

Appendix B

Receiver and Shot Dep File Construction

Much of the required meta-data to process and archive active-source data may be stored in a spreadsheet, such as the recommended PH5_template.csv file referenced in the PI and PASSCAL responsibilities document. Specifically the PH5_template.csv stores receiver/station related information, where as the shot information may be stored in a similar, but separate spreadsheet.

In both cases the receiver and shot information stored should be saved in tab-delimited format (CSV) as a text file for further formatting into a deployment file, or dep file. Dep files have previously been produced from TSP meta-data files or even hand edited in some cases. The recommended spreadsheet format offers a user-friendly interface for the archiver to enter the meta-data required in a dep file and ensures more uniformity with respect to the information provided by the archiver.

These CSV-formatted files serve as input to *noven*, which organizes information into semi-colon-delimited receiver-only and shot-only dep files.

Construction of the Receiver-only Dep File

The PI-assigned individual should enter the receiver meta-data into the PH5 template spreadsheet as soon as practical, ensuring all meta-data entered have been reviewed and found to be an accurate reflection of what actually happened, as opposed to what had been planned.

Please note the following conventions regarding the format of each column of the PH5 template spreadsheet:

- Station:** 5 digits in length, where, if possible, the left-most digit is the array number in which the receiver or station reside. **This value must be less than 32767.**
- Texan Serial Number (Receiver-ID),** 5 digits in length, where the first number must be "1"; if the S/N is not 5 digits long simply add "10000" to the S/N to obtain 5 digits.
- Deploy/Pickup:** simply a "D" or "P", nothing more, nothing less
- Time (UTC):** the time of deployment or pickup expressed as HH:MM in UTC.
- Month/Day:** month and day are expressed as 2 digit numbers, e.g. 08/26
- Year:** the 4 digit year of the deployment/pickup
- Latitude:** in decimal degrees, where southern latitudes are negative
- Longitude:** in decimal degrees, where western longitudes are negative
- Elevation:** expressed in integer meters
- LED status:** LED light color at time of deployment or pick-up; "G", "R", or "None"
- Array or Line Name:** typically 1 digit and should match the 10000s digit of the station name
- Notes (optional):** text permitted to describe any points worth documenting
- Team (optional):** deployment or pickup team name or names

With the receiver meta-data entered, save the spreadsheet in tab-delimited CSV format, as tab-delimiting has proven the most reliable delimiter.

Shot Dep File

The shot meta-data should be recorded into a tab-delimited, CSV formatted spreadsheet, as soon as practical after the shots have occurred. The following values are to be included in the shot spreadsheet (* denotes an optional field):

Shot-ID: integer number, recommended convention: 4 digits, starting at 9000. **This value must be less than 32767.**

Shot time: following the recommended convention of YYYY:JJJ:HH:MM:SS.sss

Latitude: following same convention as that found for the receivers/stations

Longitude: following same convention as that found for the receivers/stations

Elevation: in integer meters (optional or may be set to “0”)

Shot size (optional): in kilograms

Shot depth (optional): in integer meters

Noven

Noven is a GUI used for defining the fields of the receiver and shot csv files and writes dep files. It allows the user to define fields, by clicking and dragging column names to the appropriate fields and applies basic checks of the information provided.

When starting *noven* (started on the command line), a window opens. From the “File” drop-down menu in the upper left-hand corner of the window load the receiver or shot file as appropriate. Enlarge the window as necessary to view your file. Note whether or not the fields are separated as expected. If not selected select the “Configure” option, under the “File” menu, to set to the column separator to “Tab” (Figure 1). Next, double-click on “SHOT Fields/RECV Fields” and enlarge the window which appears to view the fields available for defining the columns of the receiver and shot csv files (Figure 2).

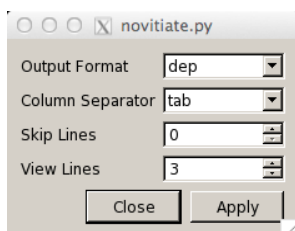


Figure 1. The noven Configure window, available via the “File” menu. Set the column separator to ensure the columns are read properly by *noven*.

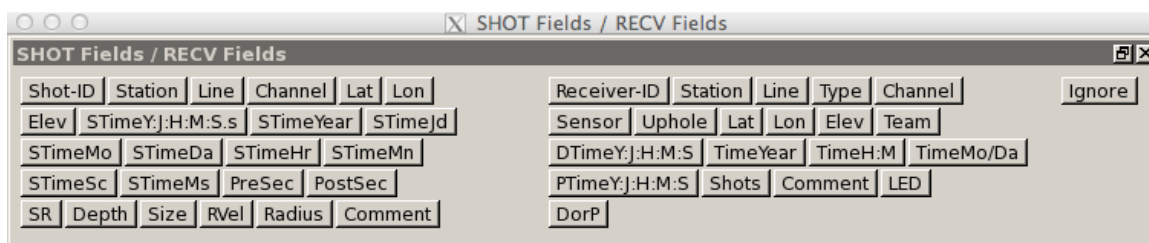


Figure 2. The noven “SHOT Fields/RECV Fields” window expanded, illustrating the fields available to define the columns of your csv files.

With your noven windows expanded click on the appropriate field name in the “SHOT Fields/RECV Fields” window and drag the field name to the desired column, dropping the field name on top of the “Ignore” header for the column in the noven window (Figure 3). Repeat as necessary. If a column is left with an “Ignore” column header, the column will be excluded from the dep file written by *noven*. Below we focus on the receiver csv file; remember follow through this procedure for the shot csv file as well.

Ignore	Ignore	Ignore	Ignore	Ignore	Ignore	Ignore	Lat	Ignore	Ignore
Revised Station Numbers	Texan	[D]eploy/[P]ickup	Light (Green/Red/ None)	Time (UTC)	Month/Day (MM/DD)	Year	Latitude	Longitude	Elevation (meters)
10010	1127	D	R	7:00	08/10	2012	44.50367151	-118.7021704	1166.819
10010	1127	P	G	18:00	08/15	2012	44.50367151	-118.7021704	1166.819

Figure 3. Drag and drop field names onto the “Ignore” header in each column. Simply click the mouse pointer on the appropriate header, then drag and drop onto the desired header of the column as shown.

Be sure to omit the original header information in the CSV-formatted (if any was included) by setting the “Skip Lines” value found in the Configure window (Figure 2). With the fields of your file defined as necessary save the output dep file with an appropriate file name via the “Save As” option under the drop down menu.

Open the dep file with a text editor, review the comments, making adjustments to your csv file as necessary to correct any errors or warnings found during saving of the dep file.

Remove all the comments, being careful not to remove any valid receiver or shot information. Now your receiver and shot meta-data are stored as dep files ready for loading into the PH5 file. Below are the first several lines of an example receiver dep file produced by *noven*.

```
#Receiver dep written by noven 2012.191.1 Alpha : Thu Oct 18 15:53:05 2012
#R_id;R_station;R_line;R_receiver-
type;R_chan;R_sensor;R_uphole;R_lat;R_lon;R_elev;R_team;R_deploy_time;R_pickup_time;R_shots;R_comment
# *** Warning: May be unsorted, run sort-recv-dep.
***RECV;11127;10010;1;texan;1;;;N44.50367151;W118.7021704;1166.819;DG;2012:223:07:00:00.000;2012:228:18:00:00.000;;
RECV;14161;10020;1;texan;1;;;N44.50391656;W118.7001175;1176.015;;2012:223:07:00:00.000;2012:228:18:00:00.000;;
RECV;10693;10030;1;texan;1;;;N44.50483114;W118.6975536;1187.122;;2012:223:07:00:00.000;2012:228:18:00:00.000;;
RECV;10963;10040;1;texan;1;;;N44.50586201;W118.6949501;1200.768;;2012:223:07:00:00.000;2012:228:18:00:00.000;;
```

Notice in the example above the comment lines, one of which suggests additional work to be done with the receiver dep file. Remember to remove any characters before “RECV”. In this case “***” should be removed from the line, to ensure each line is read properly in subsequent steps of processing.

For receiver dep files run *sort-recv-dep* to ensure the lines are sorted by station number as sorting by station number is required for later processing of the meta-data.

Remember to repeat this section for the shot csv file.

Depcheck

As a final check of the dep files run *depcheck*, a GUI which highlights problems with entries of the dep files. Yellow underlining serves as a warning that the underlined content is not following a convention. Placing the mouse over the underlined entry momentarily will provide the definition of the field in question. Red underlined information implies an error with the entry which will require correction prior to loading the deo file into your PH5 file.

Modifications of the dep file contents may be made directly within the *depcheck* window, though it is recommended the originating CSV files are corrected and the dep files are regenerated to ensure consistency between the csv files and the depfiles.