

Several counties along Utah's Wasatch Front are designated as EPA nonattainment areas for particulate smaller than 2.5 microns ($PM_{2.5}$) due to elevated $PM_{2.5}$ levels associated with persistent cold air pools (PCAPs). To reduce particulate emissions during PCAPs, the Utah Division of Air Quality (DAQ) issues mandatory and voluntary "no-burn days" during which residential solid-fuel burning is restricted. This study combined stationary and mobile monitoring strategies to estimate the contribution of commercial and residential wood burning to local $PM_{2.5}$ concentrations and assess compliance with wood burning restrictions. It employed a seven-wavelength optical absorption aethalometer to qualitatively measure the presence of wood smoke particulate material (WS PM) using "Delta-C", which is the difference between light attenuation at 370 nm relative to 880 nm. The resulting Delta-C values are being compared to regulatory $PM_{2.5}$ measurements, heat deficit, and whether burn restrictions were issued. Mobile monitoring was performed by driving a predetermined route during both "burn" and "no-burn" days in January and February 2018. This was performed using a real-time aerosol monitor (DustTrak II 8350), an aethalometer (Magee Scientific AE33), and a handheld GPS unit (Garmin eTrex-20X). The mobile monitoring route included areas of known residential and commercial wood burning and resulted in maps that provide a strong indication of the effect of local wood-burning sources on $PM_{2.5}$ levels. Preliminary results indicate several commercial and residential locations consistently burn wood regardless of DAQ restrictions.