# CZO Metadata Worksheet

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| Data File Name | SSHO\_Soil\_Water\_Chemistry |
| Date Prepared | 1/7/13 |
| Descriptive Title | Soil Water Chemistry |
| Update Frequency | Yearly |
| Abstract | Chemistry of soil water collected from 2006-2011 at four transects in the Susquehanna Shale Hills Critical Zone Observatory. Two transects were located on the Northern (N) side of the catchment while the additional two transects were located on the Southern (S) side. Each portion of the catchment then contained a Planar (P) hillslope and a Swale (S) depression transect. Three different topographic sites were sampled within each transect, the most elevated site was located at the Ridge Top (RT) followed by the Mid Slope (MS) and lowest site at the Valley Floor (VF). As the lysimeters were installed to the depth of auguring refusal, first lysimeters was installed at a depth 10 cm with subsequent lysimeters installed every 10 cm.  Annual datasets have been registered with the EarthChem Library and assigned dataset DOI’s. Please reference the associated DOI below for any research derived from this data.  Soil Water Chemistry 2006: [doi:10.1594/IEDA/100233](http://dx.doi.org/10.1594/IEDA/100233)   |  |  | | --- | --- | | Soil Water Chemistry 2007: | [doi:10.1594/IEDA/100234](http://dx.doi.org/10.1594/IEDA/100234) | |  |  | |  |  | |  |  | |  |  |   Soil Water Chemistry 2008: [doi:10.1594/IEDA/100235](http://dx.doi.org/10.1594/IEDA/100235)   |  |  | | --- | --- | | Soil Water Chemistry 2009: | [doi:10.1594/IEDA/100236](http://dx.doi.org/10.1594/IEDA/100236) |   Soil Water Chemistry 2010: [doi:10.1594/IEDA/100237](http://dx.doi.org/10.1594/IEDA/100237)  Soil Water Chemistry 2011: [doi:10.1594/IEDA/100458](http://dx.doi.org/10.1594/IEDA/100458) |
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| Data Value Descriptions | * COL1: label = Sample\_Date * COL2: label = Sample Number * COL3: label = Site Name * COL4: label = Depth (cm) * COL5: label = DOC (ppm) * COL6: label = Water Temp (°C) * COL7: label = pH * COL8: label = Alkalinity (meq L-1) * COL9: label = Cl- (μM) * COL10: label = NO3- (μM) * COL11: label = SO42- (μM) * COL12: label = F (μM) * COL13: label = Acetate (μM) * COL14: label = Formate (μM) * COL15: label = Phosphate (μM) * COL16: label = Al+3 (μM) * COL17: label = Ca+2 (μM) * COL18: label = K+ (μM) * COL19: label = Mg+2 (μM) * COL20: label = Na+ (μM) * COL21: label = Si (μM) * COL22: label = Sr (μM) * COL23: label = Fe+3 (μM) * COL24: label = Mn+2 (μM) * COL25: label = Ni (μM) * COL26: label = P (μM) * COL27: label = V (μM) * COL28: label = Zn (μM) * COL29: label = Ba (μM) * COL30: label = 2H (‰) * COL31: label =  18O (‰) |
| Keywords | Soil Water Chemistry, Anions, Cations, Dissolved Organic Carbon, Oxygen and Hydrogen Stables Isotopes |
| Methods | Soil water was collected using nested-suction lysimeters (Soil water samplers, 1900 series, SoilMoisture Equipment Corp., Santa Barbara, CA) that collected soil water 10 cm depth increments. All lysimeters were suctioned to 50 k Pa one week prior to sampling. Soil was collected from each lysimeters using PVC tubing and syringe. When possible, four unfiltered soil water samples were collected at each lysimeters. Two samples were collected in screw top Nalgene bottles for anion and cations. The additional two samples were collected in glass bottle and analyzed for dissolved organic carbon (DOC) and oxygen and hydrogen stable isotopes. Cations and DOC samples were acidified in the laboratory with nitric and hydrochloric acids, respectively.  Major cations and silica were analyzed on an inductively coupled plasma–optical emission spectrometer (ICP– OES), while major anions were measured on the Dionex Ion Chromatograph (Sunnyvale, CA). DOC was analyzed using a Shimadzu TOC-5000A analyzer (Shimadzu Scientific Instruments, Columbia, MD). Oxygen and hydrogen stable isotopes were analyzed ion the DLT-100 liquid water stable analyzer (Los Gatos Research, Mountain View, CA). |
| Citation | The following acknowledgment should accompany any publication or citation of these data: Logistical support and/or data were provided by the NSF-supported Shale Hills Susquehanna Critical Zone Observatory. |
| Publications | Jin, L., Andrews, D.M., Holmes, G.H., Lin, H., and Brantley, S.L. Opening the "Black Box": Water Chemistry Reveals Hydrological Controls on Weathering in the Susquehanna Shale Hills Critical Zone Observatory. Vadose Zone Journal 10:928-942, doi:10.2136/vzj2010.0133.  Andrews, D.M., H. Lin, Q. Zhu, L. Jin, S.L. Brantley. Hot Spots and Hot Moments of Dissolved Organic Carbon Export and Soil Organic Carbon Storage in the Shale Hills Critical Zone Observatory. Vadose Zone Journal 10:943-954, doi:10.2136/vzj2010.0149 |
| Data Use Notes | The user of Shale Hills Susquehanna CZO data agrees to provide proper acknowledgment with each usage of the data. Citation of the name(s) of the investigator(s) responsible for the data set, in addition to the generic statement above, constitutes proper acknowledgment. Author(s) (including Shale Hills Susquehanna CZO investigators) of published material that makes use of previously unpublished Shale Hills Susquehanna CZO data agree to provide the Shale Hills Susquehanna CZO data manager with four (4) copies (preferably reprints) of that material for binding as soon as it becomes available. The user of Shale Hills Susquehanna CZO data agrees not to resell or redistribute shared data. The user of these data should be aware that, while efforts have been taken to ensure that these data are of the highest quality, there is no guarantee of perfection for the data contained herein and the possibility of errors exists. These data are defined as either public or private, such that a password may be required for access. |