Standard Operating Procedure

Loss on Ignition (LOI)

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| **Department:** | Earth and Environmental Sciences |
| **Date SOP was written:** | 9/19/2013 |
| **Date SOP was approved by PI/lab supervisor:** | 9/19/2013 |
| **Principal Investigator:** | Steven Goodbred |
| **Internal Lab Safety Coordinator/Lab Manager:** | Richard Bradshaw |
| **Lab Phone:** | Click here to enter text. |
| **Office Phone:** | S. Goodbred (615) 322-4511 (campus phone: 2-4511) Bradshaw (615) 343-0839 (campus phone: 3-0839) |
| **Emergency Contact:** | S. Goodbred (615) 916-9259  R. Bradshaw (208) 260-2792 |
|  |
| **Location(s) covered by this SOP:** | *SC1108B* |
| *(Building/Room Number)* |

**Type of SOP:** ☒ Process ☐Hazardous Chemical ☐ Hazardous Class

**Purpose**

**Personal Protective Equipment (PPE)**

**Respirator Protection**

**Eye Protection**

ANSI approved, tight-fitting safety glasses/goggles and/or face shield.

**Body Protection**

Remove any loose jewelry around your neck or any jewelry on your hands and wrists. Tightly secure long hair in ponytail.

**Ear Protection**

Ear protection in the form of ear muffs or ear plugs must be worn during operation.

**Engineering Controls**

**Medical Emergency**

To contact the [Vanderbilt University Police Department](http://police.vanderbilt.edu/) in an emergency:

* Call **911** from any campus phone.
* Call **(615) 421-1911** from any other phone.

**Protocol/Procedure**

**Report any problems or abnormalities with the equipment immediately to the PI or LM.**

**\*\*\*NEVER leave the machine unattended while operating\*\*\***

After your sample has been oven dried at 50-60°C:

1. Homogenize the sample with mortar and pestle.
2. Obtain ceramic crucible and record crucible number and weight.
3. Pour homogenized sample into crucible and weigh before combusting (record weight).
4. Repeat steps 1-3 for all samples (~15-20 will fit in the furnace at a time).
5. Place all crucibles in the muffle furnace, close the door, and power on. Adjust the temperature to 450°C. Burn for 6 hours (Note: it may take up to an hour for the internal temperature to reach 450°C, so take that into account).
6. Power off the furnace--CAUTION CHECKING ON YOUR SAMPLES AS THEY WILL BE EXTREMELY HOT!--wait until your samples have cooled (~3-5 hrs) before removing.
7. Weigh the crucibles again and record their weight.
8. Percent organic matter can be calculated as:

([Weight pre-burn – weight post-burn] / weight pre-burn) \* 100

**NOTE**

Any deviation from this SOP requires approval from PI.

**Documentation of Training** (signature of all users is required)

* Prior to conducting any work with Loss on Ignition, LM or designated personnel must provide training to his/her laboratory personnel specific to the hazards involved in working with this substance, and emergency procedures.
* The Principal Investigator must provide his/her laboratory personnel with a copy of this SOP.
* The Principal Investigator must ensure that their laboratory personnel have attended appropriate laboratory safety training and are current with any refresher training required.

I have read and understand the content of this SOP:

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| **Name** | **Signature** | **Identification** | **Date** |
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