# SSHCZO Metadata Worksheet

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| Data File Name | **GPR\_MG\_June2013.zip**  **FieldNotesWithLineNumbersJune2013.pdf inside the zip file GPR\_Grid\_2013.xlsx** |
| Date Prepared | 10/21/15 |
| Descriptive Title | Ground penetrating radar (GPR) data collected by infiltration experiment at Shale Hills in July 2013 |
| Update Frequency | Project complete |
| Abstract | Three sets of 21 GPR lines were collected (single set at each location, unlike Shale Hills experiment which had duplicate lines). The set of lines are diagramed in GPR\_grid\_2013.xlsx. Each group is identified by a line number given in FieldNotesWithLineNumbers. The three sets are pre-infiltration, after water infiltration, and after dye infiltration. The water infiltration pre-wet the soil to extend the range of the dye migration. All of these were collected in a single day. Duplicate radar lines provide a measure of data reproducibility and sensitivity.  Processed radargrams are available in the appendix of the Pitman master’s thesis. Processing parameters are provided there. |
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| Data Value Descriptions | \*.mrk is a file containing marks made along the survey at points of interest.  \*.rad is a header file for each line with data collection parameters  \*.rd3 is the primary GPR data in 32-bit binary format  Bad lines are as noted in the field book are not included in the record. |
| Keywords | Infiltration experiment, Shale Hills, Missed Grouse, geophysical monitoring |
| Methods | A MALA GPR with 800 Mhz shielded antenna was used. The sample interval was 0.1164 ns. The time window was 46.434 nanoseconds (400 samples per trace). A trace was collected every 1 cm along the lines triggered by the Mala survey wheel attached to the antenna.  The antenna was pulled by hand, but guided by a rigid board for reproducible location. A distance measuring wheel was used to encode the horizontal position. |
| Sites | Missed Grouse watershed, short way up the road before the shale pit |
| Publications | Pitman, Lacey. 2014. Ground-penetrating radar images of a dye tracer test within the unsaturated zone at the Suusquehanna-Shale Hills CZO. Unpublished Master’s Thesis, Temple University.  Nyquist, J, Toran, L, Pitman, L and Lin, H.  Comparison of Time-Lapse GPR and Dye Tracer Tests for Monitoring Hillslope Flow in the Susquehanna Shale Hills CZO, Pennsylvania.  In prep. |