# CZO Metadata Worksheet – Sample/*Instructions*

(A blank version of this worksheet is on page 2.)

|  |  |
| --- | --- |
| Data File Name | **SH2014\_WaterIsotopes.xlsx** |
| Date Prepared | 2/27/2015 |
| Descriptive Title | Tree water and stem water isotope results for d18O and d2H |
| Update Frequency | N/A |
| Abstract | Sampling for stable isotopes of oxygen and hydrogen in tree water and soil water were conducted in 2014 in the Shale Hills catchment. The purpose of this project was to determine the depth of tree water use for groups of trees on the north- and south-facing hill slopes. This file contains tree stem water samples, shallow soils collected at the base of study trees (“tree soil”), bulk soil water samples up to 50 cm deep and lysimeter samples. This file is an Excel file containing sampling date and site information, as well as results for d18O and d2H from the Cornell University Stable Isotope Laboratory. |
| Investigator  Contact Info | David M. Eissenstat, Professor of Woody Plant Physiology, 201 Forest Resources Building, University Park, PA 16802, 814-863-3371, [dme9@psu.edu](mailto:dme9@psu.edu) |
| Data Value Descriptions | Sheet name  Cover Letter: description of analytical methods and instrument precision  Remaining sheets have the following column names:   * Sample ID: sample identifier, to indicate type of sample, date of sampling, location (treeID or lysimeter nest) * H2 Amp: See Cover Letter * d2H vsmow: d2H in permil, relative to VSMOW standard * SD d2Hvsmow: standard deviation of d2H in permil * CO2 Amp: See Cover Letter * d18O vsmow: d18O in permil, relative to VSMOW standard * SD d18O vsmow: standard deviation of d18O in permil   Data sheet names and content (names indicate dates of lab analyses):  Oct 2 & 4 : Tree stem water, tree soil  Oct 30 & 31 : Tree stem water, tree soil  Nov 14 & 16 : Tree stem water, tree soil, bulk soil  Nov 21 & 22 : Bulk soil, tree soil, tree stem water  Dec 5 & 7 : Bulk soil  Dec 8 & 9 : Bulk soil, tree soil, and lysimeter samples  Dec 11 & 12 : lysimeter samples  Dec 17 & 18: lysimeter samples |
| Keywords | *vegetation, soil water, plant water, stable isotopes, soil depth* |
| Methods | Tree stem samples collected by tree climbing. Stems stored in glass vials with polyseal caps and kept cool prior to analysis. Analytical methods detailed in Cover Letter page. Tree species sampled included *Quercus prinus* (QP), *Quercus rubra* (QR), and *Acer saccharum* (AS).  Bulk soil samples collected from 4 hill slope sites monthly from June to September. Three cores to ~50 cm (cores A, B and C) were collected from each site (NE, NW, SE, SW), for a total of 12 cores for each sampling date. Soil cores collected manually with a post-hole digger (AMS, Inc., Idaho, USA) at random locations within each site. Depth of sample noted after core ID. Samples from 0-10cm (e.g. A10), 10-20 cm (e.g. C20), 20-40cm (e.g. A40), and 40-50cm (e.g. B50). Sleeve with depth markings used to determine depth increments for soil. Soil transferred to glass vials with polyseal caps and returned to lab for storage at 0 degrees C.  Additional soil samples were collected in the top 5 cm of soil by each study tree. Tree species and tree number indicated in Sample ID column. See tree survey file for tree locations.  Water from both bulk soil and tree stems extracted by cryogenic vacuum distillation at the Cornell University Stable Isotope Laboratory.  Lysimeter water was sampled monthly from the south slope lysimeter nests (Depths indicated in Sample ID column):  SPRT – South Planar Ridge Top  SSRT – South Swale Ridge Top  SPMS – South Planar Midslope  SSMS – South Swale Midslope  SPVF – South Planar Valley Floor  SSVF – South Swale Valley Floor |
| Sites |  |
| Publications |  |