Archaeology Information Bulletin: Artifact Submission Guidelines

Purpose: The Royal Alberta Museum (RAM), Archaeology Section receives and curates all artifacts collected in the Province of Alberta. Artifact Submission Guidelines have been developed to ensure the consistency of submissions of archaeological artifacts, and of all data and documents related to those artifacts, in order to facilitate effective use of artifacts for display, research, and teaching.

Scope: Archaeological consultants working in Alberta

Requirements: The following submission guidelines are effective as of January 1, 2019. All submissions made after this date must adhere to these guidelines. All artifact catalogues submitted to the RAM as of this date must comply with the specifications detailed below. An Excel template for the digital catalogue is attached.

Contents:

1. General Requirements
2. Preparation
3. Numbering and Catalogues
4. Fire-Broken/Cracked-Rock Submissions
5. Historic Brick and Chinking Submissions
6. Soil Samples
7. Submission Packaging
8. Boxes
9. Record Submissions
10. Making Submissions
11. Submission Location

1. General Requirements

All artifacts recovered under an Archaeological Research permit must be catalogued prior to submission to the RAM. Prior to submission, artifacts must be stored in a secure facility, such as an office or lab. Due care must be taken to secure the artifacts and try to reduce the
risk of theft (e.g., artifacts should not be left in vehicles). All artifacts comprising a collection should be submitted at the same time. If some artifacts are needed for further analysis, they should be submitted and then borrowed back from the RAM, so that contents and locations of collections are documented. The standards for submission of artifacts and associated documentation are detailed below.

2. Preparation

Artifacts should be cleaned using water or dry brush. If the object is fragile, dry-brush carefully. If water is used for cleaning, the artifact must be dry before packaging. For rusty metal, surface dirt and rust should be dry-brushed carefully, but rusted metal should not be pulled off. If there are reasons why an artifact should not be cleaned (e.g., when potential future analyses, such as blood residue analysis, is contemplated), the artifact should be placed in a bag that is clearly labeled with Borden number and permit number. It should also be indicated on the bag that the artifact was not cleaned, and the reason for not cleaning should be stated.

Artifacts that have been contaminated by chemical, biological or radioactive hazards must be decontaminated safely prior to submission. When necessary, please consult with Archaeology staff at the RAM for effective conservation procedures.

Conservation

Moist materials (greasy bone) should be wrapped in tin foil and put in a zip lock bag that is perforated. Fragile material and pieces of single artifacts that are associated but are falling apart should be supported with tin foil.

If leather artifacts are wet, they should be taken into a lab or office for treatment prior to drying and placing in storage or they will crack and disintegrate upon drying. To keep them wet, place them inside plastic bags and freeze them until they can be transported to the lab.

If the leather is damp, it should be allowed to dry very slowly. The easiest way to do this is to place the specimen into a plastic bag, left slightly ajar. Place the bag in a refrigerator, and wipe condensation off of the bag daily. If this procedure isn’t possible in the field, the leather should be placed in a plastic bag and frozen until it can be monitored on a daily basis. Prior to
beginning the drying process, leather can be misted with isopropyl alcohol (rubbing alcohol) to prevent mould growth. A 70% concentration is ideal and can be applied with a standard spray bottle on a mist setting. That is also a good way to kill mould if growth has already begun.

If the leather is dry (bone dry), it can be padded with acid-free tissue to maintain the shape, or wrapped in acid-free tissue, and placed inside a plastic bag or container. If at all possible, slip a piece of acid-free tissue between any metal buckles or attachments and the leather to prevent the corrosion from getting onto the leather.

Please contact RAM archaeology staff for advice on infield and post excavation conservation of any other materials.

3. **Numbering and Catalogues**

Each artifact within a collection must be assigned an individual catalogue number. Each number is to consist of the archaeological site’s Borden designation as a prefix, followed by a colon (:) and then the sequential artifact number (e.g., DgOv-1:225). Each artifact (lithic, faunal, ceramic, metal, etc.) must be assigned a catalogue number in a single numeric sequence; distinct artifact classes (e.g., faunal) should not be catalogued separately from other artifact classes. Contact an Archaeology Curatorial Assistant at the RAM to request the next catalogue number in the sequence for each site for which artifacts are being catalogued. Alternative cataloguing schemes (e.g., provenience based) are not acceptable unless written permission is obtained from the Curator of Archaeology, Royal Alberta Museum.

Individual catalogue numbers, with some exceptions, must be written directly on specimens that are recognized as “formed tools” or “artifacts” or are composed of materials generally considered to have some diagnostic significance or analytical and interpretive value. Obvious examples include formed stone tools (points, knives, drills, etc.); ceramic pieces with some distinguishing character (rim, decoration, handle, fingerprint, etc.); faunal specimens showing evidence of human modification. This requirement also pertains to broken or incomplete artifacts such as point tips and bases, biface and uniface fragments, portions of bone tools, etc. Exceptions for the purpose of analysis such as blood residue must be approved by the Curator of Archaeology, Royal Alberta Museum.
Some historic metal artifacts can be unstable, so catalogue numbers should not be written directly on them. Where the artifact is too friable, fragile, or small to make numbering possible, or in instances where numbering may compromise analysis, put the artifact in a zip lock bag and insert a tag that includes the Borden, specimen, and permit numbers. Label the outside of the bag (with permanent ink) as well. Self-adhesive labels or tape should not be used on any bag or box; they fall off over time.

Write the specimen catalogue number on all formed tools using waterproof ink. Black ink should be used on light-coloured artifacts; white ink should be used on dark-coloured artifacts. Once dry, cover the catalogue number with clear nail polish. Do not attach sticky labels to artifacts, as over time these peel off and become separated from the artifact.

A layer of nail polish should not be applied beneath the catalogue number unless the artifact is of a porous material, such as earthenware, sandstone, or porous bone, where the ink might “bleed.” On porous materials, use a clear, uncoloured, undercoating of nail polish, not lacquer. (Lacquer labels dry up and pop off artifacts, removing the number.)

The catalogue number should be placed on a recessed area of the artifact rather than on edges or raised areas where the number can easily be rubbed off. The number should not be placed on a broken surface where it might affect refitting with other pieces. The number should be discretely located on the artifact so as to not adversely affect photography. Avoid putting numbers or nail polish near the edges of tools where they might interfere with subsequent forms of analysis. Exceptions for the purpose of analysis, such as blood residue, can be made by contacting RAM staff. If a specimen is not going to be tested immediately but is a strong candidate for future analysis, it can be packaged appropriately (as described above), labeled as not being marked with a catalogue number and have a label inside the bag with the artifact that has the catalogue number. These artifacts should not be washed as per section 2 above.

Clearly not every formed tool is going to be a good candidate for analysis, depending on its age and context. It is important to note that catalogue number labels will not affect protein residue analysis as long as the label does not cover areas where blood is adhering to the artifact. The label usually comes off during testing but does not appear to negatively affect the protein residue tests. However, FTIR residue analysis cannot be conducted on labeled samples as ink and fingernail polish obscure the organic residue signatures.
Bulk lots of small items (e.g., lithic debitage, ceramics, broken glass) can be bagged together and assigned a range of numbers (with one number assigned to each specimen) if they have a common provenance and are like material (i.e., all lithics or all fauna). Where the sample consists of a large amount of indistinguishable material, such as a bag of tiny undifferentiated and unidentifiable bone scraps or large amounts of small debitage, a single number can be assigned to the lot; this applies only to like materials with common provenience. An archival plastic, paper, or cardboard label can be fastened to large items with a string in cases where bagging or numbering are not feasible (e.g., a rusty cam shaft from a large motor). Never use rubber bands or non-archival tape.

Where cataloguing involves placing the artifact in a bag with an accompanying catalogue number, the bag must be of archival quality (i.e., not brown paper). The catalogue number must be clearly visible through the bag, or on the outside of the bag. Where a bag is used to hold multiple artifacts, such as contents of a feature or a level bag, a summary of the contents of the bag must be applied on the outside of the bag.

A detailed digital catalogue, both paper and electronic copies, must be submitted with each collection. All electronic catalogues must be in Excel format and be submitted on a conventional storage medium (CD or USB storage device) that is labelled with the permit number. Printed paper copies of the catalogue must be no larger than legal size. Below is a list of approved standardized catalogue field names that must be used to catalogue all collections. Spelling and format of these fields must be as they appear below. Applicable fields should be filled in as appropriate to the recovered collection. Handwritten catalogues are not accepted. Beyond the field names listed below, extra fields may be added to record any analytic or other data. These data will be retained by RAM and can be accessed by all researchers. The electronic and paper copies of the catalogue must accompany the artifact submission.

An Excel template is attached and is also available from RAM Archaeology staff.

**Field Names RAM requires:**
Permit Number
Borden Number
Site/Project Name
<table>
<thead>
<tr>
<th>Catalogue Number/Range Start</th>
<th>Catalogue Range End</th>
</tr>
</thead>
<tbody>
<tr>
<td>Count</td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td></td>
</tr>
<tr>
<td>Length</td>
<td></td>
</tr>
<tr>
<td>Width</td>
<td></td>
</tr>
<tr>
<td>Thickness</td>
<td></td>
</tr>
<tr>
<td>Gross/Category Class (Lithic, Fauna, Pottery, Historic, Charcoal, Soil, Ochre, Wood etc.)</td>
<td></td>
</tr>
<tr>
<td>Description (projectile point, flake, bone fragments, rim sherd, point base, metal, glass, chinking, historic ceramic)</td>
<td></td>
</tr>
<tr>
<td>Artifact Type (Avonlea, Sask. Basin)</td>
<td></td>
</tr>
<tr>
<td>Portion/Integrity</td>
<td></td>
</tr>
<tr>
<td>Raw Material</td>
<td></td>
</tr>
<tr>
<td>Colour</td>
<td></td>
</tr>
<tr>
<td>Gross Taxon/Family</td>
<td></td>
</tr>
<tr>
<td>Species</td>
<td></td>
</tr>
<tr>
<td>Element</td>
<td></td>
</tr>
<tr>
<td>Side</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
</tr>
<tr>
<td>Unit</td>
<td></td>
</tr>
<tr>
<td>Level</td>
<td></td>
</tr>
<tr>
<td>Depth (BS)</td>
<td></td>
</tr>
<tr>
<td>Depth (BD)</td>
<td></td>
</tr>
<tr>
<td>Feature</td>
<td></td>
</tr>
<tr>
<td>UTM Zone</td>
<td></td>
</tr>
<tr>
<td>UTM Easting</td>
<td></td>
</tr>
<tr>
<td>UTM Northing</td>
<td></td>
</tr>
<tr>
<td>UTM Datum</td>
<td></td>
</tr>
<tr>
<td>Area/Locality</td>
<td></td>
</tr>
<tr>
<td>Grid Northing</td>
<td></td>
</tr>
<tr>
<td>Grid Southing</td>
<td></td>
</tr>
<tr>
<td>Grid Westing</td>
<td></td>
</tr>
<tr>
<td>Grid Easting</td>
<td></td>
</tr>
<tr>
<td>Quadrant</td>
<td></td>
</tr>
</tbody>
</table>
SI_Name (subsurface inspection)
Cultural Unit/Component
Artifact Date
Comments

The attached Excel template facilitates the import of catalogue data into the RAM’s centralized artifact database, which in turn contributes to accurate and timely responses to research requests. Consistent and accessible data also opens up new research possibilities.

One catalogue per permit and site combination is required. Where multiple types of artifacts have been collected, the Excel tables can have one sheet for lithics, one sheet for fauna, one sheet for historic material, etc., and RAM catalogue fields names must be used in each sheet. All the data from the various sheets must also be combined into one sheet which is the complete catalogue.

Coded fields (e.g., alpha numeric) are not to be used in the RAM required fields. Codes may be used for analytical data but the key for the codes must be imbedded in both the paper and electronic copies.

If artifacts were submitted for destructive or other analysis and/or casting, this information must be noted in the comments field of the catalogue.

4. Fire-Broken/Cracked-Rock Submissions

Generally FB/CR is not submitted along with artifact collections; however, because of potential analytical significance of FB/CR, it is recommended that small samples be retained and submitted with collections. When recovered from discrete features (e.g., hearths, pits, and other cooking or heating features) submit a sample of up to 10 rocks. When FB/CR has been collected from non-discrete occurrences, such general scatters within an occupation or living floor, submit a sample of up to 10 rocks. For sites with known or suspected multiple occupations, submissions may be made for each presumed occupation level.

FB/CR submissions must be packaged in zip-lock bags, and the bags must be labeled with full provenience information, including permit number, Borden number, feature number,
and level or depth information if applicable. Catalogue numbers are NOT assigned to FB/CR specimens, but, to allow for electronic searching for FB/CR specimens, an entry should be made in the appropriate catalogues for each instance when an FB/CR sample has been submitted.

5. Historic Brick and Chinking Submissions

Generally historic brick remains are not submitted; however, occasionally bricks may provide significant information about a site. Following the procedures for FB/CR, submit samples of up to 10 bricks labeled with their provenience. Catalogue numbers are NOT assigned to brick specimens, but, to allow for electronic searching for brick specimens, an entry should be made in the appropriate catalogues for each instance when a brick sample has been submitted. Any diagnostic pieces of brick, such as those with stamped identification marks, dates, or other significant features, should be catalogued individually and submitted along with other artifacts.

Chinking material is generally not submitted; however, small samples of up to 10 pieces may be submitted for each historic structure investigated at a site. Submission procedures should follow those identified for FB/CR.

6. Soil Samples

Soil and sediment samples are not commonly submitted. However, soil samples may be collected for the following purposes: general site characterization, specific data recovery, or chronologic control. Soil samples must be submitted with the rest of the archaeological materials at the time of permit submission. Please note that RAM does not offer or provide routine analytical services in the context of HRIA work. If dating and site characterization is required as part of the permitting process, then consultants must make their own arrangements for the analysis.

Site characterization

In some situations, soil and sediment samples may be collected in order to characterize the depositional and pedological context of the site, as related to site formation processes. Analytical techniques applied to these samples may include particle size analysis, soil pH, carbonate content, OM content, and other standard soil analytical techniques. These samples
are usually collected from each layer or horizon in a cleaned, photographed, and fully described profile.

Specific data targets
Soil and sediment samples may be collected from specific site features (e.g., hearth features, feature fills) or organic layers in order to provide contextual palaeoenvironmental information (organic layers) or site use information (hearth fills, feature fills). Analytical techniques applied to these samples may include pollen analysis, macrofossil analysis, and radiocarbon dating. The target volume for pollen or macrofossil analysis is 500 ml, but up to 1 litre samples are desirable for organic layers. In some situation (e.g., where the feature is of restricted extent) it may not be possible to reach these targets.

Samples for chronologic control (charcoal, tephra, wood)
Charcoal, tephra and wood samples may be collected from specific site features (e.g., hearth features) or visible tephra and charcoal layers in order to provide chronologic control for the site. Analytical techniques applied to these samples may include radiocarbon dating and geochemical characterization. The target volume for these samples is 100 ml, but up to 500 ml samples are desirable. In some situation (e.g., where thin charcoal layers are found in section) it may not be possible to reach these targets. These samples are usually collected from layers exposed in a cleaned, photographed, and fully described profile.

Collection and Packaging
Each sample should be packaged in a thick, clean, dry, clear plastic bag (either ziplock or whirlpak – no twist-tie bags). Bagged sample should be placed in a second thick clear plastic bag, with a label. Both bags must be well-sealed. Ensure outer bag is dry so label does not degrade. Label should include Borden number, permit number, provenience information, depth (top and bottom of sampled interval), collector’s initials, way-point number or GPS coordinates, date of collection. Field notes for the sample site should include the same information, as well as notes on site characteristics, including surrounding vegetation and environment, and description of the feature and/or the profile. Samples should be kept cool (preferably refrigerated) until submitted. Wet samples can be air dried (by opening bags in a clean environment) to prevent moulding.
Environmental conditions of site must be recorded such as moisture availability (moist ground, nearby streams), estimated slope, weather at time of sampling, etc. Images must be taken of the site and sampling area, including surrounding and ground vegetation. Clean the sampling tool by rinsing well with water and wipe clean. Clean the tool between each sample taken. With the tool, lightly scrape away ~ 2 cm from the top surface of your sampling area to remove contaminants and loose debris. Clean sampling tool again. With the clean tool, collect In situ soil sample to represent the sampling site (not blown in debris). The soil may be loose if collecting from a feature such as a roasting pit. However, make sure you are not collecting soil that fell into the feature as you were digging or collecting samples. The soil should be of known origin whenever possible. If contamination is suspected, please record. Record details of sampling such as potential contaminants, soil types, notable features such as charcoal within soil noted, etc.

Examples of when and when not to collect soil and sediment samples:

<table>
<thead>
<tr>
<th>When to collect soil</th>
<th>Do not collect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Associated with a prominent feature fill (e.g., roasting pit, hearth, food storage areas, etc),</td>
<td>No distinct features noted (no grab samples of a quadrant bottom or something like that)</td>
</tr>
<tr>
<td>obvious organic layers within the matrix / features</td>
<td>100% sand, silt or clay – will likely not get much here.</td>
</tr>
<tr>
<td>soil stratification (banding) is noted along the wall face of a quadrant – focus on the organic (darker black) bands and take multiple samples along the cleaned face</td>
<td>Homogenous soil along wall face - (instead focus on samples from feature)</td>
</tr>
<tr>
<td>Discrete sample from known origin</td>
<td>Highly mixed or contaminated soil (e.g., feature fill with soil from digging mixed with feature fill)</td>
</tr>
</tbody>
</table>
CHECK LIST FOR SAMPLING SOILS TO PROCESS FOR PALAEOENV. WORK (POLLEN, SEEDS, ANIMAL FRAGMENTS (mites, etc.))

1. Record coordinates / elevation of sampling point.

2. Note landscape and sampling location and site description (e.g., a wetlands, upland about 100m from lake margin, silty, etc.....)

3. Record environmental conditions of site: such as moisture availability (moist ground, nearby streams), estimated slope, weather at time of sampling, etc. (this is really helpful to determine parameters for certain animal remains such as arthropods as well as for vegetation and contamination issues).

4. Take images of the site, sampling area, including surrounding and ground vegetation when possible.

5. Record general or detailed habitat / vegetation survey if information is available.

6. Clean sampling tool: rinse well with water and wipe clean. A sampling tool can be many things, it is really important it is cleaned well to reduce contamination and cleaned between each sample (e.g., from different levels)

7. With tool, lightly scrape away ~ 2 cm from the top surface of your sampling area to remove contaminants and loose debris.

8. Clean sampling tool again.

9. With tool, collect In situ soil sample to represent the sampling site (not blown in debris). The soil may be loose if collecting from a feature such as a roasting pit. However, make sure you are not collecting soil that fell into the feature as you were digging or collecting samples. The soil should be of known origin whenever possible. If contamination is suspected, please record.

10. Place sample into a new, labelled and sealable bag (i.e., ziplock or whirl-pak).
a. Collected at least 500 ml (about 2 cups) but up to 1 l (about 4 cups) for full analysis (pollen, seeds, moss, macros)

b. Ideally, you can double-bag the sample to avoid sample loss.

c. Bag the sample dry when possible. If not dry, sample needs to be stored in a fridge/cooler and transported to testing facility within a few days.

11. Record details of sampling such as potential contaminants, soil types, notable features such as charcoal within soil noted, etc.

12. Keep samples in cooler with ice / fridge between transportation from site to lab. Wet samples can be air dried (by opening bags in a clean environment) to prevent moulding.

7. Submission Packaging

All artifacts must be packaged adequately enough to prevent damage, breakage or abrasion. Fragile or significant artifacts should be cushioned, supported, and packaged to ensure safe transport and storage. This can be achieved through the use of smaller boxes, tin foil, ethafoam, and (small sized) bubble pack. Non-archival tape should never be used. The use of paper bags is strongly discouraged; however, if used they must not be closed using staples and must not be labeled in pencil. Bags and boxes must be labeled with permanent waterproof black ink markers. Self-adhesive labels or tape should not be used on any bag or box; they fall off over time. The use of archival quality Ziploc plastic bags is strongly recommended.

In addition to ensuring the preservation of artifacts, packaging should be done in a way that retains the logical organization and numerical sequencing of the materials. If an entire collection will fit into a single box, then different kinds of artifacts should all be included in one container, providing that all are properly labeled. In general, a collection should be contained in the fewest possible boxes. If material is sufficient to fill several boxes, different artifact materials (e.g., stone, bone, ceramic) should be boxed separately. In so far as possible, proper numerical catalogue sequence must be followed during boxing; that is, all boxed stone artifacts...
will be in numerical catalogue order, and the same with bone, etc. In all cases, box contents must be indicated clearly on the outside of each box (see below).

Significant or “diagnostic” artifacts and all formed tools must be kept separate in a clearly labeled bag or box. In general, artifacts singled out for photography and discussion in the final report fall into this category. Significant and diagnostic artifacts will be culled from the collections to be housed at the RAM main location, where they will be used for reference, research and display. The bulk of the material, which is less frequently requested for research purposes or display, will be stored in an off site warehouse.

If uncertain of how to submit any unusual and uncommon artifacts (e.g., tree cores) please contact the staff at the Archaeology Section, Royal Alberta Museum for information.

8. Boxes

All submissions to the RAM must be submitted in an appropriate box. Boxes should have the approximate following height, width, and length dimensions: 32 cm (10 ¼ inches) x 26 cm (12 ½ inches) x 39 cm (15 ½ inches) with a tight fitting or hinged lid, integral handles, and a bursting strength of not less than 275 lbs.

Boxes which meet this standard are: the "archaeology box" quote Stock #5062 available from Instabox in Edmonton, Calgary or Vancouver and the "Paige" boxes from Smurfit-MBI. Alternative box types must be approved by the Curator of Archaeology, Royal Alberta Museum. Oversized or very small collections must be treated in a manner that will ensure their safe arrival at the RAM. Oversized items, such as a complete bison skull, can be placed in a box exceeding the standard described above. A submission of multiple small collections can be consolidated in one box, providing the contents are clearly described on the outside of the box. The artifacts should be distributed in the boxes so that the individual box weight does not exceed 40 lbs (18 kg). Where an individual artifact exceeds this weight, the word “HEAVY” must be clearly indicated on the outside of the box.

Boxes must be clearly labeled on one end, and the labeling must include the Permit number, Borden number, Site Name, box number, and a description of contents, including catalogue numbers. The latter can be expressed as a range of catalogue numbers. The Instabox
“archaeology box” has preprinted information labels. Should a non-labeled box be used, the contents must be identified clearly using waterproof black ink. Printed labels may be used as long as the label is readable (i.e., printed in a large, bold font) and is affixed with an archival glue that has been approved by RAM staff.

<table>
<thead>
<tr>
<th>BORDEN NO.</th>
<th>SITE NAME</th>
<th>PERMIT NO.</th>
<th>ACC. NO.</th>
<th>BOX NO.</th>
<th>CONTENTS</th>
</tr>
</thead>
</table>

(Font size to be used on label is approx. 36pt)

9. Submission of Records

All field records (e.g., notes, maps, level records) must be boxed in approved boxes and labeled with permit number(s). If pre-digital photos or slides are submitted, they must be in archival plastic sleeves and must be accompanied by a photo/slide catalogue. Where appropriate, field records may also be submitted on CD’s or USB storage devices

10. Making Submissions

Artifact submission due dates are issued with archaeological permits.

Effective November 19, 2018, shipments of artifacts collected under an Archaeological Research Permit must be preceded by the submission of an Artifact Submission Summary through OPaC. Only one Artifact Submission Summary should be submitted per shipment, and the contents of the Summary must accurately reflect the entire contents of the shipment. The Summary must be submitted at least one week before anticipated artifact shipment date. The
contents of the shipment must not be changed once the Summary has been submitted. Detailed instructions on completing the Summary can be found in The OPaC User Guide: Submit Artifact Submission Summary available from the Archaeological Survey or RAM staff.

Upon completion of the Artifact Submission Summary in OPaC, please contact RAM staff to confirm the specific date and time of delivery.

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11. Submission Locations:

Submissions are accepted at the artifact warehouse in Acheson at the address below:

Royal Alberta Museum
Artifact Warehouse
26223 Twp Rd 530A Zone 4
Acheson Industrial Park
(see map below)