebag: Provide glovebags as described in 29 CFR 1926.1101. The glovebag assembly must be 6 mil thick plastic, prefabricated, and seamless at the bottom, with a preprinted OSHA warning label.
- B. Duct Tape: Provide industrial grade duct tape of appropriate widths suitable for bonding sheet plastic and disposable containers. Tape shall be capable of sealing joints of sheet plastic to finished or unfinished surfaces of dissimilar materials and capable of adhering under both dry and wet conditions, including the use of amended water.
- C. Disposable Containers: Leak-tight (defined as solids, liquids, or dust that cannot escape or spill out) disposable containers shall be provided for ACM wastes as required by 29 CFR 1926.1101. Disposable containers shall be transparent.
- D. Sheet Plastic: Sheet plastic must be polyethylene of 6-mil minimum thickness and must be provided in the largest sheet size necessary to minimize seams and conform to ASTM D 4397.
- E. Surfactant (Wetting Agent): 50 percent polyoxyethylene ester and 50 percent polyoxyethylene ether, or equivalent, and shall be mixed with water to provide a concentration of one ounce, or more as needed, of surfactant to 5 gallons of water. (An equivalent surfactant shall be understood to mean material with a surface tension of 29 dynes/cm as tested in its properly mixed concentration, using ASTM method D 1331-89 (R 2001), "Surface and Interfacial Tension of Solutions of Surface-Active Agents.")
- F. Mastic Removal Solvent: Mastic removing solvent must be nonflammable and must not contain methylene chloride, glycol ether, or halogenated hydrocarbons. Solvents used on site must have a flash point greater than 140 degrees Fahrenheit.
- G. Leak-tight Wrapping: Two layers of 6-mil minimum thickness polyethylene sheet stock must be used for the containment of removed asbestos-containing components or materials such as reactor vessels, large tanks, boilers, insulated pipe segments, fire doors, and other materials too large to be placed in disposable bags. Upon placement of the ACM component or material, each layer shall be individually leak-tight sealed with duct tape.
- H. Viewing Inspection Window: A minimum of 1 clear, 1/8 inch thick, acrylic sheet, 18 inches by 24 inches, shall be installed as a viewing inspection window at eye level

on a wall in each containment enclosure. The windows shall be sealed leak-tight with industrial grade duct tape.

- I. Post-Removal Encapsulation: The encapsulant shall be applied to surfaces from which asbestos-containing material has been removed to control the possible release of residual fibers, either by creating a membrane over the surface (bridging encapsulant) or by penetrating in to the material and binding its components (penetrating encapsulant) and shall be compatible with the existing finishes including wood, metal, and plastic.
- J. Other Materials: Provide all other materials, such as, but not limited to lumber, plywood, nails, fasteners, metal studs, hardware, foam sealants, and caulking which may be required to properly prepare and complete this project.

## **2.02 TOOLS AND EQUIPMENT**

- A. General: Provide suitable tools for the asbestos abatement procedures. Power tools shall not be used to remove ACM unless the tool is equipped with an effective, integral HEPA filtered exhaust ventilation capture and collection system. Reusable tools shall be thoroughly decontaminated prior to being removed from regulated areas.
- B. Paint/Encapsulant Sprayer: Airless type.
- C. Vacuums: Vacuums shall be equipped with HEPA filters, of sufficient capacity and necessary capture velocity at the nozzle or nozzle attachment to efficiently collect, transport, and retain the ACM waste material.
- D. Water Sprayer: Airless or a pressure sprayer for amended water application, as applicable.
- E. Air Monitoring Equipment: The Contractor's Qualified Consultant shall approve air monitoring equipment. The equipment shall include, but shall not be limited to:
  - 1. High-volume sampling pumps that can be calibrated and operated at a constant airflow up to 16 liters per minute.
  - 2. Low-volume, battery powered, body-attachable, portable personal pumps that can be calibrated to a constant airflow up to approximately 3.5 liters per minute, and a self-contained, rechargeable power pack capable of sustaining the calibrated flow rate for a minimum of 10 hours. The pumps shall also be equipped with an automatic flow control unit which shall maintain a constant flow even as filter resistance increases due to accumulation of fiber and debris on the filter surface.
  - 3. Single-use, standard 25-mm diameter, 0.8-micron pore size, mixed cellulose ester (MCE) membrane filters and open-faced cassettes fitted with 50 mm electrically conductive extension cowl, and shrink bands for personal air sampling.
  - 4. Single-use, standard 25-mm diameter, 0.45-micron pore size, MCE filters and open-faced cassettes fitted with 50 mm electrically conductive extension cowl, and shrink bands when conducting environmental area sampling using NIOSH

2003-154 Methods 7400 and 7402 (and the TEM method specified in 40 CFR 763 if required).

5. A flow calibrator capable of calibration to within plus or minus 2 percent of reading over a temperature range of minus 4 to plus 140 degrees Fahrenheit and traceable to a NIST primary standard.

### **2.03 PERSONNEL PROTECTION REQUIREMENTS**

- A. Provide workers with sufficient sets of disposable protective full body clothing consisting of material impenetrable by asbestos fibers and of the proper size for each individual to accommodate movement without tearing. Such clothing shall consist of full body coveralls, footwear, gloves and headgear. Provide hard hats as required by applicable safety regulations. Disposable clothing shall not be allowed to accumulate and shall be disposed of as asbestos contaminated waste. Protective clothing shall be worn by all personnel within the work area from the start of the removal until the removal of all protective barriers (including enclosures) surrounding the regulated area.
- B. Insulated non-skid rubber boots or an approved equal shall be required for all individuals entering the work area. Protective full body clothing without elastic at sleeves and legs shall require separate elastic or taped protection to seal the opening. Visitors shall be provided full body protective clothing.
- C. All electrical systems used for asbestos abatement operations shall as a minimum be protected with "Ground Fault Circuit Interrupters" (GFCIs) selected and installed in strict accordance with the manufacturer's instructions, the National Electric Code and all other pertinent codes.
- D. Additional safety equipment (e.g. hardhats meeting the requirements of ANSI Z-89.1-2014, eye protection meeting the requirements of ANSI Z87.1-2010, safety shoes meeting the requirements of ANSI Z41-1991, disposable PVC gloves), as necessary, shall be provided to all workers and authorized visitors.

## **PART 3 - EXECUTION**

### **3.01 GENERAL REQUIREMENTS**

- A. Asbestos removal shall be performed in the areas indicated in the Project Drawings. Use the engineering controls and work practices required in 29 CFR 1926.1101 (g) in all operations regardless of the levels of exposure. Personnel shall wear and utilize protective clothing and equipment. Do not permit eating, smoking, drinking, chewing, or applying of cosmetics in regulated areas. Personnel of other trades shall not be exposed at any time to airborne concentrations of asbestos. Power to the regulated area must be locked-out and tagged as necessary, in accordance with 29 CFR 1910.147, and temporary electrical service with GFCIs must be provided as needed. Temporary electrical service shall be disconnected when necessary for wet removal.
- B. Stop Work: Stop abatement work in the regulated area immediately when the airborne total fiber concentration:

1. Equals or exceeds 0.01 fibers per cubic centimeter (f/cc) or the pre-abatement concentration, whichever is greater, outside the regulated area; or
2. Equals or exceeds 1.0 f/cc inside the regulated area.

Correct the condition to the satisfaction both the Engineer and the Qualified Consultant, including visual inspection and air sampling. Work shall only resume upon notification by the Engineer with consultation from the Qualified Consultant. All corrective actions must be documented.

### **3.02 PROTECTION OF ADJACENT WORK OR AREAS TO REMAIN**

- A. Perform asbestos abatement without damage to or contamination of adjacent work or area. Where such work or area is damaged or contaminated, it shall be restored to its original condition or decontaminated at no expense to the State. When spills occur, work must immediately stop in all affected areas and the spill must be cleaned. When satisfactory visual inspection and air sampling analysis results are obtained and have been evaluated by the Contractor's Qualified Consultant and the Engineer, work shall proceed.

### **3.03 PRECLEANING**

- A. Surfaces shall be cleaned by HEPA vacuum and adequately wet wiped prior to establishment of containment.

### **3.04 METHODS OF COMPLIANCE**

- A. Mandated Practices: The specific abatement techniques and items identified shall be detailed in the Contractor's AHAP. Use the following engineering controls and work practices in all operations, regardless of levels of exposure:
  1. Vacuum cleaners equipped with HEPA filters.
  2. Wet methods or wetting agents except where it can be demonstrated that the use of wet methods is unfeasible due to the creation of electrical hazards, equipment malfunction, and in roofing.
  3. Prompt clean-up and disposal.
  4. Inspection and repair of polyethylene.
  5. Cleaning of equipment and surfaces of containers prior to removing them from the equipment room or area.
- B. Control Methods: Use the following control methods:
  1. Local exhaust ventilation equipped with HEPA filters.
  2. Enclosure or isolation of processes producing asbestos dust.
  3. Where the feasible engineering and work practice controls are not sufficient to reduce employee exposure to or below the PELs, use them to reduce employee exposure to the lowest levels attainable and supplement them with the use of respiratory protection.
- C. Unacceptable Practices: The following work practices shall not be used:

1. High-speed abrasive disc saws that are not equipped with point-of-cut ventilators or enclosures with HEPA filtered exhaust air.
  2. Compressed air used to remove asbestos containing materials, unless the compressed air is used in conjunction with an enclosed ventilation system design to capture the dust cloud created by the compressed air.
  3. Dry sweeping, shoveling, or other dry clean-up.
  4. Employee rotation as a means of reducing employee exposure to asbestos.
- D. Class II Work: In addition to the requirements of paragraphs 3.05.A, 3.05.B, and 3.05.C, the following engineering controls and work practices shall be used:
1. A certified asbestos Contractor/Supervisor must supervise the work.
  2. For indoor work, critical barriers must be placed over all openings to the regulated area.
  3. Impermeable dropcloths must be placed on surfaces beneath all removal activity.
- E. Control Methods for Class II Work:
1. Interior and Exterior Window and Door Frame Caulking: When removing interior and exterior window and door frame caulking, use the method spelled out in the Contractor's approved AHAP, that shall be at least as protective as the following. Scraping of caulking must be performed using wet methods. Mechanical chipping is prohibited unless performed in a negative pressure enclosure. Dry sweeping is prohibited. Use vacuums equipped with HEPA filters, disposable dust bags, and metal floor tools (no brush) to clean surrounding floor. Dispose of the caulking as asbestos containing waste.
  2. Exterior Window Glazing: When removing exterior window glazing, use the method spelled out in the Contractor's approved AHAP, that shall be at least as protective as the following. Scraping of glazing must be performed using wet methods. Mechanical chipping is prohibited unless performed in a negative pressure enclosure. Dry sweeping is prohibited. Use vacuums equipped with HEPA filters, disposable dust bags, and metal floor tools (no brush) to clean surrounding floor. Dispose of the glazing as asbestos containing waste.
  3. Vinyl and Asphalt Flooring Materials: When removing vinyl flooring materials, use the method spelled out in the Contractor's approved AHAP, that shall be at least as protective as the following. Tiles shall be removed intact (if possible); wetting is not required when tiles are heated and removed intact. Flooring or its backing shall not be sanded. Scraping of residual adhesive and/or backing shall be performed using wet methods. Mechanical chipping is prohibited unless performed in a negative pressure enclosure. Dry sweeping is prohibited. Use vacuums equipped with HEPA filters, disposable dust bags, and metal floor tools (no brush) to clean floors. Dispose of the vinyl flooring and associated mastic as asbestos containing waste.

4. Asbestolux Wall and Ceiling Board: When removing asbestolux wall and ceiling board, use the method spelled out in the Contractor's approved AHAP, that shall be at least as protective as the following. The asbestolux wall and ceiling board must be removed in a negative pressure enclosure system. The material will be misted with a fine spray of amended water and removed as much as possible in whole pieces. Wet material conditions must be maintained. Dry sweeping is prohibited. Use vacuums equipped with HEPA filters, disposable dust bags, and metal floor tools (no brush) to clean floors. Dispose of the asbestolux wall and ceiling board as asbestos containing waste.
5. Sink Insulation: When removing sinks with asbestos insulation, use the method spelled out in the Contractor's approved AHAP, that shall be at least as protective as the following. The insulation must first be sprayed with an encapsulant if the insulation will not be abated with the sink in place. Scraping of insulation will be performed using wet methods. Mechanical chipping is prohibited unless performed in a negative enclosure. Use vacuums equipped with HEPA filters, disposable dust bags, and metal floor tools (no brush) to clean floors and the inside of cabinets, as necessary. Dispose of the insulation as asbestos containing waste. Alternatively, if the insulation has been encapsulated, the sink may be removed from the countertop, wrapped in two layers of 6-mil polyethylene, and be disposed of, in its entirety, as asbestos containing waste.
6. Silver Roof Paint: When removing roofing panels with silver roof paint, use the method spelled out in the Contractor's approved AHAP, that shall be at least as protective as the following. As much as feasible, leave the white polymer "hydrostop" roofing membrane in place on roofing panels. Remove panels in pieces as large as possible to minimize cuts. Use vacuums equipped with HEPA filter, disposable dust bag, and metal floor tool (no brush) to clean surrounding floor within the structure. Pieces must be wrapped in two layers of 6-mil polyethylene and disposed of as asbestos containing waste.
7. Fire and Vault Doors: When removing fire and vault doors containing asbestos insulation, use the method spelled out in the Contractor's approved AHAP, that shall be at least as protective as the following. Doors hinges shall be unscrewed from the door jambs to remove the doors. No components of the doors (handles, locking mechanisms, hinges, windows) shall be removed from the door. Doors shall be wrapped in two layers of 6-mil polyethylene and dispose of as asbestos containing waste.

### **3.05 FINAL CLEANING AND VISUAL INSPECTION**

- A. After completion of all asbestos removal work, any remaining visible accumulations of asbestos shall be collected. For all classes of indoor asbestos abatement, a final cleaning shall be performed using HEPA vacuum and wet cleaning of all exposed surfaces and objects in the regulated area. Upon completion of the cleaning, conduct a visual pre-inspection of the cleaned area in preparation for a final inspection before final air clearance monitoring. The Contractor and the Engineer shall conduct a final visual inspection of the cleaned regulated area and document the results. If the Engineer rejects the clean regulated area as not meeting final cleaning requirements, re-clean as necessary and have a follow-on inspection conducted with



the Engineer. Re-cleaning and follow-up re-inspection shall be at the Contractor's expense.

- B. All control methods shall be maintained, and not other trades allowed entry, until final cleaning is approved.

### **3.06 LOCKDOWN**

- A. After clean-up of gross contamination and final visual inspection, a compatible post removal (lockdown) encapsulant shall then be spray applied to all surfaces exposed to asbestos. The lockdown area shall include but not to be limited to constructed enclosures, barriers, polyethylene sheeting that covers any equipment articles to be discarded, critical barriers, air locks, load out units for bag removal, and on-site constructed decontamination unit.

### **3.07 EXPOSURE ASSESSMENT AND AIR MONITORING**

- A. General Requirements
  - 1. Exposure assessment, air monitoring, and analysis of airborne concentration of asbestos fibers must be performed in accordance with 29 CFR 1926.1101, and the Contractor's AHAP. Results of breathing zone samples must be posted at the job site and made available to the Engineer. Submit all documentation regarding initial exposure assessments, negative exposure assessments, and air monitoring results.
  - 2. Worker Exposure:
    - a. The Contractor's Qualified Consultant shall collect samples representative of the exposure of each employee who is assign to work within a regulated area. Breathing zone samples shall be taken for at least 25 percent of the workers in each shift, or a minimum of 2, whichever is greater. Air monitoring results at the 95 percent confidence level shall be calculated.
    - b. Provide an independent laboratory with the qualifications listed in paragraph 1.08.A.7, using the methods prescribed in 29 CFR 1926.1101, to include NIOSH 2003-154 Method 7400.
    - c. Workers shall not be exposed to an airborne fiber concentration in excess of 1.0 f/cc, as averaged over a sampling period of 30 minutes. Should a personal excursion concentration of 1.0 f/c, expressed as a 30-minute sample, occur inside a regulated work area, stop work immediately, notify the Engineer, and implement additional engineering controls and work practice controls to reduce airborne fiber levels below prescribed limits in the work area. Do not restart until authorized by the Engineer.
  - 3. Environmental Exposure:
    - a. All environmental air monitoring must be performed by the Contractor's Qualified Consultant.
    - b. Environmental and final clearance air monitoring shall be performed using NIOSH 2003-154 Method 7400 (PCM) with option confirmation of results by TEM.

- c. For environmental and final clearance, air monitoring shall be conducted at a sufficient velocity and duration to establish the limit of detection of the method used at 0.005 f/cc.
- d. When confirming asbestos fiber concentrations (f/cc) from environmental and final clearance samples, use TEM in accordance with NIOSH 2003-154 Method 7402. When such confirmation is conducted, it must be from the same sample filter used for the NIOSH 2003-154 Method 7400 PCM analysis. All confirmation of asbestos fiber concentrations, using NIOSH 2003-154 Method 7402, shall be at the Contractor's expense.
- e. Monitoring may be duplicated by the State at the discretion of the Engineer, and at the State's expense.
- f. Maintain a fiber concentration inside a regulated area less than or equal to 0.1 f/cc expressed as an 8 hour, time-weighted average (TWA) during the asbestos abatement.
- g. At the discretion of the Engineer, fiber concentration may exceed 0.1 f/cc but shall not exceed 1.0 f/cc expressed as an 8-hour TWA. Should an environmental concentration of 1.0 f/cc expressed as an 8-hour TWA occur inside a regulated work area, stop work immediately, notify the Engineer, and implement additional engineering controls and work practice controls to reduce airborne fiber levels below prescribed limits in the work area. Work shall not restart until authorized by the Engineer.

B. Initial Exposure Assessment

- 1. The Contractor's Qualified Consultant shall conduct an exposure assessment immediately before or at the initiation of an asbestos abatement operation to ascertain expected exposures during that operation. The assessment shall be completed in time to comply with the requirements, which are triggered by exposure data or the lack of a negative exposure assessment, and to provide information necessary to assure that all control systems planned are appropriate for that operation. The assessment shall take into consideration both the monitoring results and all observations, information or calculations which indicate employee exposure to asbestos, including any previous monitoring conducted in the workplace, or of the operations of the Contractor which indicate the levels of airborne asbestos likely to be encountered on the job.

C. Negative Exposure Assessment

- 1. Provide a negative exposure assessment for the specific asbestos job which conforms to the following criteria:
  - a. Objective Data: Objective data demonstrating that the product or material containing asbestos minerals or the activity involving such product or material cannot release airborne fibers in concentrations exceeding the PEL-TWA and PEL-Excursion Limit under those work conditions having the greatest potential for releasing asbestos.
  - b. Prior Asbestos Jobs: Where the Contractor has monitored prior asbestos jobs for the PEL and the PEL-Excursion Limit within 12 months of the

current job, the monitoring and analysis were performed in compliance with asbestos standard in effect; the data were obtained during work operations conducted under workplace conditions closely resembling the processes, type of material, control methods, work practices, and environmental conditions used and prevailing in the Contractor's current operations; the operations were conducted by employees whose training and experience are no more extensive than that of employees performing the current job; and these data show that under the conditions prevailing and which will prevail in the current workplace, there is a high degree of certainty that the monitoring covered exposure from employee exposures will not exceed the PEL-TWA and PEL-Excursion Limit.

- c. Initial Exposure Monitoring: The results of initial exposure monitoring of the current job, made from breathing zone air samples that are representative of the 8-hour PEL-TWA and 30-minute short-term exposures of each employee. The monitoring covered exposure from operations which are most likely during the performance of the entire asbestos job to result in exposures over the PELs.

#### D. Pre-abatement Environmental Air Monitoring

1. Pre-abatement environmental air monitoring shall be established for each regulated area to determine background concentrations before abatement work begins. As a minimum, pre-abatement air samples shall be collected using NIOSH 2003-154 Method 7400, PCM at these locations: outside each regulated work area; and inside each regulated work area. At least 2 samples shall be collected outside the building: at the exhaust of the HEPA unit; and downwind from the abatement site. The PCM samples shall be analyzed within 24 hours. If any results exhibit fiber concentrations greater than 0.01 f/cc, the results shall be confirmed using NIOSH 2003-154 Method 7402 (TEM).

#### E. Environmental Air Monitoring During Abatement

1. Until an exposure assessment is provided to the Engineer, environmental air monitoring shall be conducted at locations and frequencies that will accurately characterize any evolving airborne asbestos fiber concentrations. The assessment shall demonstrate that the product or material containing asbestos minerals, or the abatement involving such product or material, cannot release airborne asbestos fibers in concentrations exceeding 0.01 f/cc as a TWA under those work conditions having the greatest potential for releasing asbestos. The monitoring shall be at least once per shift at locations including, but not limited to, close to the work inside a regulated area; preabatement sampling locations; outside entrances to a regulated area; close to glovebag operations; representative locations outside of the perimeter of a regulated area; inside clean room; and at the exhaust discharge point of local exhaust system ducted to the outside of a containment (if used). If the sampling outside regulated area shows airborne fiber levels have exceeded background or 0.01 f/cc, whichever is greater, work shall be stopped immediately, and the Engineer notified. The condition causing the increase shall be corrected. Work shall not restart until authorized by the Engineer.

#### F. Final Clearance Air Monitoring

1. The Contractor's Qualified Consultant shall conduct final clearance air monitoring for each regulated work area using aggressive air sampling techniques as defined in 40 CFR 763 Subpart E, Appendix A, Unit III, Nonmandatory TEM Method B.7(d-f), and in accordance with 11 HAR 502-9.
  - a. Final Clearance Requirements, NIOSH 7400 PCM Method: For PCM sampling and analysis using the NIOSH method specified in NIOSH 7400, abatement inside the regulated area shall be considered complete when none of the air samples detect fiber concentrations greater than 0.01 f/cc. The number of PCM samples obtained per regulated area may vary at the discretion of the Qualified Consultant; however, the results must provide a true representation of the air quality within the regulated area for clearance.
  - b. Air Clearance Failure: If clearance sampling results fail to meet the final clearance requirements, the Contractor shall maintain all safety controls and pay all costs associated with the required re-cleaning, resampling, and analysis, until final clearance requirements are met.
- G. Air Monitoring Results and Documentation
  1. Air sample fiber counting shall be completed and the results provided within 24 hours (breathing zone samples), and 48 hours (environmental/clearance monitoring) after completion of a sampling period. The Engineer must be notified immediately of any airborne levels of asbestos fibers in excess of the established requirements. Written sampling results shall be provided within 5 working days of the date of collection. The written results must be signed by the testing laboratory analyst, testing laboratory principal, and the Contractor's Qualified Consultant. The air sampling results must be documented in a Contractor's daily air monitoring log. The daily air monitoring log will contain the following information for each sample:
    - a. Sampling and analytical method used;
    - b. Date sample collected;
    - c. Sample number;
    - d. Sample type: BZ = Breathing Zone (Personal), P = Preabatement, E = Environmental, C = Abatement Clearance;
    - e. Location/activity/name where sample was collected;
    - f. Sampling pump manufacturer, model, and serial number, beginning flow rate, end flow rate, average flow rate (L/min);
    - g. Calibration date, time, method, location, name of calibrator, signature;
    - h. Sample period (start time, stop time, elapsed time [minutes]);
    - i. Total air volume sampled (liters);
    - j. Sample results (f/cc);

- k. Laboratory name, location, analytical method, analyst, confidence level. In addition, the printed name and signature and date block for the Qualified Consultant/IH/IHT who conducted the sampling and reviewed the daily air monitoring log verifying the accuracy of the information.

**3.08 CLEANING AND CLEARANCE OF THE WORK AREA**

- A. Should the Contractor fail to commence work to clean-up and make the work area asbestos free within one working day after clean-up thereof has been requested by the Engineer, and thereafter to expeditiously complete the said clean-up, the Engineer may, without further notice and without termination of contract, have the clean-up done and deduct the cost thereof from the contract.
- B. Visual Clearance of the Removal Work Areas: Remove all visible accumulation of asbestos containing materials, debris, and waste by HEPA vacuums, sponging, and wet-wiping. The work areas shall be totally visibly clean and remaining material encapsulated. The Contractor, in the presence of the Qualified Consultant, shall make a complete visual inspection of the work area to ensure dust-free conditions. After final clean-up and acceptable airborne concentrations are attained, but before the HEPA unit is turned off and the containment removed, the Contractor shall remove all pre-filters on the building ventilation system and provide new pre-filters. The pre-filters must be disposed of as asbestos containing waste. HVAC, mechanical, and electrical systems shall be re-established in proper working order, at the discretion of the Engineer.

Once the Qualified Consultant certifies that the work areas are clean of asbestos-containing materials, debris, and waste, the other contractors may proceed with their work. The removal of signage required by the asbestos removal work shall be allowed after all asbestos-containing material designated to be removed has been removed. Signage applicable to job site safety and the performance of the remaining portions of the work shall remain as applicable.

- C. Completely remove all temporary barriers and materials when their use is no longer required.

**3.09 DISPOSAL OF ASBESTOS-CONTAINING MATERIAL**

- A. As the work progresses and asbestos-containing waste is generated the Contractor shall transport all waste generated on a pre-scheduled day to the HDOH SHWB authorized disposal site or as specifically approved by the Engineer to prevent delay in the disposal operation. Transport all waste to the predesignated disposal site in accordance with EPA regulations and specific landfill requirements.

Contaminated material shall be double-bagged in bags with OSHA labels stating:

DANGER  
CONTAINS ASBESTOS FIBERS  
MAY CAUSE CANCER  
CAUSES DAMAGE TO LUNGS  
DO NOT BREATHE DUST  
AVOID CREATING DUST

Additionally, label bags in accordance with 29 CFR 1926.1101, 12 HAR 145.1, or 40 CFR 61.150. Labeling shall include the name of the waste generator, and the site where the waste was generated.

- B. Mark vehicles used to transport asbestos-containing waste material during the loading and unloading of the waste so that the signs are visible. The marking must be displayed in such a manner and location that a person can easily read the legend. Refer to 40 CFR Part 61.149 for lettering size, fonts and wording of sign requirements. For all loading and unloading activities, the sign referred to in 40 CFR Part 61.150 (b) (3) shall be displayed prominently.
- C. Vehicles used for transporting waste to the disposal sites shall have a completely enclosed, lockable storage compartment. Storage compartments shall be plasticized and sealed with a minimum of one layer of 6 mil polyethylene sheeting on the sides and top and two layers of 6 mil polyethylene on the floor (bed). Waste materials, except those with sharp edges (metal lath, screws, nails, metal suspension system, etc.), properly double bagged may be transported to the disposal site without being placed in drums if the transporting vehicle is prepared as specified above in addition to any more stringent requirements by HIOSH. The compartments shall be thoroughly wet-cleaned and/or HEPA vacuumed following the disposal of each load at the disposal sites at an approved location with electrical power as required. At the conclusion of the asbestos abatement, or before transport vehicles are used for other purposes, the polyethylene sheeting shall be properly removed and disposed of as contaminated waste. After this has been accomplished, compartments shall once again be wet-cleaned and HEPA vacuumed in order to eliminate all debris.
- D. At the landfill, upon delivery of the waste for disposal, the Contractor shall notify the Scale Attendant and Landfill Spotter that the waste to be disposed of is asbestos material.
- E. Workers unloading bags at the disposal sites shall be dressed in full body protective clothing and dual cartridge respirators.
- F. Waste disposal manifest forms shall be properly completed to assure custody and disposal of all asbestos-containing material and asbestos contaminated waste at approved disposal sites. Forms shall be kept on file as directed by the Engineer with copies submitted to the Qualified Consultant the next working day after each trip.

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

- G. Bags must be placed in the hole for burial. Dumping of bags from the containers will not be allowed. However, if a bag is torn and if acceptable by the landfill, the entire container may be buried.
- H. Liquid waste for disposal shall be filtered as specified herein.
- I. The Contractor shall pay the waste disposal charge and any special handling charges at the landfills. All expenses for landfills shall be the complete responsibility of the

Contractor. The bagged material shall be loaded in drums except as noted previously and transported to a landfill authorized by HDOH SHWB to accept material containing asbestos. In the event the bag is torn, the tear shall be immediately mended with duct tape and the bag placed into another bag and sealed, and the wrapped material covered with another wrap and sealed. The Contractor shall make all prior arrangements with the landfill.

END OF SECTION



## **SECTION 13282 - LEAD CONTAINING MATERIAL CONTROL**

### **PART 1 - GENERAL**

#### **1.01 SUMMARY**

- A. Furnish all labor, materials, equipment, and services necessary to carry out the safe removal and disposal of paint with lead, which includes both lead-containing paint and lead-based paint, for the State of Hawaii, Department of Defense, Hawaii Army National Guard, Demolition of CSMS-1 Building 304 Complex at Fort Ruger, Honolulu, Hawaii, in conformance with all relevant laws, regulations, and other requirements, including these specifications and the construction drawings.

#### **1.02 DESCRIPTION**

- A. In performing the handling of paint with lead, all possible safeguards, precautions and protective measures shall be utilized to prevent exposure of any individual to lead particulates.
- B. Paint with lead and lead containing ceramic tiles have been identified at the project site. Locations have been identified in the "Hazardous and Recyclable Materials Survey Report, HIARNG CSMS-1 Building 304 Complex and CERFP Building 301, TMK Number: (1) 3-1-042:006 (Por.), Fort Ruger, Honolulu, Hawaii", dated September 2015, and the drawings, including all findings, limitations, and exclusions therein.
- C. The lead abatement work will include:
  - 1. The preparation and treatment of existing material containing paint with lead . Paint with lead removal work shall be selective, performed only where existing paint is peeling, blistering, flaking, or otherwise poses a threat to of release or worker exposure during general demolition activities. This specification section shall be implemented so that the planned work can be accomplished in a safe manner.
  - 2. All preparation of paint with lead shall be identified in advance so that the preparation and treatment of surfaces will be accomplished in one continuous operation.
  - 3. Demolition of paint with lead surfaces that are peeling, blistering, flaking, or otherwise poses a threat to of release or worker exposure during general demolition activities. Lead painted (lead-containing paint and/or lead-based paint) surfaces shall be abated in accordance with all applicable laws, regulations, and other requirements, including these specifications, the construction drawings, and the Contractor's approved Lead Management Plan.
  - 4. Post abatement surface soil sampling, as described in paragraphs 3.05.A.4 and 3.05.A.5 to ensure that demolition operations have not adversely affected the areas surrounding the building(s).
- D. All untested paint shall be assumed to be lead-based paint unless proper sampling and laboratory analysis proves otherwise.

### **1.03 COORDINATION WITH OTHER SECTIONS**

- A. The Contractor is to coordinate all work with the Engineer, the Contractor's hired Qualified Consultant, other trades, and the work and requirements described in the following:
  - 1. SECTION 13281 - ASBESTOS ABATEMENT for work and requirements involving lead containing/based paint.
  - 2. SECTION 13283 - OTHER HAZARDOUS MATERIALS for work and requirements involving other hazardous regulated materials.
  - 3. SECTION 13288 - TESTING AND AIR MONITORING for work and requirements involving air monitoring.

### **1.04 CONTRACTOR USE OF PREMISES**

- A. The Contractor shall repair or replace, to the State's satisfaction, all items identified as damaged or missing in connection with this work that cannot be proven to have been in this condition prior to the commencement of this project. It is the Contractor's responsibility to bring to the attention of the Engineer, any discrepancies in the plans and specifications prior to starting any work.
- B. Pollution Control: The Contractor shall not contaminate the air, water, soil or other items with hazardous materials such as cleaning solutions, lead-containing debris and waste, etc. The Contractor shall immediately clean the contaminated area and dispose of the waste at his own expense if determined by the Engineer to be contaminated. The Engineer shall have the authority to immediately stop the work and order the Contractor to clean the contaminated site.
- C. Use of the Site:
  - 1. Confine operations at the site to the areas permitted under the Contract. Portions of the site beyond areas on which work is indicated are not to be disturbed. Conform to site rules and regulations affecting the work while at the project site.
  - 2. Do not unreasonably encumber the site with materials or equipment. Confine stock-piling of materials and location of storage to the areas authorized by the Engineer.

### **1.05 CONTRACTOR RESPONSIBILITIES**

- A. The Contractor acknowledges that he alone is responsible for the instruction and for enforcing personnel protection requirements and that these specifications provide only a minimum acceptable standard. Contractor shall comply with all requirements of 29 CFR 1926.62 and 12 HAR 148.1. The Contractor shall also be responsible for complying with all applicable EPA regulations in regards to lead-containing materials.
- B. Respirators: Use appropriate respirators and filters which meet all requirements of 29 CFR 1926.62 and 12 HAR 148.1.
- C. Protective Clothing: Use appropriate personal protective clothing (disposable suits, eye protection, gloves, etc.) as required by 29 CFR 1926.62 and 12 HAR 148.1.

## **1.06 ABBREVIATIONS**

- A. AL: Action Level
- B. ANSI: American National Standards Institute, Inc.
- C. CFR: Code of Federal Regulations
- D. EPA: U.S. Environmental Protection Agency
- E. HDOD: State of Hawaii, Department of Defense
- F. HDOH: State of Hawaii, Department of Health
- G. HIARNG: State of Hawaii, Department of Defense, Army National Guard
- H. HEPA: High Efficiency Particulate Air
- I. HIOSH: State of Hawaii, Department of Labor and Industrial Relations, Division of Occupational Safety and Health
- J. LBP: Lead-Based Paint
- K. LCP: Lead-Containing Paint.
  - 1. Note: For this project, the term “lead-containing paint” and “paint with lead” includes the ceramic tiles in the restroom that was confirmed to contain lead (at concentrations less than 0.5%), as noted in the survey report.
- L. NARA: U.S. National Archives and Records Administration
- M. NIOSH: National Institute for Occupational Safety and Health
- N. NIST: National Institute of Standards and Technology
- O. OSHA: Occupational Safety and Health Administration
- P. PEL: Permissible Exposure Limit
- Q. PLM: Polarizing Light Microscopy
- R. SHWB: Solid and Hazardous Waste Branch
- S. TWA: Time Weighted Average
- T. UL: Underwriters Laboratory

## **1.07 DEFINITIONS**

- A. Abatement: Procedure to control lead dust release from paint with lead.

- B. Removal: All herein specified procedures necessary to remove peeling, flaking and blistering paint with lead in an acceptable manner.
- C. Action Level (AL): Employee exposure averaged over an 8-hour period, without regard to the use of respirators, to a particular airborne concentration. OSHA requirements become effective at this level. Lead: 30 micrograms/cubic meter
- D. Air Monitoring: The process of measuring the content of a specific, known, volume of air in a stated period of time.
- E. Authorized Visitor: The Engineer, their representatives, air monitoring personnel, or representative of any regulatory or other agency having jurisdiction over the project.
- F. Contaminated Area: An area where unwanted toxic or harmful substances have been introduced.
- G. Fixed Object: A unit of equipment or furniture in the area which cannot be removed from the work area without dismantling.
- H. HEPA Filter: A High Efficiency Particulate Absolute filter capable of trapping and retaining 99.97% of particulate greater than 0.3 micron in length.
- I. HEPA Vacuum Equipment: Vacuuming equipment that utilizes a High Efficiency Particulate Absolute (HEPA) filter.
- J. Holding Area: A secure area used for the storage of properly contained lead-containing material before removal from the project site to an approved disposal site.
- K. Lead: Metallic lead, all inorganic lead compounds, and inorganic lead soaps. Excluded are all other organic lead compounds.
- L. Lead-Containing Paint (LCP): For this project, the term "lead-containing paint" and "paint with lead" includes the ceramic tiles located in the restroom that was confirmed to contain lead (at concentrations less than 0.5%), as noted in the survey report.
- M. Lead Control Area: An Area where paint with lead removal, treatment and preparation operations are performed which is isolated by physical boundaries to prevent unauthorized entry of personnel and to prevent the spread of lead dust, paint chips or debris.
- N. Paint with lead: includes both LBP and LCP.
- O. Permissible Exposure Limit (PEL): The employer shall ensure that no employee is exposed to concentrations greater than the PEL as determined from an 8-hour time weighted average. Lead: 50 micrograms/cubic meter.
- P. Personal Monitoring: Sampling of lead paint dust concentrations within the breathing zone of an employee to determine the 8-hour time weighted average. The

samples shall be representative of the employee's work tasks. The breathing zone shall be considered an area within 12 inches of the nose or mouth of an employee.

- Q. Plasticizing: Procedures necessary to use polyethylene sheeting, adhesives and (or) taping.
- R. Qualified Consultant: Person hired by the Engineer, who is educated and trained in recognizing and evaluating work place hazards and stress (in this instance, paint with lead removal and related work in accordance with 40 CFR 745, 29 CFR 1926.62 and HIOSH 12-148.1) and providing guidance on the methods and means of removing or correcting such hazards and stresses within the work environment.

#### **1.08 GENERAL REQUIREMENTS**

- A. Commencement of work: The Contractor shall not commence work unless the following requirements have been met. These requirements must be met each time work that calls for the disturbance of paint with lead is to begin in a new work area.
  - 1. Submittals: All pre-treatment submittals, notifications, posting and permits have been provided and are satisfactory to the Engineer.
  - 2. Equipment: All equipment for preparation, clean-up and disposal are on hand.
- B. The work specified herein shall include the preparation of work area, preparation and/or other special treatment procedures, protection of other nearby areas, demolition, and transportation and disposal procedures as required of lead-containing materials by persons trained, knowledgeable and qualified in the techniques of handling and disposing of lead-containing and lead-contaminated materials, and the subsequent cleaning of contaminated areas. This work shall be performed in compliance with all applicable federal, state and local regulations.
- C. The Contractor shall submit documentation within 10 consecutive calendar days of award, that employees have had instructions on the dangers of lead exposure on respirator use and decontamination.
- D. Applicable Standards and Guidelines: All work under this contract, and any other trade work conducted with the project, shall be performed in strict accordance with all applicable federal, state and local regulations, standards and codes governing paint with lead preparation, removal, disposal, treatment, transportation and disposal of lead materials.
  - 1. The most recent edition of any relevant regulation, standard, document code shall be in effect.
  - 2. The Contractor shall have copies of all standards, regulations, codes and other applicable documents available at the work site in an area assigned to the Contractor throughout the execution of this project.
- E. Specific Statutory and Regulatory Requirements:
  - 1. The Department of Labor and Industrial Relations: State of Hawaii; Occupational Safety and Health Standards; Part 8, Section 12-148, June 1993 (HIOSH) Lead Exposure in Construction.

2. Office of Public and Indian Housing, Department of Housing and Urban Development: Lead Paint Guidelines, dated June 1995.
  3. Title 29 Code of Federal Regulations Part 1926.62, Safety and Health Standards (Lead Exposure in Construction, May 1993).
  4. Title 29 Code of Federal Regulations Part 1910.134, Respiratory Protection.
  5. Title 40 Code of Federal Regulations Part 261, Identification and Listing of Hazardous Waste.
  6. Title 40 Code of Federal Regulations Part 262, Standards Applicable to Generators of Hazardous Waste.
  7. Title 40 Code of Federal Regulations Part 263, Regulations Hazardous Waste Transporters.
  8. Federal Register No. 54, No. 131; Tuesday, July 11, 1989. Department of Labor, Occupational Safety and Health Administration; 29 CFR Parts 1910, 1915, 1917 and 1918; Occupational Exposure to Lead; Statement of Reasons; Final Rule.
- F. Alternative Procedures:
1. Requests for Alternative Procedures: Procedures described in this specification are to be used at all times. However, if specified procedures cannot be used, a request must be made in writing to the Engineer providing details of the problem encountered and recommended alternatives.
  2. Requirements for Alternative Procedures: Alternative procedures shall provide equivalent or greater protection than the procedures that they replace.
  3. Approval of Alternative Procedures: Any alternative procedure must be approved in writing by the Engineer before implementation.

#### **1.09 SUBMITTALS PRIOR TO WORK**

- A. Submit in accordance with SECTION 01330 - SUBMITTAL PROCEDURES.
- B. Final payment will not be made until copies of all submittals have been furnished to and accepted by the Engineer. Submit 4 copies of the submittal package no later than 10 work days from the notice of award unless otherwise specified in this section. The submittal package will include the items listed below.
- C. Detailed Work Plan: The Contractor shall submit a Lead Management Plan for the paint with lead disturbance work. The Contractor shall also provide detailed information concerning:
  1. Preparation of the work area
  2. Personal protective equipment including respiratory protection and protective clothing.
  3. Name of the Contractor's onsite Competent Person responsible for compliance with all federal, State, and local regulations, plans, and specifications.

4. Employees who will participate in the project: include documentation of experience, documented proof of lead removal training based on 29 CFR 1926.62, HIOSH 12-148.1 and/or the proposed EPA Model Accreditation for Lead-based Paint Removal Work Training, in addition to any current EPA regulatory requirements, and assigned responsibilities during the project.
  5. Decontamination procedures for the personnel who may be exposed to paint with lead.
  6. Paint with lead treatment, handling and disposal methods and procedures to be used.
  7. Required air monitoring procedures and sampling protocols.
  8. Procedures for final cleanup.
  9. Post abatement soil sampling plan for review by HIARNG ENV.
  10. A sequence of work and performance schedule in coordination with other trades.
  11. Emergency procedures.
- D. Shop Drawings: Submit shop drawings for the following items as a minimum:
1. Descriptions of any equipment to be employed not discussed in this section.
  2. Security provisions, if any, in and around the project area.
  3. Outline of work procedures to be employed.
  4. Location of the waste storage area.
  5. Staging of the work, the sequence.
  6. Entrances and exits to the work place
  7. Location and construction of worker decontamination units
- E. Notices: The Contractor shall obtain a Generator's EPA Identification number (if necessary) for the lead-containing waste material generated from the project that is determined to be hazardous.
- F. Insurance: Proof of insurance for Workman's Compensation and General Liability which covers asbestos, lead, and pollution.
- G. Qualifications of the Qualified Consultant.
- H. Manufacturer's Data: Copies of manufacturer's specifications, installation instructions and field test procedures for each material and all equipment related to



lead handling and abatement and include other data as may be required to show compliance with these specifications and proposed uses.

- I. Documentation for Instructions:
  - 1. Submit documentation satisfactory to the Engineer that the Contractor's employees, including foremen, supervisors, and any other company personnel or agents who will be exposed to airborne lead dust or who shall be responsible for any aspects of the paint with lead removal work activities, have received training in accordance with this specification, 29 CFR 1926.62, HIOSH 12-148.1, (OSHA Lead Awareness or the EPA Model Accreditation for Lead-based Paint Removal Work Training) and any current EPA regulatory requirements.
  - 2. Submit to the Engineer a written respiratory protection program meeting the requirements of 29 CFR 1910.134(b)(d)(e) and (f), documentation that all employees using respirators have received training, and documentation of respirator fit-testing for all Contractor employees and agents who will enter the work area wearing negative pressure respirators. The Contractor shall be solely responsible for his employee's personal protection.
  
- J. Documentation from Physician: Before exposure to lead dust or fumes, the Contractor shall provide workers with a comprehensive medical examination as required by HIOSH 12-148.1 and 29 CFR 1926.62, or whichever is stricter. This examination will not be required if adequate records show the employees have been examined as required by the aforementioned regulations within the last year.
  - 1. Before exposure to lead dust or fumes, the Contractor will provide workers with a comprehensive medical examination as required by Part 8, Section 12-148, June 1993 of the HIOSH standards; Federal Register Volume 55, No. 189; and 29 CFR 1926.62 or whichever is stricter for the operation being performed. This examination will not be required if adequate records show the employees have been examined as required by the aforementioned regulations within the last year.
  - 2. The Contractor shall provide information to the examining physician about unusual conditions in the work place environment that may impact on the employee's ability to perform work activities; a copy of 29 CFR 1910. 1025; HIOSH Section 12-148; Federal Register Volume 55, No. 189; a description of the affected employee's duties as they relate to the employee's exposure; the employee's representative exposure level or anticipated exposure level; and description of any personal protective and respiratory equipment used or to be used; and information from previous medical examinations of the affected employee that is not otherwise available to the examining physician.
  
- K. Respirators: Submit document NIOSH approvals for all respiratory protective devices used on site. Include manufacturer certification of HEPA filtration capabilities for all cartridges and filters.
  
- L. Emergency Planning Procedures:
  - 1. The Contractor shall submit an emergency evacuation plan for the Engineer's acceptance prior to the commencement of work. This plan shall include consideration of fire explosion, toxic atmospheres, electrical hazards, slips, trips and falls, confined spaces and heat related injury. In non-life threatening

situations, the injured or incapacitated employee shall decontaminate following normal procedures, with assistance from co-workers if necessary, before exiting the work area to obtain proper medical treatment. In life threatening situations, worker decontamination shall take least priority after measures to stabilize the injured worker, remove the injured worker from the work area, and secure proper medical treatment.

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

(including any required lab analyses, waste profiles, and any other supporting documentation) to the HIARNG-ENV and the Engineer, along with draft copies of the waste manifests for review prior to waste shipment off-site for disposal. The applicable HIARNG EPA ID Number shall be used on waste manifests, and manifests will only be signed by individuals authorized by HIARNG-ENG.

3. Transporters and EPA approved facilities used must be listed for the specified waste on the Defense Logistics Agency Disposition Services Qualified Facilities and Transporters lists:  
(<http://www.dispositionservices.dla.mil/newenv/Pages/hwdisposal.aspx>)
4. The Contractor shall provide all lab analyses results to the Engineer and HIARNG-ENG for review prior to disposal of non-hazardous or hazardous waste.
- O. Completed Waste Collection Log, Monthly Waste Generation Report, and Hazardous Material Inventory Log, that are provided in SECTION 01430 - ENVIRONMENTAL PROTECTION.
- P. The Contractor shall submit to the Engineer, documentation that disposal of the lead-containing waste material at the selected landfill is approved by the State of Hawaii, or the EPA approved mainland facility for hazardous lead-containing waste material.

#### **1.10 SUBMITTALS AFTER WORK IS COMPLETED**

- A. Submit in accordance with SECTION 01330 - SUBMITTAL PROCEDURES.
- B. At the completion of the work, a final report shall be prepared by the Contractor for acceptance by the Engineer. The report shall be submitted and shall include the items listed below.
- C. The project name, Abatement Contractor, Abatement Contractor license number, EPA waste generator number, work duration, material removed, respiratory protection employed, waste manifest signed by the Contractor, waste transporter, and landfill operator, and total quantity of waste, TCLP lead reports, employee exposure air sample results, and results of the most current PAT round results for the laboratory conducting the employee exposure air sample analysis.
- D. Certification of the Abatement Contractor's employees.
- E. Visitor/Worker Entry Log: The daily log of all personnel including the Contractor's employees and agents who enter the work area while lead abatement operations are in progress, until final clearance is received from the Qualified Consultant. The log shall contain the listed information as a minimum and shall be certified by the Contractor hired Qualified Consultant.
  1. Date of visit/worker entry
  2. Visitor/Worker's name, employer, business address and telephone number
  3. Time of entry and exit from work area
  4. Purpose of visit

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

## **PART 2 - PRODUCTS**

### **2.01 MATERIALS**

- A. Plastic Sheeting: Minimum thickness is 6-mil polyethylene film.
- B. Tapes: Tape shall be capable of sealing joints of adjacent sheets of polyethylene and for attaching polyethylene sheets to finished or unfinished surfaces of dissimilar materials and capable of adhering under both dry and wet conditions, including the use of amended water. Silver cloth duct tape, minimum 2 inches wide; red or NATO orange tape, minimum 2 inches wide for exit arrows; and double faced foam tapes, by Nashua 3-M, Arno, or approved equal
- C. Adhesives: Adhesives shall be capable of sealing joints of adjacent sheets of polyethylene and for attachment of dissimilar materials and capable of adhering under both dry and wet conditions, including use of amended water. 3-M #76, #77, or approved equal.
- D. Warning Labels and Signs: As required by HIOSH regulation 12-148 and CFR. 55 No. 189 and as approved by the Engineer.
- E. Protective Clothing: The Contractor shall have all the required sets of coveralls required for this project prior to the start of work. There will be no time extension for the unavailability of coveralls or related equipment.
- F. Liquid Sanders: Product shall be specifically designed for the preparation of paint where dry sanding is not allowed or not appropriate. Liquid sanders are not to be used to remove paint.
- G. Other Materials: Provide all other materials which may be required to prepare properly and complete this project.

### **2.02 TOOLS AND EQUIPMENT**

- A. General: Provide and fabricate suitable tools for the lead treatment/preparation procedures.
- B. Other tools and equipment as necessary to accomplish the specified work.

### **2.03 PERSONNEL PROTECTION REQUIREMENTS**

- A. The Contractor acknowledges that he alone is responsible for the instruction and for enforcing personnel protection requirements, and that these specifications provide only a minimum acceptable standard. If other potentially hazardous materials are used, the Contractor shall comply with all applicable regulations that exist for that particular hazardous material and to ensure worker safety and health.
- B. Respiratory Protection: The Contractor shall provide all respiratory protection to workers in accordance with the submitted written respiratory protection program, which includes all items in 29 CFR 1910.134(b)(I-II).
- C. Protective Clothing:
  - 1. Clothing: The Contractor shall provide clothing including head, hands, foot and full body protection consisting of material impenetrable by bulk material in sufficient quantities and adequate sized for all workers and Authorized Visitors. Disposable or reusable clothing are acceptable, however, disposable clothing shall be disposed of in accordance with all federal, state and local regulations.
  - 2. Miscellaneous safety equipment: The Contractor shall provide hard hats (meeting the requirements of ANSI Standard Z89.1-1981), protective eyewear (meeting the requirements of ANSI Standard Z87.1-1979), and disposable gloves to all workers. Safety shoes (meeting the requirements of ANSI Standard Z41.1-1987) may be required for some activities.
  - 3. Footwear: The Contractor shall require appropriate footwear for all workers.

### **PART 3 - EXECUTION**

#### **3.01 POTENTIAL LEAD HAZARD**

- A. The disturbance or dislocation of materials containing lead may cause lead-containing dust to be released into the atmosphere, thereby creating a potential health hazard to workmen, building occupants, and neighboring residences. Apprise all workers supervisory personnel, subcontractors, and consultants who will be at the job site of the seriousness of the hazard and of proper work procedures that must be followed.
- B. Where in the performance of the work, workers, supervisory personnel, subcontractors, or consultants may encounter, disturb, or otherwise function in the immediate vicinity of any identified paint with lead, take appropriate continuous measures as necessary to protect all building occupants from the potential hazard of exposure to respirable airborne lead dust and ingestible lead-containing materials. Such measures shall include at the minimum, the procedures and methods described herein, and compliance with regulations of applicable federal, state and local agencies.
- C. No visible emissions are permitted during any work relating to the disturbance of paint with lead. Contractor shall stop all work and review engineering controls to ensure no visible emissions occur during this phase of work.

### **3.02 LEAD PAINTED MATERIALS**

- A. Lead painted components have been identified at project site through physical sampling of materials.
  - 1. This Section applies to lead painted components that will be disturbed during surface preparation and treatment, demolition, and other activities and as described herein. It does not apply to painted components that do not contain lead, nor paint with lead that will not be disturbed in any manner during the work to be performed under this contract. The Engineer shall have the authority to require special engineering controls described under this Section of any lead painted components that are disturbed.

### **3.03 WORK AREA PREPARATION**

- A. Posting of Caution Signs: The Contractor shall post caution signs in accordance with HUD lead paint guidelines at any location and approaches to a location where airborne concentrations of lead may exceed ambient background levels. The Contractor shall post signs at a distance sufficiently far enough away from the work area to permit an employee to read the sign and take the necessary protective measures to avoid exposure. Additional signs may need to be posted following construction of work place barriers.
- B. Isolation Barriers: Isolation barriers shall be installed in accordance with the contractor's approved work plan wherever it is necessary to protect the public, employees of the facility and non-working personnel from lead dust. The isolation barriers shall provide sufficient protection from contaminating the exterior of the work area.
- C. Inspect the Building Openings: At the beginning of each work day, the Contractor shall inspect and ensure that all doors, windows and other openings of affected building(s) and all surrounding buildings are closed or sealed.

### **3.04 LEAD PAINT TREATMENT/PREPARATION PROCEDURES**

- A. General:
  - 1. Provide temporary utilities, security, safety, worker protection, clean-up and disposal of waste materials as described in this section and elsewhere in these specifications.
  - 2. Isolate the work area: The Contractor shall isolate work area, with barricades and signs to prevent un-authorized persons from entering into the work area. The Contractor shall maintain a log of all personnel allowed to enter the work area.
  - 3. The Contractor shall post signs at a distance sufficiently far enough away from the work area to permit an employee to read the sign and take the necessary protective measures to avoid exposure. Additional signs may need to be posted following construction of work place barriers.
  - 4. The Contractor shall at all times suppress dust emissions while disturbing any material containing lead paint. No visible emissions will be permitted.

5. Re-establishment of the work area shall only occur when cleanup procedures have been completed, all repairs necessitated by paint treatment activities have been performed and no visible dust or debris is present.
  6. Ground contamination of paint with lead and other paint preparatory materials shall be cleaned before leaving the premises.
  7. Post abatement surface soil sampling is required, following the procedures described in paragraphs 3.05.A.4 and 3.05.A.5.
- B. Paint Removal: Paint removal shall only be allowed in locations where paint is peeling, blistering, cracking and/or flaking.
- C. Paint Stripping:
1. Work included under this sub-section includes the furnishing of all labor, materials and equipment required to remove paint with lead by scraping and/or brushing after the paint has been softened by the application of a chemical stripping agent.
  2. Chemical removers shall contain no methylene chloride products. Chemical removers shall be compatible with, and not harmful to the substrate to which they are applied. Chemical removers used for interior surfaces shall not raise or discolor the surface being abated.
  3. Chemical stripping agent neutralizers may be used on exterior surfaces only. Neutralizers shall be compatible with and not harmful to the substrate that they are applied to. Neutralizers shall be compatible with the stripping agent that has been applied to the surface substrate.
  4. Chemical stripping agents and neutralizers shall be applied in accordance with the recommendations of the manufacturer. Care must be taken to adhere to all MSDS, health/safety code and other specification section requirements. Stripping agents shall not be allowed to penetrate wood or other fibrous substrates.
  5. Apply paint strippers in accordance with the manufacturer's printed instructions by spray equipment or trowel to a minimum thickness of 1/8 inch. Leave on for period of not less than 24 hours or longer according to test patch findings.
  6. Neutralize area: Rinse off the residue with water into an approved collection-filtration system and neutralize the area in accordance with the manufacturer's recommendations.
  7. Protective clothing: All workers shall be protected by rubber or polyethylene full body coverage suits, boots, gloves, face shield and protective head gear. Avoid contact with eyes and skin.
- D. Abrasive Removers Machine Sander:
1. Work included under this sub-section includes the furnishing of all labor, materials, and equipment required to remove paint with lead by machine



sanding using a high efficiency dust Particulate Accumulator (HEPA) vacuum system, as called out in these specifications.

2. Sanders shall be of the dual action, rotary action, orbital or straight line system type, capable of being fitted with a (HEPA) dust pick-up system.
3. Wet sanding shall be conducted by hand or pneumatic driven sanders. Electric powered sanders shall not be used for wet sanding.
4. Dry sanding shall only be done on flat surfaces which allow the HEPA dust collection system come into tight contact with the surface being sanded. Surfaces to be sanded shall be wide enough to allow maximum efficiency of the HEPA dust collection system.
5. All lead paint shall be removed down to the bare substrate surface. In cases that some pigment may remain embedded in wood grain and similar porous substrate, care shall be taken to avoid damage to the substrate with the sanding machine. If the pigment cannot be removed without damaging the substrate, notify the Engineer for further instructions.

E. Paint Preparation:

1. Work included under this Sub-Section includes the furnishing of all labor, materials and equipment required to prepare with paint with lead by non-abrasive or wet abrasive techniques.
2. Application:
  - a. Protective clothing shall be worn at all times during the work. Tyvek suits or coveralls shall be worn with protective shoes and gloves.
  - b. Plastic drop cloths shall cover the floor and other areas not being repainted.
  - c. Remove from surface to be repainted all foreign matter such as tape and gum.
  - d. Where existing finish remains clean, tight and firm, prepare surface by using a commercial paint preparation solution (liquid sandpaper) or wet sandpaper to remove the glossy coat.
  - e. Completely wipe or wash all surfaces with mineral spirits, T.S.P. (tri-sodium phosphate), or other appropriate solution as required to remove any accumulated film of wax, oil, grease, smoke, dust, dirt, chalky or other foreign matter which would impair bond of, or bleed through new finish.
  - f. Immediately, spot prime with specified primer, areas where bare metal is exposed.
  - g. Dispose of waste, gloves, suits, plastic, and disposable equipment in accordance with 40 CFR 261 and specifications herein.
3. Ground contamination of paint with lead and other paint preparatory materials shall be cleaned before leaving the premises.

4. If the Contractor's operation results in lead levels in the soil which exceeds 400 parts per million in play areas, and 1,200 parts per million in non-play areas, the Contractor shall pay for any State coordinated remediation and testing to clean up the soil to a lower lead concentration.

### **3.05 PAINT WITH LEAD - DEMOLITION PROCEDURES**

#### **A. General:**

1. Provide temporary utilities, security, safety, worker protection, clean-up and disposal of waste materials as described in this Section and elsewhere in these specifications.
2. Isolating the work area: The Contractor shall isolate work area, with barricades and signs to prevent un-authorized persons from entering into the work area. The Contractor shall post signs at a distance sufficiently far enough away from the work area to permit an employee to read the sign and take the necessary protective measures to avoid exposure. Additional signs may need to be posted following construction of work place barriers.
3. The Contractor shall at all times suppress dust emissions while disturbing any material containing lead paint. No visible emissions will be permitted.
4. The Contractor shall perform post abatement surface soil sampling for total lead, in accordance using incremental sampling methodology described in the HDOH "Technical Guidance Manual for the Implementation of the Hawaii State Contingency Plan." Establishment of decision units will be left to the discretion of the Contractor's Qualified Consultant and will adequately assess whether the surrounding grounds have been adversely affected by demolition of components of the structure with paint with lead. The Contractor's Qualified Consultant shall submit a sampling plan to the HIARNG Environmental Office for review and approval prior to conducting.
5. Ground contamination of paint with lead and other paint preparatory/demolition materials shall be cleaned before leaving the premises. If the Contractor's operation results in lead levels in the soil which exceeds 400 parts per million in play areas and 1,200 parts per million in non-play areas, the Contractor shall pay for any State coordinated remediation and testing to clean up the soil to a lower lead concentration.
6. Re-establishment of the work area shall only occur when clean-up procedures have been completed, all repairs necessitated by paint treatment activities have been performed and no visible dust or debris is present.

### **3.06 STORAGE AND DISPOSAL REQUIREMENTS**

#### **A. Storage Requirements: The Contractor shall store Non-Hazardous and Hazardous Waste Material within the Contractor's trailer or secured storage area.**

1. Bagged waste material: If bagged waste material is to be stored, the Contractor shall use dumpsters for this purpose. The dumpsters shall have doors and tops that can be closed and locked to prevent vandalism, wind dispersion of lead dust, or other disturbance of the bagged debris. The Contractor shall not store unbagged lead-containing waste, liquid waste or non-lead-containing waste in

these dumpsters. The Contractor also shall ensure that the bags in the dumpsters are not damaged. The Contractor shall post warning signs on the dumpsters as specified in OSHA requirement 29 CFR 1926.62.

2. Drummed waste material: If waste material is to be stored in drums, the Contractor shall use a secured storage area for this purpose. This storage area shall have doors that can be closed and locked to prevent vandalism. The Contractor shall only store waste material contained in drums or dumpsters in the secured area. The Contractor shall ensure that the drums in this secured storage area are not damaged. The Contractor shall post warning signs outside the secured storage area as specified in the OSHA requirement 29 CFR 1926.62.

B. Waste Disposal and Landfill Requirements:

1. Representative samples (paint chips debris) for lead leachability (TCLP) testing shall be collected and paid for by the Contractor. If results are below the EPA limit, the materials shall be disposed of at a landfill approved for such purposes. The Contractor shall submit to the State, documentation that the lead-containing waste material removed from the work area has been accepted by the landfill owner.
2. Representative samples of demolition construction debris for lead leachability (TCLP) testing shall be collected and paid for by the Contractor. If results are below the EPA limit, the materials shall be disposed of at a landfill approved for such purposes. The Contractor shall submit to the State, documentation that the lead-containing waste material removed from the work area has been accepted by the landfill owner.
3. If lead leachability results are above the EPA limit, the materials shall be disposed of at an approved facility for receiving hazardous materials. The Contractor shall be responsible for all costs for disposal of waste generated from this project and shall provide copies of all waste disposal documentation (including any required lab analyses, waste profiles, and any other supporting documentation) to the HIARNG-ENV and the Engineer, along with draft copies of the waste manifests for review prior to waste shipment off-site for disposal. The applicable HIARNG EPA ID Number shall be used on waste manifests, and manifests will only be signed by individuals authorized by HIARNG-ENG.
4. Transporters and EPA approved facilities used must be listed for the specified waste on the Defense Logistics Agency Disposition Services Qualified Facilities and Transporters lists:  
(<http://www.dispositionservices.dla.mil/newenv/Pages/hwdisposal.aspx>)
5. The Contractor shall provide all lab analyses results to the Engineer and HIARNG-ENG for review prior to disposal of non-hazardous or hazardous waste.

C. Disposal of Non-Hazardous Lead-Containing Waste:

1. Notifying landfill operator: If required by the landfill or its agents, the Contractor shall advise the landfill operator with sufficient time prior to transportation of the quantity of material to be delivered.

2. Unloading: upon reaching the landfill, the Contractor's trucks are to approach the dump location as close as possible for unloading the Lead-Containing Waste Material.
  - a. The Contractor shall inspect containers as they are unloaded at the disposal site. Material in damaged containers shall be repacked in empty containers, as necessary.
  - b. The Contractor shall carefully place waste Containers on the ground at the disposal site, not push or throw the containers out of the trucks.
3. Clean-up procedures:
  - a. If containers are broken or damaged, the Contractor shall leave the containers in the truck and clean the entire truck and its contents using HEPA vacuums and wet cleaning methods, until no visible residue is observed.
  - b. Following the removal of all contaminated waste, the Contractor shall decontaminate the truck cargo area using HEPA Vacuums and/or wet cleaning methods until no visible residue is observed. Polyethylene sheeting shall be removed and discarded as Lead-Contaminated Waste Material, along with contaminated cleaning materials and protective clothing, in containers at the disposal site.

### **3.07 TESTING/AIR MONITORING**

#### **A. Contractor Responsibilities:**

1. The Contractor shall provide the personal monitoring and necessary records for all of the Contractor's employees as required by OSHA (29 CFR 1926.62), Hawaii State Law HIOSH (12-148) and all other applicable law.
2. Area air/dust monitoring and testing which becomes necessary in order to follow up on work by the Contractor that has been rejected as not conforming to the requirements shall be the responsibility of the Contractor. The full cost of additional monitoring and testing shall be borne by the Contractor, and shall be deducted from the final contract payment in the event of working double shifts to meet deadlines, working longer hours than stated in the accepted proposal, for working beyond the scheduled completion date, violating regulations, not conforming to specifications and plans, or for failing clearance test requirements.

END OF SECTION

## **SECTION 13283 - OTHER HAZARDOUS REGULATED MATERIALS**

### **PART 1 - GENERAL**

#### **1.01 SUMMARY**

- A. Furnish all labor, materials and equipment necessary to carry out the safe testing, removal and disposal of all polychlorinated biphenyls (PCBs), mercury-containing materials, and ozone depleting substances (ODSs) in compliance with all applicable laws and regulations for the State of Hawaii, Department of Defense, Hawaii Army National Guard, Demolition of the CSMS-1 Building 304 Complex at Fort Ruger, Honolulu, Hawaii, in conformance with these specifications, and notes and details shown on the drawings.

#### **1.02 DESCRIPTION**

- A. This section addresses the removal and disposal of PCB-containing fluorescent light ballasts, mercury containing lamps, and ODS-containing air conditioning units. In performing the work, all possible safeguards, precautions and protective measures shall be utilized to prevent exposure of any individual to PCBs, mercury, and ODSs.
- B. PCBs, mercury and ODSs have been identified at the project site. Locations have been identified in the "Hazardous and Recyclable Materials Survey Report, HIARNG CSMS-1 Building 304 Complex and CERFP Building 301, TMK Number: (1) 3-1-042:006 (Por.), Fort Ruger, Honolulu, Hawaii", dated September 2015, and the drawings, including all findings, limitations, and exclusions therein.
- C. All fluorescent light fixtures are assumed to contain PCB-containing ballasts and mercury-containing lamps. All air conditioning units (in-window and split units) are assumed to contain ODSs. Furnish all labor, materials, and equipment necessary to carry out the safe removal and disposal of PCB ballasts, mercury-containing light tubes and air conditioners in compliance with all applicable laws and regulations. All removal work shall be conducted when the facility is closed or during off hours.

#### **1.03 COORDINATION WITH OTHER SECTIONS**

- A. The Contractor is to coordinate all work with the Engineer, the Contractor's hired Qualified Consultant, other trades, and the work and requirements described in the following:
  - 1. SECTION 13281 - ASBESTOS ABATEMENT for work and requirements involving lead containing/based paint.
  - 2. SECTION 13282 - LEAD CONTAINING PAINT CONTROL for work and requirements involving paint with lead.
  - 3. SECTION 13288 - TESTING AND AIR MONITORING for work and requirements involving air monitoring.

#### **1.04 CONTRACTOR USE OF PREMISES**

- A. It will be the Contractor's responsibility to repair or replace, to the State's satisfaction, all items identified as damaged or missing in connection with this work that cannot be proven to have been in this condition prior to the commencement of this project. It is the Contractor's responsibility to bring to the attention of the

Engineer, any discrepancies in the plans and specifications prior to starting any work.

- B. Pollution Control: The Contractor shall not contaminate the air, water, soil or other items with hazardous materials such as cleaning solutions, lead-containing paint debris and waste, etc. The Contractor shall immediately clean the contaminated area and dispose of the waste at his own expense if determined by the Engineer to be contaminated. The Engineer shall have the authority to immediately stop the work and order the Contractor to clean the contaminated site.
- C. Use of the Site:
  - 1. Confine operations at the site to the areas permitted under the Contract. Portions of the site beyond areas on which work is indicated are not to be disturbed. Conform to site rules and regulations affecting the work while at the project site.
  - 2. Do not unreasonably encumber the site with materials or equipment. Confine stock-piling of materials and location of storage to the areas authorized by the Engineer.

#### **1.05 CONTRACTOR RESPONSIBILITIES**

- A. The Contractor acknowledges that he alone is responsible for the instruction and for enforcing personnel protection requirements and that these specifications provide only a minimum acceptable standard. Contractor shall comply with all requirements of 29 CFR 1926.62 and 12 HAR 148.1. The Contractor shall also be responsible for complying with all other applicable federal, state, or local requirements.
- B. Respirators: Use appropriate respirators and filters that meet all requirements of 29 CFR 1926.62 and 12 HAR 148.1.
- C. Protective Clothing: Use appropriate personal protective clothing (disposable suits, eye protection, gloves, etc.) as required by 29 CFR 1926.62 and 12 HAR 148.1.

#### **1.06 ABBREVIATIONS**

- A. AL: Action Level
- B. ANSI: American National Standards Institute, Inc.
- C. CFR: Code of Federal Regulations
- D. EPA: U.S. Environmental Protection Agency
- E. HDOD: State of Hawaii, Department of Defense
- F. HDOH: State of Hawaii, Department of Health
- G. HIARNG: State of Hawaii, Department of Defense, Army National Guard
- H. HEPA: High Efficiency Particulate Air

- I. HIOSH: State of Hawaii, Department of Labor and Industrial Relations, Division of Occupational Safety and Health
- J. NARA: U.S. National Archives and Records Administration
- K. NIOSH: National Institute for Occupational Safety and Health
- L. NIST: National Institute of Standards and Technology
- M. ODS: Ozone Depleting Substances
- N. OSHA: Occupational Safety and Health Administration
- O. PCB: Polychlorinated Biphenyls
- P. PEL: Permissible Exposure Limit
- Q. SHWB: Solid and Hazardous Waste Branch
- R. TWA: Time Weighted Average
- S. UL: Underwriters Laboratory

#### **1.07 DEFINITIONS**

- A. Abatement: Procedure to control material release from PCB-containing, mercury-containing, or ODS-containing materials.
- B. Authorized Visitor: Engineer, his representatives, the Qualified Consultant or a representative of any regulatory or other agency having jurisdiction over the project.
- C. Holding Area: A secure area used for the storage of PCB, mercury, or ODS-containing material before removal from the project site to an approved disposal site.
- D. Leak: Leak means any instance in which the PCB, mercury, or ODS Article, container or equipment has any PCB, mercury, or ODS on any portion of its external surface or in the case of mercury-containing lamps and ODS-containing air conditioners, where fumes or vapors are released when broken.
- E. Mercury: Mercury as used in this specification shall mean the same as mercury, mercury Article, mercury Article Container, mercury Equipment, mercury-Containing, mercury Item, or mercury containing Lamp.
- F. Ozone Depleting Substances (ODS): ODS as used in this specification shall mean the same as ODS Article, ODS Article Container, ODS Equipment, ODS-Containing, ODS Item, or ODS-containing Air Conditioner.
- G. PCB: PCB as used in this specification shall mean the same as PCB, PCB Article, PCB Article Container, PCB Equipment, PCB Item, PCB-Contaminated Equipment, as defined in 40 CFR 761, Section 3, Definitions.



- H. Removal: All herein specified procedures necessary to remove PCB, mercury, and ODS materials at an approved site in an acceptable manner.
- I. Spill: Spill means an uncontrolled release which results in any quantity of PCB, mercury, or ODS running off/out or about to run off the external surface of the equipment or material, as well as the contamination resulting for those releases.
- J. Qualified Consultant: Person hired by the Engineer, who is educated and trained in recognizing and evaluating work place hazards and stress (in this instance, PCB, mercury, and ODS handling, disposal, and related work in accordance with 40 CFR 761, 49 CFR 171, and 49 CFR 172) and providing guidance on the methods and means of removing or correcting such hazards and stresses within the work environment.

### **1.08 REGULATORY REQUIREMENTS**

- A. Furnish employee certification, within 10 consecutive calendar days from award, that the employees have had instructions on the dangers of PCB, mercury, or ODS exposure, on respirator use, and decontamination.
- B. The Contractor shall examine, and have at all times in his possession at his office and in view at each job site office, current issues of the following publications:
  - 1. Title 40, Code of Federal Regulations, Part 761, Polychlorinated Biphenyls (PCB) Manufacturing, Processing, Distribution In Commerce, and Use Prohibitions, U.S. Environmental Protection Agency (EPA)
  - 2. Title 49, Code of Federal Regulations, Part 171, General Information, Regulations, and Definitions
  - 3. Title 49, Code of Federal Regulations, Part 172, Hazardous Materials, Tables, and Hazardous Materials Communications Regulations.
  - 4. Title 49, Code of Federal Regulations, Part 173, Shipments and Packagings.
  - 5. Title 49, Code of Federal Regulations, Part 176, Carriage by Vessel
  - 6. Title 49, Code of Federal Regulations, Section 177, Carriage by Public Highway.
  - 7. Title 49, Code of Federal Regulations, Section 178 Shipping Container Specification
  - 8. Title 29, Code of Federal Regulations, Section 1910.145 Specifications for Accident Prevention, Signs and Tags, Occupational Safety and Health Administration (OSHA), U.S. Department of Labor
  - 9. Title 29, Code of Federal Regulations, Section 1910.1000, Air Contaminants.
- C. The Contractor shall comply with the above requirements and any applicable State and local laws and regulations. Where conflict or any inconsistency among requirements or with this specification exists, the more stringent requirements shall apply. Ignorance of the above requirements and any applicable Federal, State and

local laws and regulations resulting in additional cost to the Contractor shall not be paid by the State.

- D. All regulations shall govern over these specifications, except where more stringent specification or specification providing greater protection against PCB, mercury, and ODS exposure, injury, loss or liability shall control to the extent permitted by regulation. Any question regarding conflict or inconsistency between specification and/or regulations should immediately be directed to the Engineer.

**1.09 SUBMITTALS PRIOR TO WORK**

- A. Submit in accordance with SECTION 01330 - SUBMITTAL PROCEDURES.
- B. Final payment will not be made until copies of all submittals have been furnished to and accepted by the Engineer. Submit 4 copies of the submittal package no later than 10 work days from the notice of award unless otherwise specified in this section. The submittal package will include the items listed below.
- C. Name of the Qualified Consultant responsible for compliance with all federal, State, and local regulations, plans, and specifications.
- D. Documentation for Instruction: Each Worker and Supervisor shall submit current training certificates applicable for removing PCB, mercury, and ODS containing equipment.
- E. PCB, Mercury, and ODS Removal Plan: Submit a detailed job-specific plan of the work procedures to be used in the removal and disposal of PCB, mercury, and ODS containing materials. The plan shall also include interface of trades, sequencing of PCB, mercury, and ODS related work, disposal plan, respirators, protective equipment, and a detailed description of the method to be employed in order to control pollution.
- F. PCB, Mercury, and ODS Disposal Plan: The PCB, Mercury, and ODS Disposal Plan shall comply with applicable requirements of federal, state, and local PCB, mercury, and ODS containing waste regulations and address:
  - 1. Identification of PCB, mercury, and ODS waste associated with the work.
  - 2. Estimated quantities of waste to be generated and disposed.
  - 3. Names and qualifications of each contractor that will be transporting, storing, treating, disposing of the waste (PCB waste shall be required to be incinerated and mercury lamps to be sent to an EPA approved recycler). Include the facilities location and a 24 hour point of contact. Furnish two copies of EPA, state, and local PCB waste permit applications, permits, and EPA Identification numbers.
  - 4. Names and qualifications (experience and training) of personnel who will be working on-site with PCB, mercury, and ODS waste.
  - 5. List of waste handling equipment to be used in performing the work, to include cleaning, volume reduction, and transport equipment.

6. Spill prevention, containment, and cleanup contingency measures to be implemented.
  7. Work plan and schedule for PCB, mercury, and ODS waste containment, removal and disposal. Waste shall be containerized daily.
- G. Transporter Certification: Submit certification of notification to EPA of their PCB, mercury, and ODS waste activities and EPA Identification numbers.
- H. Permits: Submit copies of all permits and arrangements for transportation and disposal of PCBs and mercury materials.
- I. Manufacturer's Data: Submit copies of manufacturer's specifications, installation instructions and field test procedures for each material and all equipment related to PCB, mercury, and ODS handling, disposal and other data as may be required to show compliance with these specifications and proposed uses. Indicate by transmittal form that a copy of each installation instruction has been distributed to the installer.
- J. Protective Clothing: Submit copies of manufacturer's literature on all protective clothing and one sample of each item which will be returned to the Contractor.
- K. Shop Drawings: Submit 4 copies of shop drawings for the following items as a minimum:
1. Description of any equipment to be employed not discussed in this Section.
  2. Security provisions, if any, in and around the project areas
  3. Outline of work procedures to be employed
  4. Staging of the work, the sequence
  5. Entrances and exits to the work place
  6. Placement of air supply system, if any
  7. Location and construction of storage facilities and field office

#### **1.10 SUBMITTALS AFTER WORK IS COMPLETED**

- A. Submit in accordance with SECTION 01330 - SUBMITTAL PROCEDURES.
- B. At the completion of the work, a final report shall be prepared by the Contractor for acceptance by the Engineer. The report shall be submitted and shall include the items listed below.
1. The project name, Abatement Contractor, Abatement Contractor license number, EPA waste generator number, work duration, material removed, respiratory protection employed, waste manifest signed by the waste disposal facility, total quantity of waste
  2. Certification of the Abatement Contractor's employees.

3. Visitor/Worker Entry Log: The daily log of all personnel including the Abatement Contractor's employees and agents who enter the work area while asbestos abatement operations are in progress, until final clearance is received that the work area is asbestos free. The log shall contain the listed information as a minimum and shall be certified by the Qualified Consultant.
  - a. Date of visit/worker entry
  - b. Visitor/Worker's name, employer, business address and telephone number
  - c. Time of entry and exit from work area
  - d. Purpose of visit
  - e. Type of protective clothing and respirator worn
  - f. Certificate of release signed and filed with the Abatement Contractor, as described in paragraph 3.16.A.
  - g. Clearance certifications received from the Qualified Consultant
4. A statement signed by the Abatement Contractor that all PCB, mercury, and ODS abatement and disposal was completed in compliance with this specification, federal and state regulations, and the approved work plan.

#### **1.11 PROTECTION**

- A. Site Security: The work area is to be restricted only to authorized, trained, and protected personnel. These may include the Abatement Contractor's employees, the Qualified Consultant, and any other designated individuals. A list of authorized personnel shall be established prior to job start.
  1. Entry to the work area by unauthorized individuals shall not be permitted without the express approval of the Engineer and any such entry shall be reported immediately to the Engineer by the Contractor.
  2. A Visitor's Log shall be maintained.
  3. The Abatement Contractor shall have control, subject to approval of the Engineer, of security in the work area and in proximity of Contractor's equipment and materials.
  4. Food, drink, and smoking materials shall not be permitted in areas where PCB or mercury are handled or where PCB, mercury, or ODS items are stored.
- B. Site Protection and Safety: As a minimum follow the requirements of EPA, HIOSH (State of Hawaii), OSHA and NIOSH.
- C. Safeguarding of Property: The Contractor shall take whatever steps necessary to safeguard his work and also the property of Authority and other individuals in the vicinity of his work area during the execution of this Contract. He shall be responsible for and make good on any and all damages by his employees negligence.

## **1.12 QUALITY ASSURANCE**

- A. Training Certificates: Within one year prior to assignment to PCB, mercury, and ODS work, each employee shall be instructed by a Certified Industrial Hygienist (CIH) or equivalent safety specialist with regard to the hazards of PCB, mercury, and ODS, safety and health precautions, the use and requirements for protective clothing, equipment, and respirators, and the additional requirements 40 CFR 761 and 29 CFR 1910.120. Fully cover engineering and other hazard control techniques and procedures. Submit certificates signed and dated by the CIH or equivalent safety specialist indicating that the employee has received training.
  
- B. Qualified Consultant: Person hired by State, who is educated and trained in recognizing and evaluating work place hazards and stress and providing guidance on the methods and means of removing or correcting such hazards and stresses within the work environment. The Qualified Consultant shall be onsite for the duration of the removal and disposal of PCB-containing material and mercury-containing material. The Qualified Consultant shall be on the job site conducting the inspection of the PCB, mercury, and ODS material removal work to ensure that the requirements of the contract have been satisfied during the PCB, mercury, and ODS material removal operation. At a minimum, he or she shall have Hazardous Materials Handling and Emergency Response Training in accordance with OSHA regulation 29 CFR 1910.120 and Competent person training in accordance with OSHA 20 CFR 1926.32 or equivalent training and work experience.

## **PART 2 - PRODUCTS**

### **2.01 TOOLS AND EQUIPMENT**

- A. PCB, mercury, and ODS Spill Kit: Assemble a spill kit to include several pairs of the following items (at minimum):
  - 1. Disposable polyethylene gloves
  - 2. Disposable Coveralls
  - 3. Chemical Safety Goggles
  - 4. Disposable polyethylene foot covers
  - 5. PCB Caution Sign: "PCB Spill--Authorized Personnel Only" and Mercury Caution Sign: "Mercury Spill--Authorized Personnel Only"
  - 6. 100 foot caution tape
  - 7. Absorbent material
  - 8. Polyethylene waste bags
  - 9. Cloth backed tape
  - 10. Rags
  - 11. Paper and writing equipment

## 12. Waste containers

### **2.02 PERSONNEL PROTECTION REQUIREMENTS**

- A. The Contractor acknowledges that he alone is responsible for the instruction and for enforcing personnel protection requirements, and that these specifications provide only a minimum acceptable standard. If other potentially hazardous materials are used, the Contractor shall comply with all applicable regulations that exist for that particular hazardous material and to ensure worker safety and health.
- B. Respiratory Protection: The Contractor shall provide all respiratory protection to workers in accordance with the submitted written respiratory protection program, which includes all items in 29 CFR 1910.134(b)(I-II).
- C. Furnish the Qualified Consultant with two complete sets of personal protective equipment daily, as required herein, for entry to and inspection of the PCB control area. The personal protective equipment shall include respirators, and disposable protective whole body covering. The personal protective equipment shall remain the property of the Contractor.
  - 1. Respirators: Select respirators approved by the National Institute for Occupational Safety and Health (NIOSH), Department of Health and Human Services, for use in atmospheres containing PCB, mercury, and ODS material. Respirators shall comply with the requirements of 29 CFR 1910.134.
  - 2. Protective Clothing: Furnish personnel exposed to PCB, mercury, and ODS material with fire-retardant, disposable protective whole body clothing, head covering, gloves, and foot coverings. Furnish disposable plastic or rubber gloves and footwear to protect hands and feet respectively. Reduce the level of protection only after approval from the Qualified Consultant.
- D. Workers shall wear and use PPE during PCB, mercury, and ODS removal. Workers' personnel protection equipment, as required by OSHA regulations, shall consist of but not limited to the following
  - 1. Disposable coveralls
  - 2. Disposable rubber gloves
  - 3. Disposable foot covers (polyethylene)
  - 4. Chemical Safety Goggles

## **PART 3 - EXECUTION**

### **3.01 PCB, MERCURY, AND ODS CONTROL AREA**

- A. Establish a PCB, mercury, and ODS control area by roping off the area to prevent unauthorized entry of personnel. No one will be permitted in the PCB, mercury, and ODS control area unless the person is provided with appropriate training and protective equipment. Food, drink and smoking materials is prohibited in the designated PCB, mercury, and ODS control area.

### **3.02 PERSONAL PROTECTIVE EQUIPMENT**

- A. Workers shall wear and use personal protective equipment upon entering the work area. Footwear and disposable rubber gloves shall be worn at all times during the removal process.

### **3.03 SPECIAL HAZARDS**

- A. PCB, mercury, and ODS shall not be exposed to open flames or other high temperature sources since toxic decomposition by-products may be produced.
- B. PCB, mercury, and ODS shall not be heated to temperatures of 135 degrees Fahrenheit or higher.
- C. Avoid breaking mercury containing lamps. Vapors/fumes are hazardous. Package lamps to avoid breakage during shipping to mainland disposal/recycling site.

### **3.04 WORK PROCEDURE**

- A. The polychlorinated biphenyls and mercury work shall generally include the removal of existing fluorescent light ballasts containing polychlorinated biphenyls and mercury containing fluorescent light tubes. Personnel shall wear and use protective clothing and equipment as specified herein. Eating, smoking, or drinking shall not be permitted in the PCB, mercury, and ODS control area. No one will be permitted in the PCB, mercury, and ODS control area unless the person is provided with appropriate training and protective equipment. Package and mark PCB, mercury, and ODS materials as required by EPA and DOT regulations and dispose of in accordance with EPA, DOT, and local regulations at a permitted site.
- B. PCB, mercury, and ODS Control Area Requirements: Establish a PCB, mercury, and ODS control area by roping off the area or providing curtains, portable partitions or other enclosures. No one will be permitted in the PCB, mercury, and ODS control area unless the person is provided with appropriate training and protective equipment. During the PCB, mercury, and ODS removal operation, should the employees need to exit the controlled area, they will be required to remove their disposable coveralls, place them in an approved impermeable disposal bag, and then exit the area. The Contractor is solely responsible for complying with any and all regulations concerning his employees' safety and health.
- C. Inspection: Inspection and reporting shall be performed by the Qualified Consultant.
- D. Inspection During PCB, mercury, and ODS Removal Work: The Qualified Consultant shall perform daily inspections during the entire PCB, mercury, and ODS removal operation. If the adjacent areas are contaminated, the contaminated areas shall be cleaned, ventilated and visually inspected. Only when the area is deemed essentially free of PCB, mercury, and ODS-containing waste materials, will unprotected persons be allowed into the area.

### **3.05 WORK OPERATIONS**

- A. Ensure that work operations or processes involving PCB, mercury or PCB-contaminated materials are conducted in accordance with 40 CFR 761 and the applicable requirements of this section including but not limited to:



- B. Obtaining advance approval of PCB, mercury, and ODS storage sites.
- C. Notifying the Engineer and Qualified Consultant prior to commencing the operation.
- D. Reporting leaks and spills to the Engineer and Qualified Consultant.
- E. Cleaning up spills.
- F. Maintaining an access log of employees working in a PCB, mercury, and ODS control area and providing a copy to the Engineer upon completion of the operation.
- G. Inspection of PCB, mercury and PCB-contaminated items and waste containers for leaks and forwarding copies of inspection reports to the Engineer.
- H. Maintaining a spill kit as specified in paragraph entitled "PCB, mercury, and ODS Spill Kit."
- I. Maintaining inspection, inventory and spill and testing records.

### **3.06 PCB, MERCURY, AND ODS REMOVAL PROCEDURE/PROCESS**

- A. Select PCB, mercury, and ODS removal procedure to minimize contamination of work areas with PCB, mercury or other PCB-contaminated debris/waste. Handle PCB, mercury, and ODS such that no skin contact occurs. PCB, mercury, and ODS removal process should be described in the work plan.
- B. Removal of PCB Containing Light Fixtures and Mercury Containing Lamps:
  - 1. "PCB or Hg Authorized Personnel Only" or "PCB or Hg Spill Authorized Personnel Only" caution signs shall be posted at a distance sufficiently far enough away from the work area to permit a person to read the sign and take the necessary protective measures to avoid exposure.
  - 2. All light fixtures shall be de-energized prior to the light fixture removal.
  - 3. Remove mercury containing lamps, package and recycle as specified in this section. Avoid breaking the lamps.
  - 4. Workers shall wear rubber gloves, safety glasses, and other necessary personnel protective equipment at all times during the fluorescent light fixture removal process.
  - 5. Remove fluorescent light ballasts in whole. If the light fixture ballast is leaking and it is not possible or feasible to clean the light fixture, dispose of entire fixture as PCB contaminated material.
  - 6. If the fluorescent light fixtures are leaking oil, avoid ingestion, contact with skin, and inhalation and follow this section for PCB clean-up procedures.
  - 7. Dispose of all PCB containing and contaminated material as specified in this section.

### **3.07 CONTROL AREA**

- A. Only personnel who have PCB, mercury, and ODS training shall be allowed in work area.

### **3.08 TEMPERATURES**

- A. As feasible, handle PCB, mercury, and ODS at ambient temperatures and not at elevated temperatures to avoid the risk of vaporization.

### **3.09 SOLVENT CLEANING**

- A. Cleaning of tools or equipment: cleaning of contaminated tools or equipment shall be wiped or rinsed down with a solvent wetted rag.

### **3.10 EMERGENCY PLANNING PROCEDURES**

- A. Emergency planning procedures shall be written for the evacuation of injured workers. Aid for a seriously injured worker shall not be delayed for reasons of decontamination.

### **3.11 PCB, MERCURY, AND ODS SPILL CLEANUP REQUIREMENTS**

- A. PCB, mercury, and ODS Spills: The Contractor shall immediately report any PCB, mercury, and ODS spills on the ground or in the water, or leaks.
- B. PCB, mercury, and ODS Spill Control Area: Rope off the area around the PCB and/or mercury spill or leak area and post a "PCB Spill Authorized Personnel Only" and/or "Mercury Spill Authorized Personnel Only" caution sign. Immediately transfer leaking items to a drip pan or other container.
- C. Mercury Spill Cleanup: The mercury cleanup shall begin immediately after its discovery and after vapors are no longer visible (for mercury-containing lamp breaks). The personnel shall wear personal protective equipment specified in the specifications. The spill area shall be mopped up or cleaned up with absorbent material in the PCB, mercury, and ODS spill kit. The material used to clean up the mercury material shall be properly contained and disposed of as solid mercury waste.
- D. PCB Spill Cleanup: The PCB cleanup will be in accordance with disposal requirements and procedures outlined in 40 CFR 761, Subpart G. Clean-up procedures shall begin immediately but no later than 48 hours after its discovery. The personnel shall wear personal protective equipment specified in the specifications. The spill will be mopped up or cleaned up with absorbent material in PCB spill kit. The material used to clean up the PCB material shall be properly contained and disposed of as solid PCB waste.
- E. Record Keeping and Certification: Document the cleanup in accordance with 40 CFR 761, Section 125, Requirement for PCB Spill Cleanup. Provide certification of decontamination.
- F. Sampling Requirements: Perform post cleanup sampling as required by 40 CFR 761, Section 130, Sampling Requirements. Do not remove boundaries of the PCB, mercury, and ODS control area until site is determined clean by the Qualified Consultant.

### **3.12 STORAGE FOR DISPOSAL**

- A. Storage Container for PCB, mercury, and ODS: The Contractor shall comply with requirements and procedures outlined in 40 CFR 178. Store liquid PCB in UN approved and Department of Transportation (DOT) Specifications 17E containers. Store non-liquid PCB mixtures, article, or equipment in DOT Specifications 5, 5b, or 17C containers with removable heads.
- B. Waste Containers, Articles and PCB, mercury, and ODS-Contaminated Items: Label with the following:
  - 1. "Solid (or liquid) Waste Polychlorinated Biphenyls" and "Mercury Containing Lamps" as applicable.
  - 2. PCB, mercury, and ODS Caution Label
  - 3. The date the items were placed in storage and the name of the cognizant activity/building.

### **3.13 APPROVAL OF TEMPORARY STORAGE SITE**

- A. Obtain the Engineer's approval to store the PCB, mercury, and ODS materials and containers.
- B. The following criteria will be followed to select a storage site:
  - 1. Adequate roof and wall to prevent rainwater from reaching the stored PCB or mercury.
  - 2. Floors constructed of smooth and impervious material to prevent or minimize penetrations of PCB or mercury.
  - 3. No drain valve, floor drains, expansion joints, sewer lines or other openings that would permit liquids to flow from the controlled area.
- C. Temporary onsite storage shall not exceed 10 working days from end of removal work.

### **3.14 CLEANUP**

- A. Clean surfaces within the PCB, mercury, and ODS control area daily. Do not allow PCB or mercury material, debris and dust to accumulate. Restrict the spread of dust, debris, vapors and fumes; keep waste from being distributed over the general area. Do not remove the PCB, mercury, and ODS control area or roped-off perimeter and warning signs prior to the Engineer's receipt of the Qualified Consultant's certification. The Qualified Consultant will visually inspect the affected surfaces for residual PCB, mercury, and ODS material and accumulated dust before the removal of the PCB, mercury, and ODS controlled area. The Contractor shall re-clean areas showing dust or residual PCB or mercury material.

### **3.15 DISPOSAL OF PCB, MERCURY, AND ODS MATERIALS**

- A. Local waste disposal facilities do not accept PCB, mercury, or ODS waste.
- B. The Contractor shall be responsible for all costs for disposal of waste generated from this project and shall provide copies of all waste disposal documentation (including any required lab analyses, waste profiles, and any other supporting

documentation) to the HIARNG-ENV and the Engineer, along with draft copies of the waste manifests for review prior to waste shipment off-site for disposal. The applicable HIARNG EPA ID Number shall be used on waste manifests, and manifests will only be signed by individuals authorized by HIARNG-ENG.

- C. PCB, mercury, and ODS disposal shall comply with requirements and procedures outlined in 40 CFR 761. LOCAL WASTE DISPOSAL FACILITIES GENERALLY DO NOT ACCEPT PCB, MERCURY, OR ODS WASTE.
- D. The Contractor shall provide all lab analyses results to the Engineer and HIARNG-ENG for review prior to disposal of non-hazardous or hazardous waste.

**3.16 CERTIFICATE OF DISPOSAL**

- A. Certificate of disposal shall be submitted to the Qualified Consultant and the Engineer within 30 days of the date that the disposal of the PCB, mercury, and ODS waste identified on the manifest was completed. Certificate for the PCB, mercury and PCB items disposed shall include:
  - 1. The shipping papers shall use chain-of-custody form and include names and addresses of the disposal/recycling facility, the Contractor, EPA Identification, and the Landfill Operator and information on the type and number of waste containers.
  - 2. The identity of the PCB, mercury, and ODS waste affected by the Certificate of Disposal including reference to the manifest number for the shipment.
  - 3. A statement certifying the fact of disposal of the identified PCB, mercury, and ODS waste, including the date(s) of disposal, and identifying the disposal process used.
  - 4. Completed Waste Collection Log, Monthly Waste Generation Report, and Hazardous Material Inventory Log, that are provided in SECTION 01430 - ENVIRONMENTAL PROTECTION.
  - 5. A certification as defined in 40 CFR 761, Section 3.

END OF SECTION

## **SECTION 13288 - TESTING AND AIR MONITORING**

### **PART 1 - GENERAL**

#### **1.01 SUMMARY**

- A. In performing this project, all possible safeguards, precautions and protective measures shall be utilized to prevent exposure of any individual to asbestos and lead particulates.
- B. This section includes:
  - 1. Contractor's Responsibilities for personnel monitoring and record keeping.
  - 2. Project air monitoring and inspectional services for the purpose of:
    - a. Verifying compliance with the specifications listed in SECTION 13281 - ASBESTOS ABATEMENT and SECTION 13282 - LEAD-CONTAINING PAINT CONTROL MEASURES.
    - b. Ensuring that the State's legally required documentation is collected.
    - c. Providing engineering control during the project.

#### **1.02 DEFINITIONS**

- A. ACM: Asbestos Containing Materials.
- B. Building Representative(s): The person or persons designated by the users of the building to act on their behalf.
- C. Contractor: The construction firm engaged to remove, encapsulate and/or dispose of the ACM.
- D. Contractor/Supervisor: Individual who supervises asbestos abatement work and has EPA Model Accreditation Plan "Contractor/Supervisor" training; and has State of Hawaii certification as a "Contractor/Supervisor".
- E. Engineer: The DOD Chief Engineering Officer, or the authorized person to act in the Engineer's behalf.
- F. Project Designer: Person who determines how asbestos abatement work should be conducted; has EPA Model Accreditation Plan (MAP) "Project Designer" training; accreditation required by 40 CFR 763, Subpart E, Appendix C; and has State of Hawaii certification as a "Project Designer".
- G. Project Monitor: An individual, certified by the State of Hawaii Department of Health, to perform asbestos abatement project monitoring duties, including, but not limited to, area air monitoring, project enclosure inspection, removal method inspections and clearance inspections; has HDOH "Project Monitor" certification, as described in 11 HAR 504.
- H. Qualified Consultant: A third party independent consultant hired by the Contractor who will produce the Contractor's abatement work plan; perform air monitoring

and inspection during abatement work; assist the Contractor's Competent Person in implementing and ensuring that safety, health, and specification requirements are complied with during the performance of all work; and shall have both "stop work authority" and authority to initiate engineering controls. The Qualified Consultant will be completely independent from the Contractor according to federal, state, or local regulations; that is, will not be a Contractor's employee or be an employee or principal of a firm in a business relationship with the Contractor negating such independent status. The Qualified Consultant will be accredited as a State of Hawaii Department of Health accredited Contractor/Supervisor, Project Designer, and Project Monitor with at least 5 years of practical onsite asbestos abatement project monitoring experience. The Qualified Consultant will also be certified in the practice of industrial hygiene as determined and documented by the American Board of Industrial Hygiene (ABIH).

### **1.03 COORDINATION**

- A. Coordinate with the State's Inspector for the testing/air monitoring requirements included in SECTION 13281 - ASBESTOS ABATEMENT and SECTION 13282 - LEAD-CONTAINING PAINT CONTROL MEASURES for testing/air monitoring consultants or inspectors, and all applicable Federal, State and local regulations.

### **1.04 PRE-CONSTRUCTION CONFERENCE**

- A. Hold conference prior to construction and shall be conducted by the Engineer and the Construction Manager, assisted by the Qualified Consultant.
  - 1. Attendance: Present also shall be the contractor, project designer, user agency and/or building representative(s), and air monitoring personnel.
  - 2. Agenda:
    - a. Review final schedule for project.
    - b. Verify legal requirements and special conditions.
    - c. Verify compliance with pre-construction requirement.
    - 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**

### **2.01 TOOLS AND EQUIPMENT**

- A. Air Monitoring Equipment: The Contractor's Qualified Consultant shall approve air monitoring equipment. The equipment shall include, but shall not be limited to:
  - 1. High-volume sampling pumps that can be calibrated and operated at a constant airflow up to 16 liters per minute.

2. Low-volume, battery powered, body-attachable, portable personal pumps that can be calibrated to a constant airflow up to approximately 3.5 liters per minute, and a self-contained, rechargeable power pack capable of sustaining the calibrated flow rate for a minimum of 10 hours. The pumps shall also be equipped with an automatic flow control unit which shall maintain a constant flow even as filter resistance increases due to accumulation of fiber and debris on the filter surface.
  3. Single-use, standard 25-mm diameter, 0.8-micron pore size, mixed cellulose ester (MCE) membrane filters and open-faced cassettes fitted with 50 mm electrically conductive extension cowl, and shrink bands for personal air sampling.
  4. Single-use, standard 25-mm diameter, 0.45-micron pore size, MCE filters and open-faced cassettes fitted with 50 mm electrically conductive extension cowl, and shrink bands when conducting environmental area sampling using NIOSH 2003-154 Methods 7400 and 7402 (and the TEM method specified in 40 CFR 763 if required).
- B. A flow calibrator capable of calibration to within plus or minus 2 percent of reading over a temperature range of minus 4 to plus 140 degrees Fahrenheit and traceable to a NIST primary standard.

### **PART 3 - EXECUTION**

#### **3.01 CONTRACTOR'S RESPONSIBILITIES**

- A. The Contractor shall be responsible for providing the personal monitoring and necessary records for all of the Contractor's employees as required by OSHA (29 CFR 1926.58), Hawaii State Law (12-145) and all other applicable law.
- B. The Contractor shall obtain the legally required reports for air monitoring as part of the contract.
- C. Monitoring information developed by the State's Inspector's activities shall be for the use of the Engineer. The information will be available and offered to the Contractor when developed, but not thereafter, and shall not waive the Contractor's obligations stated elsewhere in this section.
- D. Air monitoring and testing which becomes necessary in order to follow up on work by the Contractor which is rejected as not conforming to the requirements will be supplied by the Engineer. However, the full cost of such additional monitoring and testing shall be borne by the Contractor, and shall be deducted from the final contract payment.
- E. Personal air monitoring that is part of the Inspector's scope of work shall be accommodated by the Contractor.

#### **3.02 AIR MONITORING AND INSPECTIONAL SERVICES**



- A. Duties of the Qualified Consultant
  - 1. Photographic Record of Project: Record the asbestos abatement project with representative photos. All photos shall become the property of the State and are to be accompanied by a detailed log.
  - 2. Project Log: Maintain daily field reports detailing all key activities during abatement and make a summary of project activities to the project designer and the Engineer. Incorporate the contents of the daily field reports with other project data into a final project report.
  - 3. Visual Inspection of all Containment Areas: Perform regular inspection of all containment areas. Conduct inspections during the actual work performance of the contractor to document the work practices employed by the contractor and prior to air testing in each area to verify that all materials scheduled for abatement were removed and the area was properly cleaned.
  - 4. Issuance of Change Order: If changes are necessary once construction begins, review request for change and make a recommendation to the Engineer for approval. The issuance of the change order must be performed by the Engineer.
- B. Air Monitoring: The consultant's onsite Qualified Consultant shall perform the following activities associated with this portion of the project:
  - 1. On-site environmental and personnel air monitoring as required by EPA, OSHA, and the project specifications (See methodology below).
  - 2. Laboratory analysis by PCM analysis using NIOSH 7400 method.  
  
NOTE: For AHERA projects, TEM analysis will be required for final clearance.
  - 3. Monitoring of decontamination procedures at site entry/exit.
  - 4. Monitoring of containment maintenance by visual and instrumental inspection.
  - 5. Interface with project inspectors, building representatives, representatives of regulatory agencies, and project designers during site visits.
  - 6. Ensure that proper respiratory protection is utilized by all persons at the project site.
  - 7. Relay to the Engineer any discrepancies in contractor's action with provisions of project specifications.
  - 8. Act quickly in case of emergencies with appropriate response.

### **3.03 SAMPLING DESIGN**

- A. The Contractor's CIH shall be responsible for designing the sampling program, considering the requirements of these specifications and all applicable law. Exposure assessment, air monitoring, and analysis of airborne concentration of asbestos fibers must be performed in accordance with 29 CFR 1926.1101, and the Contractor's AHAP. Results of breathing zone samples must be posted at the job site and made available to the Engineer.

1. Worker Exposure:
  - a. The Contractor's Qualified Consultant shall collect samples representative of the exposure of each employee who is assign to work within a regulated area. Breathing zone samples shall be taken for at least 25 percent of the workers in each shift, or a minimum of 2, whichever is greater. Air monitoring results at the 95 percent confidence level shall be calculated.
  - b. Provide an independent laboratory with the qualifications listed in paragraph **Error! Reference source not found.**, using the methods prescribed in 29 CFR 1926.1101, to include NIOSH 2003-154 Method 7400.
  - c. Workers shall not be exposed to an airborne fiber concentration in excess of 1.0 f/cc, as averaged over a sampling period of 30 minutes. Should a personal excursion concentration of 1.0 f/c, expressed as a 30-minute sample, occur inside a regulated work area, stop work immediately, notify the Engineer, and implement additional engineering controls and work practice controls to reduce airborne fiber levels below prescribed limits in the work area. Do not restart until authorized by the Engineer.
2. Environmental Exposure:
  - a. All environmental air monitoring must be performed by the Contractor's Qualified Consultant.
  - b. Environmental and final clearance air monitoring shall be performed using NIOSH 2003-154 Method 7400 (PCM) with option confirmation of results by TEM.
  - c. For environmental and final clearance, air monitoring shall be conducted at a sufficient velocity and duration to establish the limit of detection of the method used at 0.005 f/cc.
  - d. When confirming asbestos fiber concentrations (f/cc) from environmental and final clearance samples, use TEM in accordance with NIOSH 2003-154 Method 7402. When such confirmation is conducted, it must be from the same sample filter used for the NIOSH 2003-154 Method 7400 PCM analysis. All confirmation of asbestos fiber concentrations, using NIOSH 2003-154 Method 7402, shall be at the Contractor's expense.
  - e. Monitoring may be duplicated by the State at the discretion of the Engineer, and at the State's expense.
  - f. Maintain a fiber concentration inside a regulated area less than or equal to 0.1 f/cc expressed as an 8 hour, time-weighted average (TWA) during the asbestos abatement.
  - g. At the discretion of the Engineer, fiber concentration may exceed 0.1 f/cc but shall not exceed 1.0 f/cc expressed as an 8-hour TWA. Should an environmental concentration of 1.0 f/cc expressed as an 8-hour TWA occur inside a regulated work area, stop work immediately, notify the Engineer, and implement additional engineering controls and work practice controls

to reduce airborne fiber levels below prescribed limits in the work area. Work shall not restart until authorized by the Engineer.

3. Initial Exposure Assessment

- a. The Contractor's Qualified Consultant shall conduct an exposure assessment immediately before or at the initiation of an asbestos abatement operation to ascertain expected exposures during that operation. The assessment shall be completed in time to comply with the requirements, which are triggered by exposure data or the lack of a negative exposure assessment, and to provide information necessary to assure that all control systems planned are appropriate for that operation. The assessment shall take into consideration both the monitoring results and all observations, information or calculations which indicate employee exposure to asbestos, including any previous monitoring conducted in the workplace, or of the operations of the Contractor which indicate the levels of airborne asbestos likely to be encountered on the job.

4. Negative Exposure Assessment

- a. The Contractor has the option to provide a negative exposure assessment, at his own risk. A negative exposure assessment, if pursued, shall be directly comparable to the specific asbestos job, and will only be acceptable if it conforms to the following criteria:

- i. Objective Data: Objective data must demonstrate that the product or material containing asbestos minerals or the activity involving such product or material cannot release airborne fibers in concentrations exceeding the PEL-TWA and PEL-Excursion Limit under those work conditions having the greatest potential for releasing asbestos.
- ii. Comparability of Prior Asbestos Jobs: Use of data from prior work will only be acceptable if, at a minimum, the Contractor has monitored prior asbestos jobs for the PEL and the PEL-Excursion Limit within 12 months of the current job, the monitoring and analysis were performed in compliance with asbestos standard in effect; the data were obtained during work operations conducted under workplace conditions closely resembling the processes, type of material, control methods, work practices, and environmental conditions used and prevailing in the Contractor's current operations; the operations were conducted by employees whose training and experience are no more extensive than that of employees performing the current job; and these data show that under the conditions prevailing and which will prevail in the current workplace, there is a high degree of certainty that the monitoring covered exposure from employee exposures will not exceed the PEL-TWA and PEL-Excursion Limit.

5. Initial Exposure Monitoring:

- a. Initial Exposure Monitoring is required. The results of initial exposure monitoring of the current job, made from breathing zone air samples that are representative of the 8-hour PEL-TWA and 30-minute short-term exposures of each employee. The monitoring covered exposure from

operations which are most likely during the performance of the entire asbestos job to result in exposures over the PELs.

6. Pre-abatement Environmental Air Monitoring
  - a. The Contractor has the option to conduct Pre-abatement environmental air monitoring. If not conducted, the background concentration shall be assumed to be zero. Pre-abatement environmental air monitoring may be established for each regulated area to determine background concentrations before abatement work begins. As a minimum, pre-abatement air samples shall be collected using NIOSH 2003-154 Method 7400, PCM at these locations: outside each regulated work area; and inside each regulated work area. At least 2 samples shall be collected outside the building: at the exhaust of the HEPA unit; and downwind from the abatement site. The PCM samples shall be analyzed within 24 hours. If any results exhibit fiber concentrations greater than 0.01 f/cc, the results shall be confirmed using NIOSH 2003-154 Method 7402 (TEM).
  
7. Environmental Air Monitoring During Abatement
  - a. Environmental air monitoring shall be conducted at locations and frequencies that will accurately characterize any evolving airborne asbestos fiber concentrations. The assessment shall demonstrate that the product or material containing asbestos minerals, or the abatement involving such product or material, cannot release airborne asbestos fibers in concentrations exceeding 0.01 f/cc as a TWA under those work conditions having the greatest potential for releasing asbestos. The monitoring shall be at least once per shift at locations including, but not limited to, close to the work inside a regulated area; preabatement sampling locations; outside entrances to a regulated area; close to glovebag operations; representative locations outside of the perimeter of a regulated area; inside clean room; and at the exhaust discharge point of local exhaust system ducted to the outside of a containment (if used). If the sampling outside regulated area shows airborne fiber levels have exceeded background or 0.01 f/cc, whichever is greater, work shall be stopped immediately, and the Engineer notified. The condition causing the increase shall be corrected. Work shall not restart until authorized by the Engineer.
  
8. Final Clearance Air Monitoring: The Contractor's Qualified Consultant shall conduct final clearance air monitoring for each regulated work area using aggressive air sampling techniques as defined in 40 CFR 763 Subpart E, Appendix A, Unit III, Nonmandatory TEM Method B.7(d-f), and in accordance with 11 HAR 502-9.
  - a. Final Clearance Requirements, NIOSH 7400 PCM Method: For PCM sampling and analysis using the method specified in NIOSH 7400, abatement inside the regulated area shall be considered complete when none of the air samples detect fiber concentrations greater than 0.01 f/cc. The number of PCM samples obtained per regulated area may vary at the discretion of the Qualified Consultant; however, the results must provide a true representation of the air quality within the regulated area for clearance.
  - b. Air Clearance Failure: If clearance sampling results fail to meet the final clearance requirements, the Contractor shall pay all costs associated with

the required re-cleaning, resampling, and analysis, until final clearance requirements are met.

### **3.04 LABORATORY ANALYSIS**

- A. The testing laboratory will be completely independent from the Contractor as recognized by federal, State, or local regulations. The laboratory must be capable of the following analyses:
1. Phase Contrast Microscopy (PCM): The laboratory will be fully equipped and proficient in conducting PCM analysis of airborne samples using the methods specified by 29 CFR 1926.1101, OSHA method ID-160. The laboratory must be certified proficient (classified as acceptable) in counting airborne asbestos samples by PCM.
  2. Polarized Light Microscopy (PLM): The laboratory will be fully equipped and proficient in conducting PLM analyses of suspect ACM bulk samples in accordance with 40 CFR 763, Subpart E, Appendix E. The laboratory will also be currently accredited by NIST under the NVLAP for bulk asbestos analysis and will use analysts with demonstrated proficiency to conduct PLM analyses.
  3. Transmission Electron Microscopy (TEM): The laboratory will be fully equipped and proficient in conducting TEM analysis of airborne samples using the mandatory method specified by 40 CFR 763, Subpart E, Appendix E. The laboratory will also be currently accredited by NIST under the NVLAP for airborne sample analysis of asbestos by TEM. The laboratory will use analysts with demonstrated proficiency under NVLAP.
  4. PCM/TEM: The laboratory will be fully equipped and each analyst performing the work will be proficient in conducting PCM and TEM analysis of airborne samples using NIOSH 2003-154 Method 7400 (PCM) and NIOSH 2003-154 Method 7402 (TEM confirmation of asbestos content of PCM results) from the same filter.

### **3.05 TEM ANALYSIS**

- A. Samples requiring TEM analysis shall be sent to an approved and certified laboratory which shall be qualified to provide this type of analysis. A short turnaround time is required for receipt of the results. This will affect the project's cost because the shorter the turnaround time imposed on the laboratory, the greater the charge for the analysis. The consultant's TEM lab shall be fully equipped and qualified to complete TEM analysis on all three levels of protocols and shall utilize the level directly related to the information sought:
1. The most rapid procedure for screening many samples. However, results should not be used in legal proceedings.
  2. Level II: Elemental analysis for regulatory action in addition to all Level I specifications.
  3. Level III: Confirmation analysis of controversial samples, required for most legal proceedings.

### **3.06 DAILY TESTING RECORDS**

- A. At the conclusion of every day's testing, the consultant's Qualified Consultant shall provide copies of all air monitoring records of each containment area to the Engineer, the contractor, and the consultant's project manager.

END OF SECTION