



# NORTHWEST RESEARCH OBSIDIAN STUDIES LABORATORY

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**Northwest Research Obsidian Studies Laboratory** provides analytical services for trace element provenance studies of obsidian and fine-grained volcanic (FGV) artifacts, the measurement of obsidian hydration rims, and the geoarchaeological and geochemical investigation of obsidian sources. We own ThermoNoran QuanX EC and Spectrace 5000 energy-dispersive X-ray fluorescence (EDXRF) spectrometers and operate an obsidian hydration analysis laboratory. The laboratory holds an extensive collection of geologic obsidian source reference samples from the Far Western United States, Canada, Mexico, and the Western Mediterranean, and we maintain a very active source sampling and analysis research program. Our laboratory facilities are equipped with a 24-hour monitoring system that provides constant security for artifact collections.

*Northwest Research* has successfully completed well over 1,000 archaeological projects in the United States, Canada, Mexico, Pacific Islands, and Western Mediterranean. Laboratory and source information support is provided by our staff and through our comprehensive websites: [www.obsidianlab.com](http://www.obsidianlab.com) and [www.sourcecatalog.com](http://www.sourcecatalog.com).

## PRICE LIST AND DIRECTORY OF LABORATORY SERVICES

### XRF TRACE ELEMENT CHARACTERIZATION SERVICES

XRF Analysis and Source Identification: 1-5 samples .....	\$ 45 per sample
XRF Analysis and Source Identification: 6-50 samples .....	\$ 35 per sample
XRF Analysis and Source Identification: 51-100 samples .....	\$ 32 per sample
XRF Analysis and Source Identification: 101+ samples .....	\$ 30 per sample

### OBSIDIAN HYDRATION ANALYTICAL SERVICES

Obsidian Hydration Measurement: 1-5 samples .....	\$ 25 per sample
Obsidian Hydration Measurement: 6-50 samples .....	\$ 23 per sample
Obsidian Hydration Measurement: 51-100 samples .....	\$ 20 per sample
Obsidian Hydration Measurement: 101+ samples .....	\$ 18 per sample

### OTHER SERVICES

Basic Report (data tables + CD only) .....	Subtract 10 percent (- 10%)
Rapid Turnaround (2 weeks or less - contact us first) .....	Add 35 percent (+ 35%)
Overnight Delivery .....	\$ 30.00 and up
Other Services (source studies, GIS, etc.) .....	Call or see lab website for details

▪ All projects include a data CD and an electronic Adobe Acrobat copy of the final report or data tables ▪

PRICES ARE EFFECTIVE 1 APR 2007

[WWW.OBSIDIANLAB.COM](http://WWW.OBSIDIANLAB.COM) ■ [WWW.SOURCECATALOG.COM](http://WWW.SOURCECATALOG.COM)



## HOW TO SELECT AND SUBMIT SAMPLES FOR ANALYSIS

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### SELECTION OF SAMPLES

**XRF Analysis:** Physical size matters! Larger samples produce better trace element results and higher-quality results mean a greater number of successful source assignments. Samples should be a minimum of 10 mm in diameter and should be at least 1.5 mm in thickness. Larger sizes (>15 mm diameter) are preferred for analysis and should be selected whenever possible.

**Obsidian Hydration Measurements:** There are no minimum specimen size requirements for obsidian hydration measurements. However, specimens smaller than about 5 mm are difficult to prepare for analysis and are largely destroyed during slide preparation. The occasional recuts that are sometimes needed will not be possible in this case and a higher number of unsuccessful rim measurements may result.

**How Many Is Enough?** This is the question we are most often asked! The short answer is that it never hurts a project to analyze more artifacts. Please see the lab website for more details.

**Research Objectives:** We recommend that you use explicit research objectives to guide your sample selection whenever possible. For instance, different classes of artifacts often reflect different procurement behaviors and patterns - formed tools such as projectile points will tend to come from a wider variety of sources than unformed, utilitarian artifacts or debitage. If you're looking at local raw material use, consider debitage. To look at quarry behavior, choose cores. If you're looking for evidence of longer-distance procurement or interaction, you'll probably want to look at formed tools. Similarly, the analysis of temporally diagnostic projectile points may add a valuable chronological dimension to the investigation.



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### TAKE CARE OF THE PAPERWORK

- Please fill out the sample submission sheet.
- Include the site location (UTM's and datum or section-township-range preferred).
- Include the sample provenience (sample numbers, unit, level) and artifact type (debitage, biface, etc.) if you would like them shown in your final report. If you can include these data on a disk or as an e-mail attachment, we'll appreciate it.
- A list of all submitted artifacts (with sample number or other identifier) is recommended.
- Special requests for analytical procedures, reporting, shipping, or billing? Let us know and we'll try to accommodate.

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### PREPARE THE SPECIMENS

**General:** Samples should be individually bagged and submitted with catalog numbers or other identification on the bag.

**XRF Analysis:** For best results, the surface of the items should be relatively flat, clean, and free of labels or any residues — a simple wash with tap water and a toothbrush will usually suffice. More resistant residues may interfere with the analysis in certain case (contact us for information). If artifacts have already been painted, please don't try to remove the labels - we'll attempt to analyze label-free areas. Labels are often very high in some of the elements that we may be measuring and even when paint is removed, some residue is left behind.

**Obsidian Hydration Measurements:** If you have any special requests regarding the location of measurements on any artifact or would like measurements made at more than one location on the artifact, please attach a separate sheet with tracings or photocopies of the sample(s) and well-marked hydration measurement locations. Please **do not** use correction fluid to mark locations directly on the artifact - it interferes with hydration rim visibility and with the trace element analysis.

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### PACK AND SHIP TO THE LAB

UPS, Fedex, DHL, and the U.S. Postal Service all offer various types of trackable shipping methods (that can be monitored via the Internet). In our experience, all have proven reliable.

For more details, see [WWW.OBSIDIANLAB.COM](http://WWW.OBSIDIANLAB.COM)