Th: Jefferson
MONTICELLO

DEPARTMENT OF ARCHAEOLOGY

Lab Procedures Manual
2021

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Overview

This manual provides an overview of standard laboratory procedures for the Monticello Department of Archaeology. The following sections describe the steps involved in seeing the artifacts from the field to the shelf. These steps are **1) Logging In Bags**, **2) Washing Artifacts and the Processing Log**, **3) Sorting, Bagging, and Labeling**, and **4) Storing**. Cataloging procedures are not discussed in this manual. For a detailed description of the cataloging protocols, see the "DAACS Cataloging Protocols Manuals" available at www.daacs.org.

Tips while working in the lab: The first rule of artifact processing—whether washing, bagging, or labeling—is to work with only one context at a time. This avoids mixing contexts, which would result in the loss of critical provenience information. It is equally important to write legibly. Illegible artifact labels or bag tags also result in the loss of provenience information. Finally, anyone should be able to take over your work at any time. This means that you should document your progress as described in the sections below and report the status of your activities to lab staff before you leave for the day.

Logging in Bags

Field Supervisors, crew, and field school students are responsible for logging in their artifact bags and flotation samples at the end of each day. Artifact bags collected in the field will be entered into the **Artifact Tracking Log** (see Appendix A), which is saved to the department drive can be accessed via any computer in the lab. Please ask a lab staff for assistance logging onto the computer. The spreadsheet, **Artifact Tracking Log V0.4**, includes the log-in date, context, and bag count. Note that each project has its own color-coordinated worksheet tab at the bottom of the spreadsheet. Flotation samples should be entered into the **Flotation Tracking Log VO.1**. This also can be accessed via any computer and is organized in the same way as the artifact tracking log. Once logged in, all the field bags are placed on the shelves in the annex room, or if space is limited, on the black plastic shelves in the hallway. Artifact bags are to be washed by the order in which they were logged in unless otherwise directed by the lab staff. Flotation samples are processed differently. See Appendix B for the procedures on how to process flotation samples.

Washing Artifacts and the Processing Log

Artifacts need to be cleaned as soon as possible. Wash one bag of artifacts at a time and always make sure that the context information is never separated from the artifacts being washed. Every context must have an original brown context tag and a **Processing Log** (Figure 1) before washing begins. The **Processing Log** must be kept with the original brown context tag and must be filled out when each task is completed.

- Cut the original context information from the brown paper field bag and place the paper label in a 3" x 5" polyethylene zipper bag along with a **Processing Log**. Bag labels contain project and site information, context designations, excavator initials, and date.
- Before washing, cut open the bottom of the paper artifact bag to double-check for small artifacts possibly caught under the seam and/or between layers of bags.

- Make sure the **Processing Log** is filled out by copying the **Project** and **Context** information from the excavation bag and placing your initials and date next to the "Washed" heading.
- The bag with both tags **MUST** follow the associated artifacts throughout processing. Eventually, these brown tags will be replaced by a new, acid-free **Bag Tag** (Figure 4) before the artifacts are boxed for storage.

Project:		
Context:		
	Date	Initials
Washed		
Bagged		
Artifact Tags		
Artifacts pulled for labeling		
Re-Integrated		
Catalogued		

FIGURE 1. PROCESSING LOG LABEL

- Empty the contents of the artifacts onto a sorting tray.
- Check for small, fragile, or metal objects that should not be washed or that need gentle treatment (e.g., bone, straight pins, overglazed painted ceramics) and set these to the side to avoid damaging. Any artifact that appears to be particularly fragile or those that could disintegrate in water should not be washed. Typically, fragile artifacts such as these are placed in a film canister or other protective container in the field.
- Separate out all metal (iron, copper, lead, etc.) artifacts for dry brushing.
- Take a drying screen from one of the shelves and place it next to the sink. **Make sure you place the bag with the Processing Log and Brown Context Tag in this screen**.
- Carefully place artifacts that can be washed into one of the small, wooden screens that sit on a plastic basin in the sink.

- Use a small, slow stream of water to wash the artifacts, with all dirty water going into the basin. Take note of the small holes drilled through the sides of the basins. These holes are intended to keep silt and clay in the basin and out of the drainage system.
- Carefully and **thoroughly** wash all other artifacts, especially the edges. A soft-bristled toothbrush will handle almost all of your washing needs.
- Place clean artifacts onto the drying screen you have placed next to you. Group the artifacts by type, i.e., ceramics, buttons, beads, buckles, utensils, tobacco pipes, container glass, nails, bricks, etc.
- Once all the artifacts from a single context are washed and sorted on the drying tray, place them on the wire shelves left of the sinks. Stack the trays on the shelves from top to bottom, so that wet artifacts do not drip down onto a tray of dried or drying artifacts. You may need to move trays that have been drying to the upper shelves to make room for new trays.
- Clean your work area/sink; but **do not empty the basins into the sink.** Instead, gently tilt the basin so that some water flows out the side drain holes (enough that you can carry it without sloshing) and empty the rest in grass or gravel near the float tank outside. Wipe out any residual sediment with a paper towel before putting the basin away, upside down, to dry.
- Wipe any sediment out of the sinks with a paper towel and use the sink sprayer to rinse.

Different contexts from the same project can be placed in the same drying screen. Wooden dividers, which are stored in the kitchen island, should be used to separate contexts within a tray. Keep artifacts away from dividers and **do not put more than 4 contexts** in any given tray. If your context takes up more than 1 drying screen, label all additional screens appropriately with the context and as trays 1 of 3, 2 of 3, etc. If you do not finish washing a context, place a plastic tray of unwashed artifacts *inside* the corresponding drying rack and label it as “in progress” with a sticky note.

Tips for Washing Artifacts

The following are some tips on how to handle certain artifacts. **If you are unsure how to treat an object, please ask the lab staff.**

Ceramics

- Edges of ceramic sherds
    - Clean edges make it easier to mend sherds together and ensure accurate form and paste identification.
- *Overglazed painting* (e.g., reds, greens, yellows and gilding) on ceramics easily rub off.
    - **Do not** use a brush on a surface with overglazed decoration; instead, rub gently with fingers and rinse with a gentle stream of water.
    - If the overglaze appears to be lifting from the surface of the sherd, ***stop washing***.
- *Low-fired ceramics* (i.e. Native American pottery, tin-enameled refined earthenwares like Delft) have soft clays that are easily scored
    - Lightly brush with a wet toothbrush
    - If marking on the surface occurs or tin-enameled glaze separates, ***stop washing***.

Tobacco Pipes

- Brush the edges and surfaces carefully.
- Use dissecting needles to remove all dirt from the bore.
    - The bore diameters are later measured to determine a relative date.

Metal artifacts

- Metal artifacts such as nails, tacks, and buttons should be dry brushed to remove as much dirt as possible.
    - If selected for conservation, artifact should be transferred to a polyethylene bag without any cleaning.
- Do not try to remove any corrosion.

Bricks

- Use the large scrub brushes.

Glass

- Use a bottle brush to help clean bottle necks and interiors of whole containers.
- Do not try to remove patination, the iridescent or golden flaky material that often forms on the surface of glass.

Bone

- Dampen a toothbrush with water and lightly brush the bone. If the bone begins to crumble, ***stop washing.***
- Do not submerge the bone into water.

Sorting, Bagging, and Labeling

It takes artifacts approximately **24 hours to dry**. More porous artifacts, such as brick and mortar, can take several days to dry thoroughly and **should not be bagged until completely dry**. Wet bricks are cool to the touch.

- Once dry, separate artifacts by class (i.e. ceramics, brick, mortar, iron, etc.) and put them in the smallest possible plastic bag.
- Put all bags from the same context into a larger plastic bag with the original brown paper context tag and **Processing Log** (Figure 1).

Make sure fragile artifacts are protected and use film canisters or another protective container to secure these artifacts. All polyethylene bags, except the 3”x5” Bag Tag bag, should be perforated at the top, using a one-hole punch, to allow for air exchange. **If artifacts are too deteriorated or smaller than the punched hole, these artifacts go in a non-perforated bag.** Artifacts collected from float samples are also placed in non-perforated bag.

Once the artifacts are grouped and bagged according to class (e.g., ceramics, glass, metal) for a given context, each bag of grouped artifacts gets a completed **Artifact Tag** (Figure 2). The Artifact Tag is a small acid-free label that includes project and site information as well as a Context Sample ID number. Fill in the Context Sample ID number which consists of the project number, the context number, and the abbreviated recovery method (i.e. 108-2324U-DRS). Once tagged, all artifact bags from a context should be placed into a larger bag that should be no smaller than 4” x 6”. Remember to place the bag containing the Processing Log and Brown Context Tag inside this larger bag as well.

Upon completion of these tasks, add your initials and the date under “Bagged” and “Artifact Tags” on the **Processing Log**.

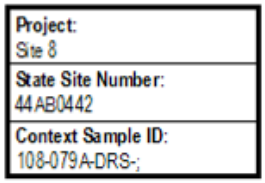

FIGURE 2. ARTIFACT TAG

Sorting and Bagging Guide

With few exceptions, artifacts should be sorted and bagged according to the artifact class listed below. Items listed under a bold heading can be bagged together, while items listed individually must be bagged separately.

For example, all stone from the same context can be bagged together. Likewise, all ceramic sherds from the same context can be bagged together. However, all straight pins should be bagged separate from other copper alloy items.

Starred (*) items in the list below should be bagged by material within each category. For example, if you have one button made from iron and two made from copper alloy, the iron button is bagged separately from the two copper alloys.

Consult the lab staff if you encounter any artifact not represented in the list below.

Bagging Guide

Mortar	**Charcoal**	**Slag**	**Coal and Cinder**
Ceramics	**Tobacco Pipes**		**Beads**
Coins	**Buckles**	**Utensils**	**Buttons**
Stone -Flakes/shatter -Gunflint -Mica -Slate, phyllite, and all architectural stone (Appendix C) -Misc Stone	**Modern** -Aluminum foil -Paint chips -Plastic wrappers -Misc plastic -Pull tabs -All other moderns	**Flat Glass** -Window glass -Mirror glass	**Vessel Glass** -Container glass *All colors*
Shell (Modified)	**Bone (Modified)**	**Iron**	**Lead/Lead Alloys**
Shell (Unmodified) **Separate bags for aquatic shells vs. land snail shells*	**Bone (Unmodified)**	**Copper Alloys** (unidentified items or sheeting/scrap)	**Other Metal**
Brick -Chinking -Daub	**Organics** -Wood -Seeds/Beans/Pits -Corn cobs -Nutshell -Seed pods	**Straight Pins and Hook-and-Eyes** (If same metal)	

Blue: Artifact types bagged together
Green: Artifact types bagged separately by material (i.e., copper buttons and iron buttons in two separate bags)

Items to discard: BandAids, Gum, or any other health hazards.
For discarded items, write out an **Artifact Tag** with the correct information on the front and write on the back what was discarded (Ex: “Gum discarded”). Place the tag in an empty 2”x 3” bag and add to the context bag.

Flotation Samples: Picking, Bagging and Storage

Each sample collected for flotation is given a unique sample number and recorded in the field sample log (i.e. S-02). Once brought to the lab, it is then entered in to the **Flotation Tracking**

Log V0.4 spreadsheet prior to processing. For instructions on how to conduct flotation using the float tank and Flote-Tech system, see Appendix B.

Bagging

Flotation samples are separated by light and heavy fractions. When the flotation samples are dry, bag the light fraction and heavy fraction in separate, appropriately-sized polyethylene bags. **Do not pierce these bags with the hole punch**, as the small size of recovered material will fall through any holes in the bags.

Each bag should receive a temporary tag, pending a permanent printed tag. This tag should include the **quadrat number**, **context**, and **sample number**. The sample number should be written with the quadrat number, followed by the letter S and the sample number (include a 0 in front of single digits) as seen in the following example:

2293C-S-02

Once tagged, place the light and heavy fraction bags for each sample into an appropriately-sized polyethylene bag so that light and heavy fraction for a given sample are bagged/stored together.

Picking

All heavy fraction is picked to identify artifacts to be removed for cataloguing. Any botanical remains (charred wood, seed pods, etc.) found **are not removed unless they are extremely fragile,** but rather left in the heavy fraction residuals for later analysis by an ethnobotanist. Heavy fraction samples should be put through a ¼" and 2 mm sieve. Pick out all artifacts, including brick and mortar, from the ¼" screen. Then pick all artifacts **except brick and mortar** from the 2 mm screen. You can then bag all the remaining rock and coarse granules from these two screens together and label as Heavy Fraction, greater than or equal to 2 mm. Do not pick anything that goes through the 2 mm. Put these residuals in a separate bag and label "Heavy Fraction, less than 2 mm.

Limestone, slate, phyllite, alaskite, architectural stone, and modified stone should be picked out. All unmodified stone above 25mm can be discarded. Unmodified stone below that size can be left in the residuals bag.

After picking, all artifacts recovered are sorted and bagged following the rubric outlined above and then catalogued. Artifacts are stored with their appropriate float sample. Light fraction, heavy fraction artifacts, and heavy fraction residuals should all remain in the same parent bag for each sample and then be boxed for storage.

Labeling

Most diagnostic artifacts (those that have established manufacturing date ranges) are individually labeled (see Figure 3. and "Steps to Successful Labeling"). The remaining non-diagnostic artifacts, such as slag, nails, mortar, brick, flakes, or window glass, are not labeled

but should be sorted by material class into separate zip-lock bags and identified with an artifact tag as described above.

The label written on the artifact itself consists of the State Site Number (without the state designation 44) and the context. For example, an artifact recovered from the Monticello Home Farm Quarter (AB442) in context 133A would be labeled **AB442-133A**.

If the artifact being labeled was recovered from a **float sample**, then the sample number is included in the label as: **AB442-220G-S-05**.

For **projects without State Site Numbers**, labels include an alphabetical project code followed by the context information, such as **NDV-01A** from the North Dependency Vault project. Because **Plantation Survey** has multiple projects, artifacts recovered would include the alphabetical project code, project number, and context information. For example, an artifact recovered from Plantation Survey (Project 6) would be labeled: **PS6-19-P06**.

For unprovienced artifacts, label the artifact with the site number followed by the alphabetical project code and UNPROV. **AB089WKY-UNPROV** would indicate an unprovienced artifact from the West Kitchen Yard. We opt for the alphanumeric code for greater spatial resolution even if the UNPROV falls within an assigned State Site Number. Since there are multiple UNPROV from the same site number but different projects, simply recording the site number would confuse multiple projects.

When	What	Condition
Almost Always:	Ceramics	Label if bigger than 15 mm. Consult the lab staff before labeling unglazed coarsewares (Native American, colonoware, etc)
	Bone	Label if it is worked
	Utensils	
	Tobacco Pipes	
	Container glass	Label if bigger than 15 mm.
Almost Never:	Slag	
	Shell	
	Rocks	
	Mortar	
	Coal	
	Modern Bottle Glass	
	Window glass	Label only if artifact has a finished edge or evidence of manufacturing technique.
	Flower pot sherds	
	Flakes/shatter/core	Label if there is evidence of utilization or working, usually along an edge, such as a projectile point.
	Ferrous Objects	Use an artifact tag with string for unique iron objects.
	Nails	
	Buttons	Use an artifact tag with string.
	Buckles	Use an artifact tag with string.
	Beads	Use an artifact tag with string.

FIGURE 3. WHAT TO LABEL

Labeling Procedure

- Begin the labeling process by writing down the site number and context, the step you are undertaking, the date and time, and your initials on a piece of paper and place it in the labeling tray with the artifacts you are going to label.
- Place one of the small, brightly colored "Artifacts Pulled for Labeling" tags into the original context bag from which you pulled artifacts, being sure it is easily visible.
- **You must add your initials and date under the "Artifacts pulled for labeling" heading on the Processing Log.**
- Label one bag or context at a time and only place one (1) context on each tray.
- Using Excel, print off labels for the contexts you will be labeling. Make sure to generally know how many labels to print off for each context so as not to drastically over or under print labels. These labels should be printed in **Times New Roman**, **size 5 font**, and on regular **acid-free paper** (not cardstock).

- If an area is particularly small, labels can be printed in size 3 or 4 font. Just make sure all the components of the label are easily read.
- Cut out the labels as close to the lettering as possible, making the label as small as possible
- Put a small amount of Liquitex into a film cannister top (dime size or smaller). The glue will dry out if left too long, so start with a small amount and add more as needed.
- Choose an inconspicuous and non-decorated area to label. ***Make sure to check for evidence of overglazed decoration (ghosting)***. ***Do not write on the broken edge (profile) or painted areas of an artifact***. Place the label alongside the edge avoiding central or prominent areas. For glass, choose an area with minimal patination. If you are unsure what area is best, ask the lab staff**.**
- Once you have chosen an appropriate spot for the label, use a stiff paint brush to dab a small amount of Liquitex onto the chosen spot. Then use the wet paintbrush to pick up the label and place it onto the applied glue. Cover the entire paper label with a thin layer of Liquitex.
- Do NOT swipe the label with the Liquitex paintbrush. This can dislodge the label and drag it out of place, or it can smudge the printed label. Instead, gently dab the Liquitex onto the surface of the label, making sure to cover the whole paper.
- Make sure the whole paper label is on the artifact!
- If any mistakes are made (i.e. wrong label applied), simply wash the artifact under water and gently remove the label and Liquitex before starting over. Do NOT put artifacts with overglaze/ghosting under water. Instead use a wet Q-tip or paper towel to dampen the surface and remove the label and glue.
- The artifacts must dry on trays for a minimum of two (2) hours.
- Once the labels are dried, reintegrate the artifacts into their original bags and add your initials and the date under "Reintegrated" on the **Processing Log**. Remove the "Artifacts pulled for labeling" tag. Replace the artifact bag into the appropriate project box.
- Rinse film cannister lid and paint brush under water to remove Liquitex. Make sure to properly clean the brushes so they do not harden over time.
- Sometimes, it will still be preferable to use the paraloid and ink system for labeling certain artifacts (hard-to-apply surfaces, artifacts in humid/un-controlled exhibit spaces, matching labeling procedures for a mended artifact, etc.). If so, refer to an older version of the lab manual on how to complete this process.

Storage

Artifacts are stored in polyethylene, zip-lock bags with their appropriate labels and placed into acid-free Hollinger boxes. They are housed in the climate-controlled environment on-site and arranged by Site. Bags are organized within each site and stored according to their context (alpha-numeric), which is indicated on the permanent context tag. Keep bags in alpha-numerical order by Context within each box.

When the laboratory process is complete, each context is given an official, acid-free **Bag Tag** (Figure 4) that is placed with the original brown context tag in a 3" x 5" polyethylene bag. Make sure the main context bag contains this acid-free card stock tag, with the appropriate provenience information. Ensure the **Bag Tag** is upright and visible from the exterior of the artifact bag. These bag tags are generated in large groups by the lab staff. If an object does not fit neatly into the box, label it and set it aside for oversize storage. Keep the box to a manageable weight—anywhere between 25 and 30 lbs. is acceptable—and be careful not to overfill the box. Check the weight of the box by using the available floor scale. Once the box is full or the weight limit is reached, the box's contents will be added to the Artifact Box Table in the DAACS database. **Box labels** (Figure 5) are then created by the lab staff and each label is affixed to the appropriate box.

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Project:	**Building C (Joiner's Shop)**	**44AB0465**
Context:	109-2408F	
Sample ID:	109-2408F-DRS-;	

Excavated By:	KMC	**Recorded By:**	KMC
Date Opened:	7/14/2014	**Date Closed:**	7/14/2014

FIGURE 4. BAG TAG

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Home Farm Quarter Site 8.001

Project ID	Project Year	Box Location
108	1998, 2000-01	Monticello

Quadrats 79 to 83 and 115 to 135
Dry Screen

FIGURE 5. BOX LABEL

Artifact Removal

When an artifact is removed from its original provenience for any reason—such as for loans, exhibits, the study collection, conservation, or analysis—we must record this action. **Before artifacts can be removed from the lab, they must be cataloged and imaged.** Artifacts must be packed safely in a box and with sufficient padding during transportation.

Tracking artifact removal accurately is the only way to ensure artifacts retain their integrity and make sure artifacts are not stolen or lost. Two protocols exist for artifact removal. **Yellow** slips are used for objects moved/mended between contexts or pulled for the study collection. **Blue** pull slips indicate artifacts have been removed from the archaeology lab.

Protocol 1: If an artifact is removed and placed permanently in the study collection:

- Create an Object record for this artifact in DAACS. Object records should be filled out as completely as possible. Be sure to:
    - Record the location of this artifact in the Study Collection in the "Object Location" box on the "Main" tab by listing the number of the cabinet and the letter of the drawer where it will be placed.
    - You do not need to fill out the "Object Location" tab as this object has not left the archaeology department.

- Fill out an **Object Tag** (Figure 6). This tag will follow the artifact to the study collection. Record all pertinent categories on the front side including: site number, site name, MSC # (if applicable), location in the study collection, DAACS Object ID (you will need to create one if not already assigned) and artifact count. Record either the ER numbers or other context information as labeled on the sherd and include a succinct description of the object. Once complete, place this tag either in a box or in the bag with the artifact and add it to the study collection.

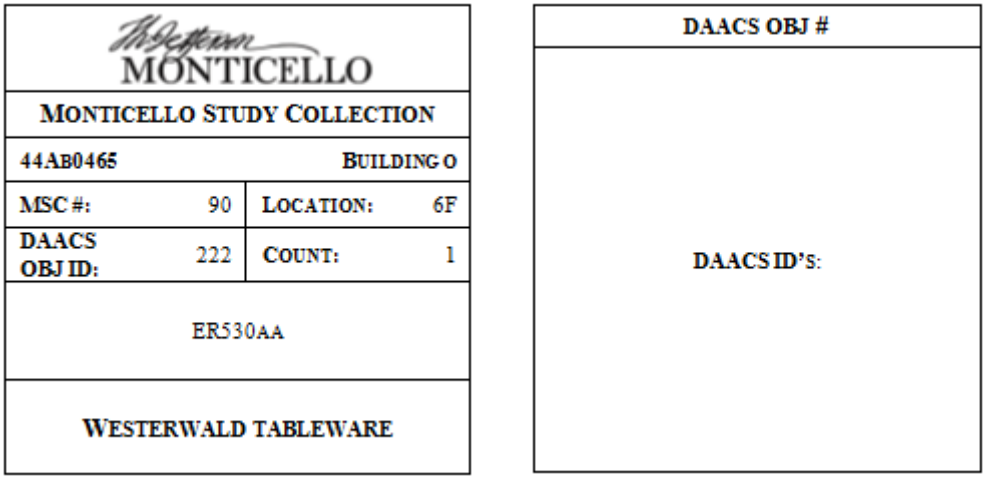

FIGURE 6. STUDY COLLECTION OBJECT TAG (FRONT LEFT, BACK RIGHT)

- Fill out a **yellow**, acid-free pull slip tag (Figure 7) with pertinent provenience information including the new DAACS Object #, location in the study collection, and an artifact description. In an attempt to keep artifact descriptions as uniform as possible, follow the general rules below established and laid out in the DAACS Cataloging Manual for Images:

  (Ceramics) Ware Type, Form (if identifiable), additional details.
  For example: "Pearlware, platter with Pinwheel transfer print."

  (Glass) Form, Color, additional details.
  For example: "Pharmaceutical vial, aqua, Balsam of Life."

  (General Artifacts) Form, Material, additional details.
  For example: "Upholstery tack, copper alloy, hand-made."
  For example: "Unidentified object, iron wrought/forged."

  (Button) Button, Material, additional details.
  For example: "Button, copper alloy, military eagle."

  (Bead) Bead, Material, additional details (Type and/or Color).
  For example: "Bead, Glass, blue polyhedral."

  Descriptions for all other artifact types should follow the same general rules.

Place this yellow pull slip in the bag with the context tag in the original provenience bag.

Th. Jefferson MONTICELLO	**Pull Slip**
DAACS OBJECT ID:	1786513
DAACS #:	48-1200J-NOS—00064
DESCRIPTION:	Chinese Porcelain, Unidentified Hollow Teaware,
Overglaze band & botanical decoration	
MONTICELLO STUDY COLLECTION LOCATION:	5D
DATE: 12/31/15	**INITIALS:** KMC

FIGURE 7. YELLOW PULL SLIP

Protocol 2: If an artifact is removed from the Archaeology Department for any reason (loans, exhibits on foundation property, conservation, or outside analysis, etc.):

- Create an Object record for this artifact in DAACS. Object records should be filled out as completely as possible. Be sure to:
    - Record the current location of this artifact in the "Object Location" box on the "Main" tab. If an object was pulled out of the study collection, leave that as the original "Object location" to ensure it is returned to the study collection.
    - Record all custodial information in the "Object Location" tab. Add the new object location and include:
        - the organization that is now in custody of this artifact (loaned to)
        - contact for that organization (institution contact)
        - date loaned

- Fill out an **Object tag**. This tag will follow the artifact while on loan. Place this tag in the bag or box with the artifact. You may or may not need to create an object tag to follow this artifact. If this was pulled from the study collection, it should already have a tag. If it does not you will need to create an object tag to accompany this artifact. See the protocol above for filling out an object tag (Figure 6).

- Fill out a **blue**, acid-free pull slip tag (Figure 8) with pertinent provenience information including the new DAACS Object ID, the location of the object under Destination, and an artifact description. In an attempt to keep artifact descriptions as uniform as possible, these descriptions should follow the general rules as described above. Place this blue pull slip in the bag or box from which this object/artifact was pulled. Do not remove artifact tags or DAACS cataloged tags from the original context.

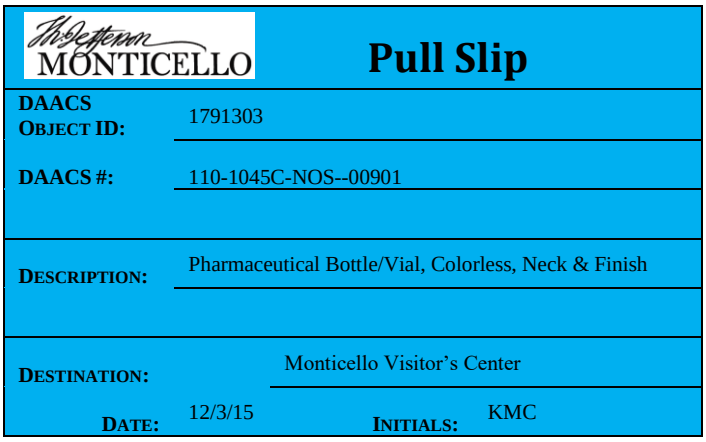

FIGURE 8. BLUE PULL SLIP

Special Cases:

Occasionally, we will need to record the movement of artifacts between bags. This is especially important in cases where artifacts are mended between contexts. These sherds often have old

pull slips already filled out from previous excavations (i.e. old hand written pull slips). In these cases, we need to record this movement though these artifacts are not being stored in the study collection and are not leaving the lab. In these instances:

- Fill out a **yellow**, acid-free pull slip tag with pertinent provenience information including the context of the artifact bag the sherd is being moved to and an artifact description using the general rules as described above.

  If an old pull slip exists from a previous excavation, record the new DAACS ID # on the original tag and staple it to the new yellow pull slip. Place both slips in the context bag located with the Bag Tag and the original brown context tag.

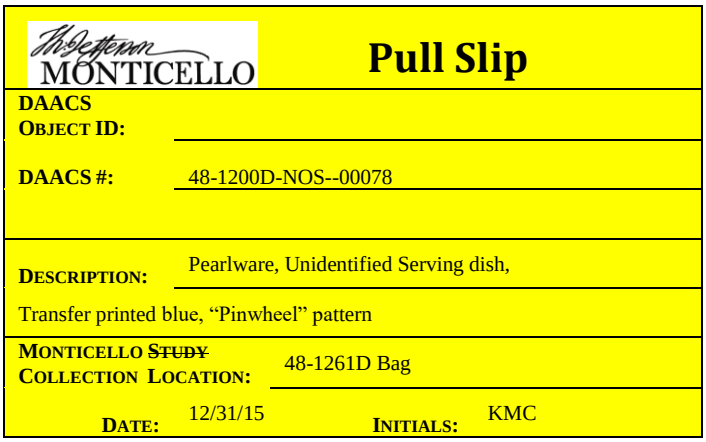

FIGURE 9. PULL SLIPS FOR MENDED SHERDS

Note: if a mended sherd is not being returned to its original artifact bag but is being placed in the study collection or being sent on loan, do not follow this protocol. Return to protocols 1 or 2.

Returning an artifact previously removed from the Department to the collection:

- Once an artifact is returned to Archaeology, record this information in the "Object Location" tab in DAACS. Do not delete any of the object location information. Simply record the date returned for the corresponding loan.
- Record any information on the "Object Location" tab especially from the conservator in the "Notes" box.
- If the object was returned to the study collection, remove the blue pull slip from the study collection.
- If the object was returned to its original artifact bag in artifact storage, remove the blue pull slip from the context bag.

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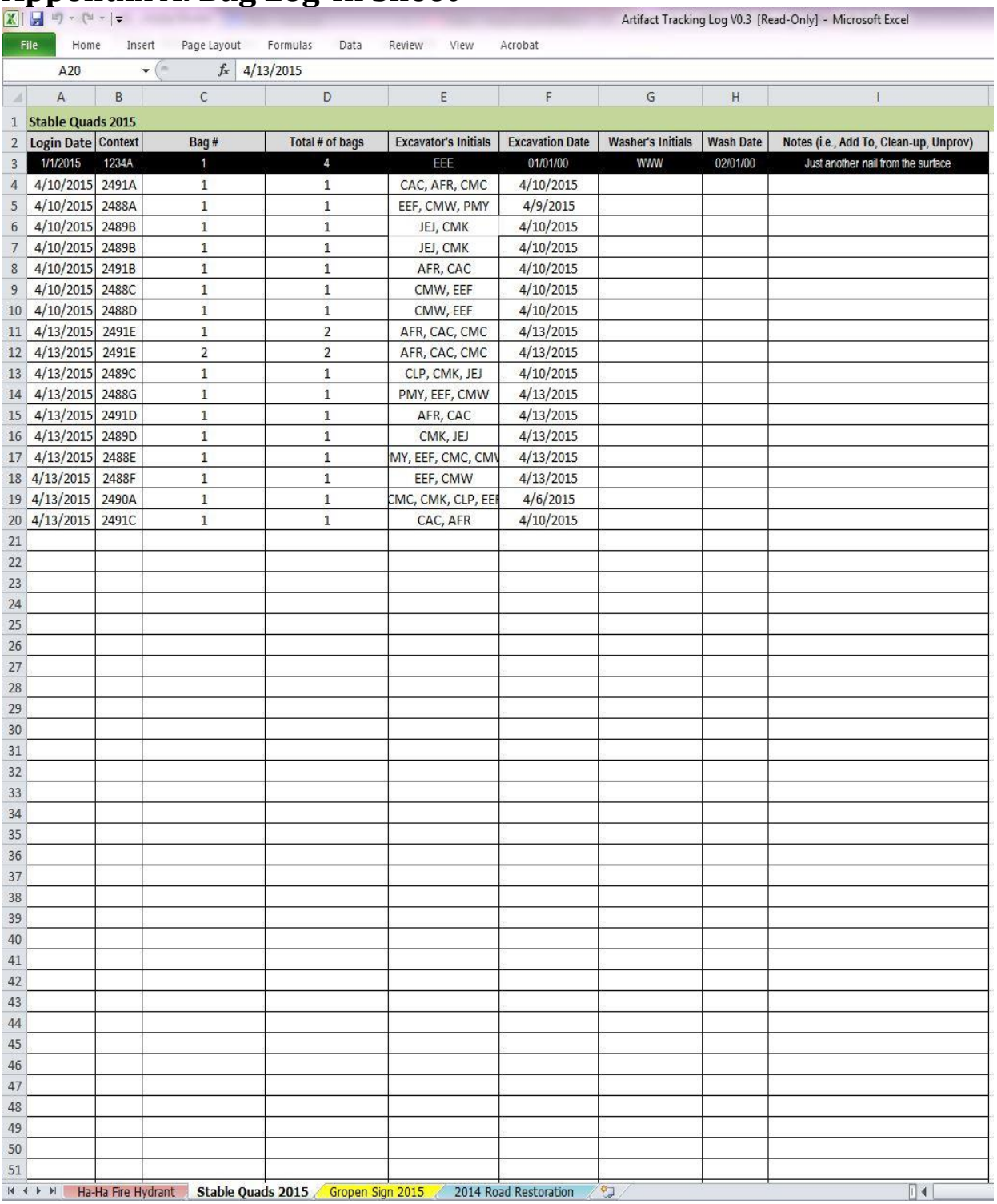
Appendix A. Bag Log-In Sheet



	A	B	C	D	E	F	G	H	I
1	Stable Quads 2015								
2	Login Date	Context	Bag #	Total # of bags	Excavator's Initials	Excavation Date	Washer's Initials	Wash Date	Notes (i.e., Add To, Clean-up, Unprov)
3	1/1/2015	1234A	1	4	EEE	01/01/00	WWW	02/01/00	Just another nail from the surface
4	4/10/2015	2491A	1	1	CAC, AFR, CMC	4/10/2015			
5	4/10/2015	2488A	1	1	EEF, CMW, PMY	4/9/2015			
6	4/10/2015	2489B	1	1	JEJ, CMK	4/10/2015			
7	4/10/2015	2489B	1	1	JEJ, CMK	4/10/2015			
8	4/10/2015	2491B	1	1	AFR, CAC	4/10/2015			
9	4/10/2015	2488C	1	1	CMW, EEF	4/10/2015			
10	4/10/2015	2488D	1	1	CMW, EEF	4/10/2015			
11	4/13/2015	2491E	1	2	AFR, CAC, CMC	4/13/2015			
12	4/13/2015	2491E	2	2	AFR, CAC, CMC	4/13/2015			
13	4/13/2015	2489C	1	1	CLP, CMK, JEJ	4/10/2015			
14	4/13/2015	2488G	1	1	PMY, EEF, CMW	4/13/2015			
15	4/13/2015	2491D	1	1	AFR, CAC	4/13/2015			
16	4/13/2015	2489D	1	1	CMK, JEJ	4/13/2015			
17	4/13/2015	2488E	1	1	MY, EEF, CMC, CMV	4/13/2015			
18	4/13/2015	2488F	1	1	EEF, CMW	4/13/2015			
19	4/13/2015	2490A	1	1	CMC, CMK, CLP, EEF	4/6/2015			
20	4/13/2015	2491C	1	1	CAC, AFR	4/10/2015			
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Ha-Ha Fire Hydrant | Stable Quads 2015 | Gropen Sign 2015 | 2014 Road Restoration

*Note each project has its own color-coded worksheet tab. Always double-check that bags are being logged into the correct project worksheet.

Appendix B. Operating Instructions for Model A Flote-Tech Flotation Machine

Setting Up

1. Before you begin operating the tank, log in your float samples in the float log called "Float Tracking Log V0.1" located in P:\\LabAdmin. Enter your initials and the date. You also need to fill out a brief description of any notable artifacts in the heavy and light fractions of each sample after you finish floating. The float description forms are in a red binder located in the kitchen annex. Complete these forms after you finish floating.

2. Locate the float box in the lab that contains cheesecloths and clips.

3. The float tank consists of two separate compartments. The compartment containing a large, removal bin with a fine mesh screen on the bottom is where you put your running water source and dump your sample. The other compartment is a reservoir tank that contains a shallow pan used to collect the light fraction. Heavy materials will stay on the bottom of the large bin while lighter materials such as charcoal and burned macrobotanicals will float and eventually end up in a light fraction tray. In order to collect both the light and heavy fraction, place a cheese cloth in the fine fraction pan and another in a drying tray from the lab. Secure both cloths to the sides of their respective trays with large binder clips. Put the light fraction pan into the reservoir tank. It should sit level in the tank. Place the heavy fraction tray on the work table attached to the reservoir tank.

Manual Operation

Flotation can be conducted with or without the use of the electronic water pump for mechanical agitation. If the pump is not functional or is otherwise not used for flotation, follow the set-up and operation instructions with the following exceptions:

1. Do not turn on the water pump at any time. No electrical hook-up is necessary.

2. Close the drain valves in the fill tank and the reservoir tank. The drain valves are located at the bottom of the flotation unit and reservoir and have hoses attached to them in order to drain the tank when finished. Fill the reservoir until the water is 1" below the fine fraction pan and then fill the flotation unit until the water overflow into the reservoir. Once there is water in each tank, partially open the **reservoir** drain valve to allow a slow but steady outflow of water. Keep the main flotation tank valve closed until you finish floating. If you do not open the reservoir valve, water will drain from the flotation unit into the reservoir, causing the water level to rise and light fraction residuals to float away. Leave the reservoir drain valve partially open so that the water level in the reservoir does not rise above the level of the fine fraction screen. The rate of water leaving the float tank can be altered by adjusting the valve to achieve the desired water level in the reservoir.

3. Remove the under-flow baffle from the coarse fraction screen box.

4. Each sample should come with two metal tags that have the unit, context, and sample number written on them. If this is not the case, you should take a blank tag and write the information on it. Place one tag in the heavy fraction tray and the other in the light fraction tray.

5. For dense clay samples, pour the sample into a 10 gallon paint bucket. Add ¼ to ½ cup baking soda and enough water to create a slurry mix. Stir together in order to break up clay.

6. Pour the sample into the flotation tank. Light fraction such as charcoal will begin floating to the surface and will pass over into the fine fraction screen. You can use your hands to stir up light fraction items from the bottom of the flotation tank and rise to the surface to flow over the weir into the fine fraction screen.

7. If the sample contains larger artifacts such as ceramic sherds, glass, etc., use a tooth brush to remove excess dirt from the artifacts and place in heavy fraction tray.

8. When all the sediment has been removed and the sample is completely floated, any heavy fraction residuals at the bottom of the flotation unit screen should be deposited in the heavy fraction tray, along with its metal tag. This may require using a hose sprayer and gently spraying the residuals from the unit into the heavy fraction tray. The light fraction should also be removed from the fine fraction pan and placed separately in the same lab drying tray with its tag. All floated samples should be put in the lab drying racks until completely dry.

9. After the samples are floated, write a brief description of any diagnostic artifacts or macrobotanicals that can be identified in the heavy and light fractions in the binder labeled "Flotation Log and Information" located in the kitchen annex.

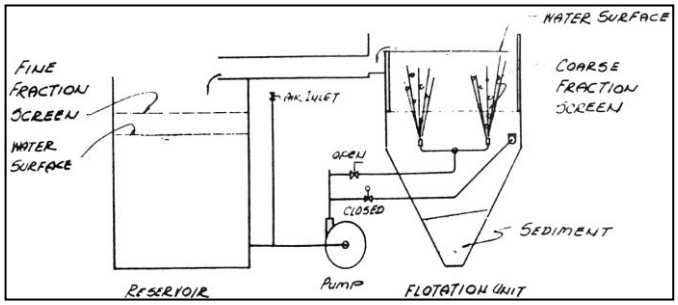
Mechanical Operation Using the Water Pump

1. Place the fine fraction screen in the support pan.

2. Plug in the water pump and turn the pump on. Make sure the water flow control valve is closed.

> NEVER START THE WATER PUMP UNLESS THE WATER DISCHARGE NOZZLES ARE COMPLETELY SUBMERGED.
>
> CAUTION: THE MACHINE IS TO BE OPERATED ONLY WITH 115 VOLTS, 60 HERTZ SINGLE-PHASE ELECTRIC POWER. OPERATION WITH 50 HERTZ MAY DAMAGE ELECTRIC MOTOR.

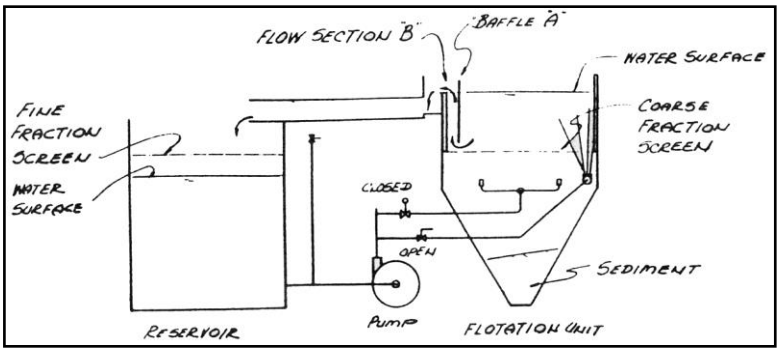
3. If diffused air is desired, open the air flow needle valve until the desired air flow rate is achieved.



4. Swing the two coarse fraction hold-down brackets over the side of the coarse fraction box and tighten down the brackets with the wing nuts. These brackets hold the box from floating up off the rubber seal on the box support shelf when the water is flowing through the system. If this is not done water will flow around the box rather than through it.

5. After making sure the water pump is circulating water in the machine and the under-flow baffle has been removed, place the soil sample into the machine and float off the fine fraction and pass all the sediment into the sediment trap.

> NEVER PLACE THE SOIL SAMPLE INTO THE MACHINE WHEN THE WATER IS NOT FLOWING. SUBSEQUENT SAMPLE CONTAMINATION AND OR LOSS OF OBJECTS TO THE SEDIMENT TRAP MAY OCCUR IF THIS IS DONE.



6. After all the sediment has been removed, insert the under-flow baffle (Baffle A-see image to left) and open the water flow control valve until the desired water flow rate for near-flotables removal has been achieved. Remove the near-flotables by moving the coarse fraction over near the bottom edge of the under-flow baffle. The high velocity water in this area will sweep the near-flotables up and over the discharge weir and onto the fine fraction screen. The higher the water flow rate the heavier the objects will be that are swept over the weir.

7. Turn off the water pump and remove the fine fraction screen and replace it with a clean screen. Loosen the hold-down brackets and remove the coarse fraction screen box from the flotation tank and invert it over the work table. Remove the coarse fraction using the spray hose to wash the material from the screen and the sides of the box. When doing this make sure that a fine fraction screen is in the support pan to collect any material that may be washed over the edge of the work table. The water pump must be running to use the spray hose attached to the flotation unit.

8. Close the flow control valve and remove the under-flow baffle.

9. Put the coarse fraction screen box back in the flotation tank and the machine will be ready for processing the next sample.

10. Write a brief description of any diagnostic artifacts or macrobotanicals identifiable in the heavy and light fractions. These descriptions are kept in the red binder labeled “Flotation Log and Information” located in the kitchen annex.

Cleaning and Removing Sediment from Flote-Tech

1. Sediment in the sediment trap must be removed on a continuing basis. The hand-operated bilge pump mounted on the flotation tank is used for this purpose. Pump the water-sediment mixture into a suitable container such as a 5 gallon bucket and then allow the sediment to settle to the bottom of the bucket and the clean water to collect over the sediment. Pour the clean water back into the water reservoir and discard the sediment. Do this as often as necessary to prevent the level of sediment in the trap from reaching the level of the discharge nozzles in the flotation portion of the flotation tank.

2. Occasionally, the water reservoir has to be examined for sediment build-up. When deemed necessary, the reservoir can be drained and cleaned by use of the water outlet provided and by pumping the water into the flotation tank through the spray nozzle where it can be removed by the hand pump. A small submersible pump can also be used to drain the machine. Do not let the level of sediment in the reservoir reach the level of the hose connecting the reservoir to the intake of the water pump.

Things to keep in mind:

- Turn the water pump off when not processing samples to prolong its life.
- Remove the fine fraction screen with any light fraction floatables if you temporarily stop the flotation process.
- When operating the sediment pump, never apply excessive force to the handle. If the pump does not operate when the handle is pulled with moderate force, it may mean the sediment has been allowed to compact in the sediment trap. If this occurs, probe the sediment with your hand to loosen the soil compaction. To prevent damage to the rubber diaphragm in the hand pump, always be gentle.
- Do not run the pump without pumping water.
- Do not attempt to roll or move the unit when it is full of water.
- During cold weather operations, do not let water freeze in the pipes or pump. Always drain the water from the water pump when not in use.

Appendix C. Rock Identification

At Monticello, discerning between rock types can be challenging due to color and texture variations within each type.

Greenstone (metamorphosed basalt; metabasalt) is the bedrock of the mountain and is therefore the dominant rock type. It is a fine-grained and heavy rock that occurs in a wide variety of bluish and greenish greys. As it decomposes, greenstone can appear in a variety of other colors due to the oxidization of iron, transitioning from yellow, to orange, and eventually to a rusty reddish brown. A characteristic often seen in modified greenstone is conchoidal fracture.

Quartzite is a secondary rock type occurring at Monticello. It consists of iron-rich sands that have been metamorphosed. The grains are visible to the naked eye and are round to sub-angular. These sand grains are predominantly quartz and feldspar, and can impart a light tan color upon the rock. As with greenstone, local variation exists. The iron that occurs in this local quartzite can result in hues of orange and red. Quartzite exhibits both natural heat fracture breaks (typically along flat and smooth surfaces) as well as conchoidal fracture. Both types of breaks happen during modification.

Alaskite occurs and is quarried locally but does not occur naturally on the Mountaintop. It is typically associated with cultural activity on the Mountaintop. It is the dominant architectural material in the all-weather passageway, the privies, the privy ventilation tunnels, and some Mulberry Row structures. This rock is typically salmon/pink in color with small black specks throughout. Its grain size is similar to quartzite and thus easily confused. A distinct difference between Alaskite and Quartzite is that mineral grains are crystalline and thus angular. A hand lens or microscope may be required to distinguish this feature.

Other rocks frequently encountered in the archaeological record at Monticello are **Limestone, Slate, Phyllite, and Soapstone (steatite)**.

Quartz is the most common mineral encountered. It exists as a natural element in the “float” of soils and sediments on the mountain and is most often utilized by humans in association with prehistoric contexts.

If you have questions about rock or mineral identification, please ask a supervisor before moving forward.

Appendix D. Laboratory Etiquette

1) During Field School Lab Rotations, lab work will begin at 8:30am or after any/all morning class lectures. Work will continue until the end of the day or will end prior to any afternoon lectures/workshops.

2) Typical field clothes are not required in the lab. However, keep in mind that some laboratory tasks, such as washing or floating, can damage clothing; plan your apparel accordingly. As in the field, out of respect for your colleagues and visiting members of the public, please remember that we are representatives of the Foundation and the profession of archaeology. Revealing clothing or shirts with sayings or images that may be offensive to others should be avoided.

3) Please refrain from texting, personal phone calls, or the use of headphones that may distract from your learning experience.

4) The wet lab area doubles as the staff kitchen. When washing, keep your area tidy. Clean or put away equipment as much as possible since staff will make use of the kitchen at lunchtime and throughout the day. Students are welcome to make use of kitchen (refrigerator, microwave, dishes, etc.) during their days in the lab. Please be sure to take any food in the refrigerator with you at the end of the day and to clean any dishes that you have used.

5) After washing artifacts, please empty all wash tub water and sediment outdoors and dry and replace the wash tubs. **Do not stack wet tubs!** Alternate the stacking or leave out on drying racks to prevent mold growth. Wipe out any remaining sediment in the sink prior to leaving the kitchen.

Appendix E. Lab Tasks Check List

During lab rotations, we expect each student to accomplish specific laboratory tasks. These jobs are designed to give each student an introduction to the different aspects of lab work typical to most research institutions. We will assign and distribute these tasks during the course of each student's three lab visits; however, it is up to each individual to keep track of what they have accomplished and to call any undone tasks to the attention of the lab TA or lab staff during their last lab rotation.

Task	Date	TA Initials
☐ Washing artifacts	_____	_____
☐ Sorting and bagging artifacts	_____	_____
☐ Labeling artifacts	_____	_____
☐ Overview of DAACS website and catalogue system	_____	_____
☐ Cataloguing artifacts	_____	_____
☐ Review Study Collection	_____	_____
☐ Ware type identification	_____	_____
☐ Flotation	_____	_____