

Previous Work: Excerpt 1

Excerpt 1 is included as a Word document so that you may copy and paste it into your paper (and edit it as needed).

Excerpt 1. (What Previous Members of Your Group Did)**Experimental Section**

Prescribed Burns. PM-2.5 was collected during three prescribed burns conducted by the Peaks Ranger District of the Coconino National Forest Service in October 2003. The prescribed burns took place on three adjacent sites (A-C) of the A1-Mountain region of the Coconino National Forest, a predominantly ponderosa pine (*Pinus ponderosa*) forest near Flagstaff, AZ. All fires were broadcast burns and consumed ~100 acres of downed woody material, litter (dead-brown pine needles), and duff (decomposing litter). Each fire was sampled twice, during the ignition/combustion phase (day 1) and during the smoldering phase (day 2).

PM-2.5 Collection. During each fire event, ambient air was sampled using a battery-operated PM-2.5 chemical speciation monitor, equipped with a sharp-cut cyclone to remove particles with aerodynamic diameters $>2.5 \mu\text{m}$ (MetOne SuperSASS, Grants Pass, Oregon). Typical flow rates were 6.5 lpm. Sampling times were 2 h. The monitor collected two PM-2.5 samples simultaneously, one on a Teflon filter (47 mm), used to measure PM-2.5 mass, and one on a prebaked (900 °C, 12 h) quartz-fiber filter (47 mm), used for PAH analysis. One field blank (quartz-fiber) was transported to and from the fire on each day of sampling.

Mass Analysis. PM-2.5 mass was determined from the particulate collected on the Teflon filters, which had been preweighed and conditioned in a control chamber (24, h, 20-25 °C, and 30-40% relative humidity). Teflon filter masses were used to estimate the mass of particulate contained on the co-collected quartz-fiber filters.

Extraction and Concentration. Quartz-fiber filters (6 exposed filters, 6 field blanks, and 3 lab blanks) were extracted in dichloromethane (DCM) using a Soxhlet apparatus and concentrated to 1 mL in a Kuderna-Danish concentrator according to EPA Method 3540C. Prior to extraction, each filter was spiked with 50 μL nitrobenzene- d_5 (64 mg/L) to measure percent recovery. Extracts were stored in precleaned amber glass bottles at -20 °C until ready for use.

Excerpt 2. Lab notebook summarizing PM-2.5 filter data

October 30, 2003

Quartz fiber filter log.

Three prescribed fires (Rx1-Rx3) were conducted on three adjacent plots (A-C) of the A1-Mountain region of the Coconino National Forest. Sampling time was 2 hours.

ND = not determined.

Sample No.	Fire/Area	Date	Event	PM-2.5 Mass (mg)*
S1_IG/F	Rx1 (A)	10/13/03	Ignition	2.01
FB1_IG/F	Rx1 (A)	10/13/03	Ignition	ND
S1_SM	Rx1 (A)	10/14/03	Smoldering	1.54
FB1_SM	Rx1 (A)	10/14/03	Smoldering	ND
S2_IG/F	Rx2 (B)	10/22/03	Ignition	2.38
FB2_IG/F	Rx2 (B)	10/22/03	Ignition	ND
S2_SM	Rx2 (B)	10/23/03	Smoldering	1.62
FB2_SM	Rx2 (B)	10/23/03	Smoldering	ND
S3_IG/F	Rx3 (C)	10/27/03	Ignition	3.2
FB3_IG/F	Rx3 (C)	10/27/03	Ignition	ND
S3_SM	Rx3 (C)	10/28/03	Smoldering	1.58
FB3_SM	Rx3 (C)	10/28/03	Smoldering	ND

* Determined from the mass on the co-collected Teflon filter.

Research Steps

Research projects are complex and this Canned Research is no exception. It is often useful to divide such a large project into smaller tasks. **Research Steps** will help you with this task. Unless assigned by your instructor, these steps are not required; however, by following these steps, you will more closely imitate the research process.

At this point in your project, it is important that you understand what the previous members of your group accomplished.

- Read through Excerpt 1. Make a list of any terms or methods that you do not understand. Research these items (using textbooks, the internet, journal articles) to find out what they mean and how they are used.
- Find two or more peer-reviewed journal articles that describe procedures similar to those used in Excerpt 1. Read the Methods section of these articles to better understand the procedures and to find models for the ways experts write about these procedures. Based on these journal articles, reread Excerpt 1. Decide if there are any corrections, revisions, or changes you would like to make before you include it in your paper.