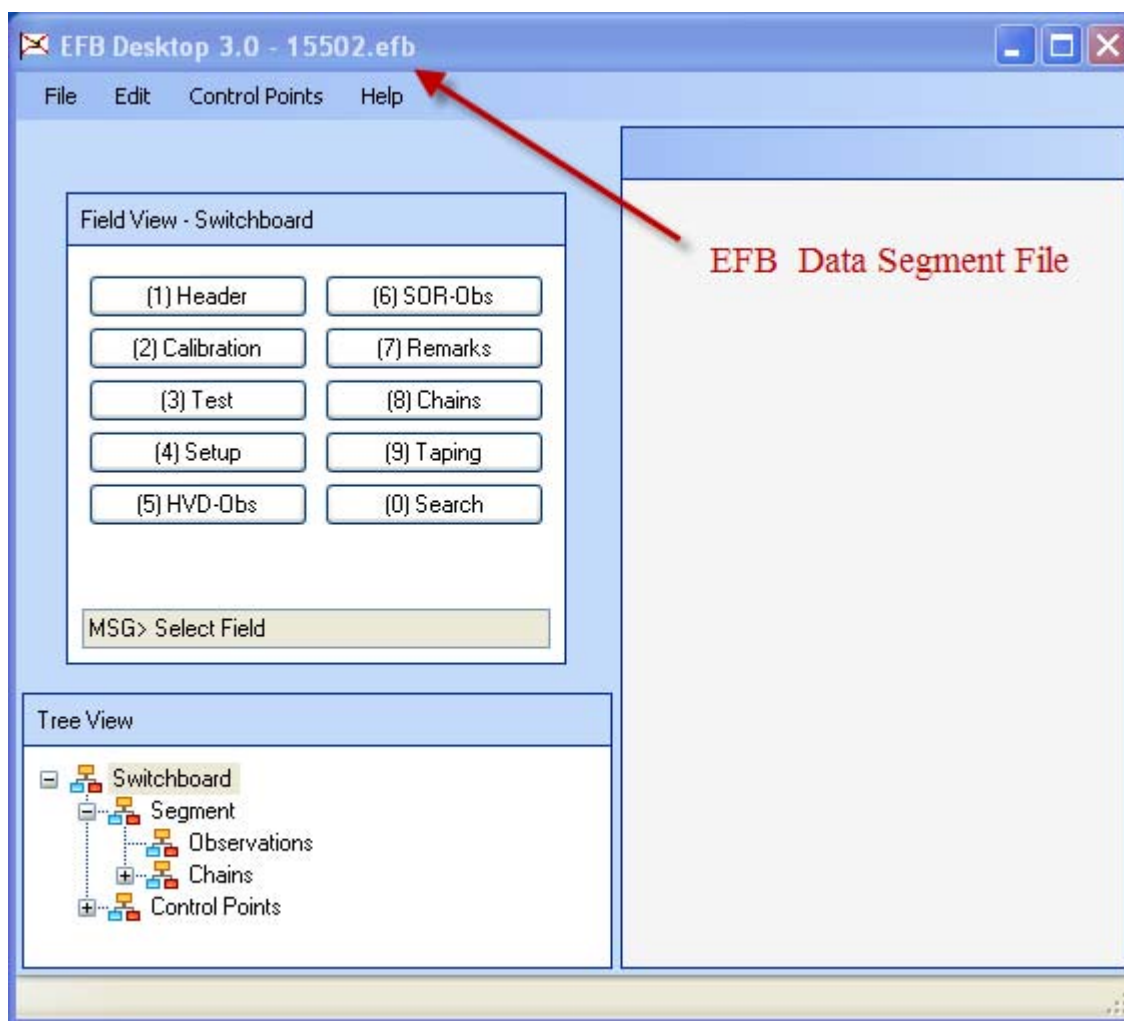


## Survey Workflow from EFB to Civil 3D 2011

This workflow is intended to describe the passage of survey data into Civil 3D from surveying systems in use by Florida DOT. FDOT will be using the department's Electronic Field Book (EFB) for gathering and processing conventional surveying data. This system has the capability to export processed LandXML files and CAiCE SRV format files that can be imported into Civil 3D. This will also document the import of CAiCE project data.

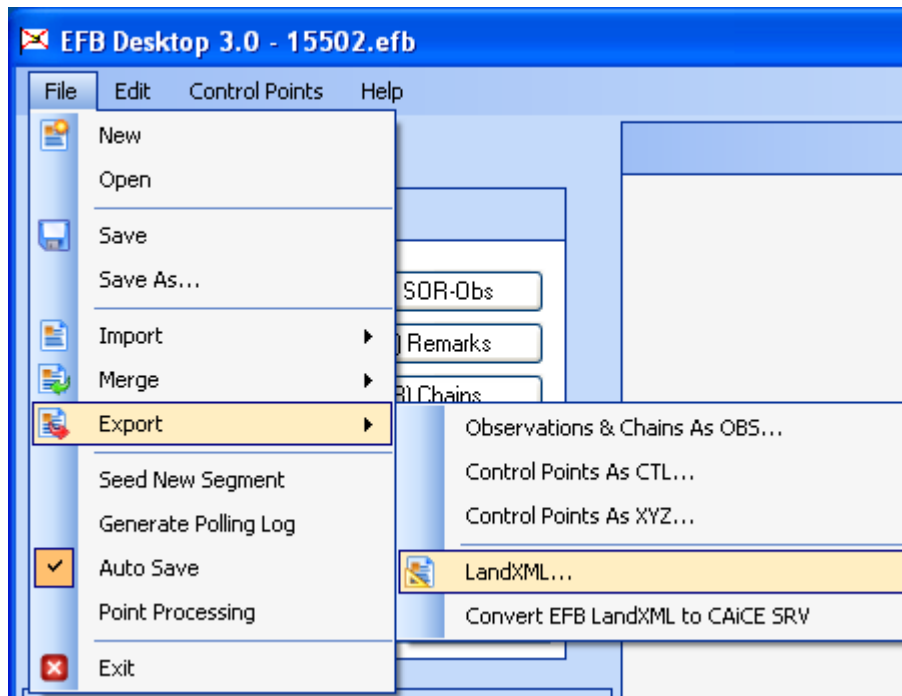
This workflow will not cover the usage of EFB, however will cover the export of data for use by Civil 3D.



Once the EFB data segment has been processed, and the results of the Least Squares adjustment are satisfactory, data is ready to begin processing for Civil 3D. The data that can be transmitted to Civil 3D will consist of the points (both control points and computed points) and the survey chains that pass through those points.

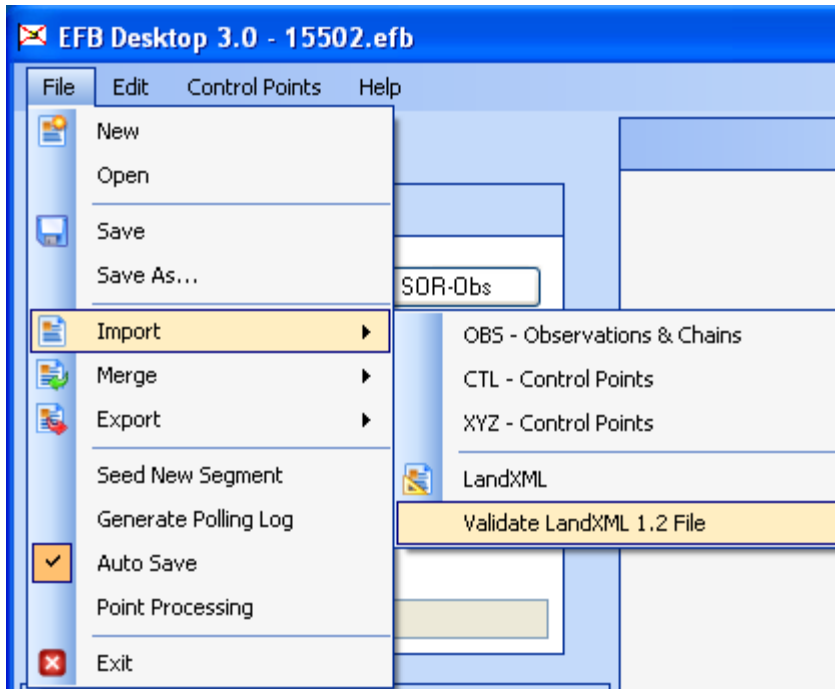
## Creating and Validating a LandXML file of the EFB Segment

From the File menu, select: **File > Export > LandXML**

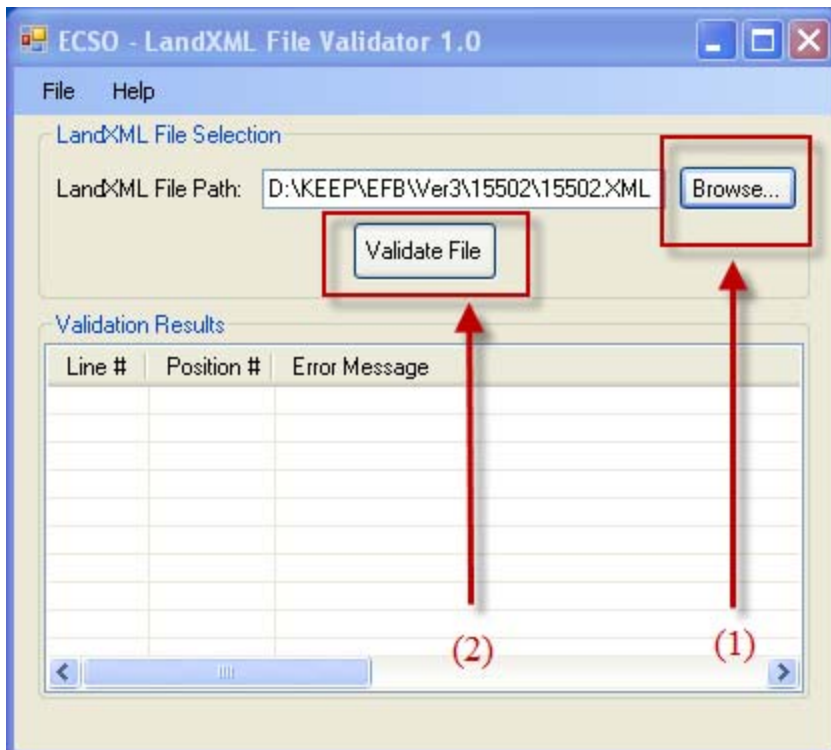


Save the .XML with the name of your choice. Note that it is recommended to save the XML file with the same filename as the .EFB file, as it represents the same data just in a different format.

Once the XML file has been saved, a tool exists in EFB to validate the XML file produced. This step is not necessary, but it does validate the XML file against the LandXML 1.2 schema posted on <http://www.landxml.org>. This validator does a very strict validation, and will report any structural problems with a LandXML file you care to test. This workflow will not attempt to cover the errors that could be found in a LandXML, and will leave the reader to explore that on their own.



To validate the LandXML just created, Select: **File > Import > Validate LandXML 1.2 file.**

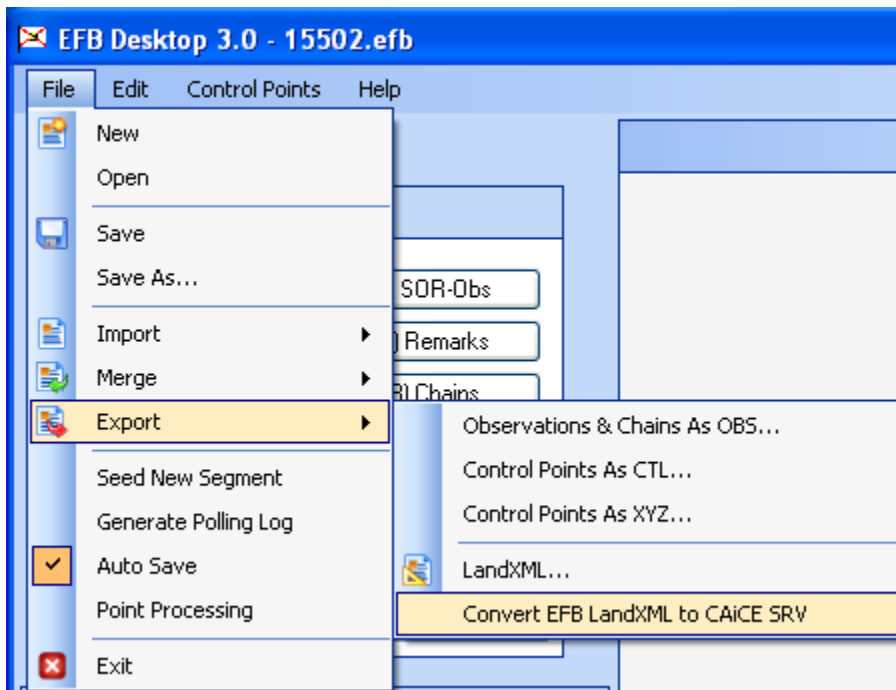


- 1) Browse to the LandXML, or Use the **File** menu to select the LandXML to validate
  - 2) Select the Validate File button to perform the validation
- Any errors found will be written to the data grid area, by line and column in the XML file.

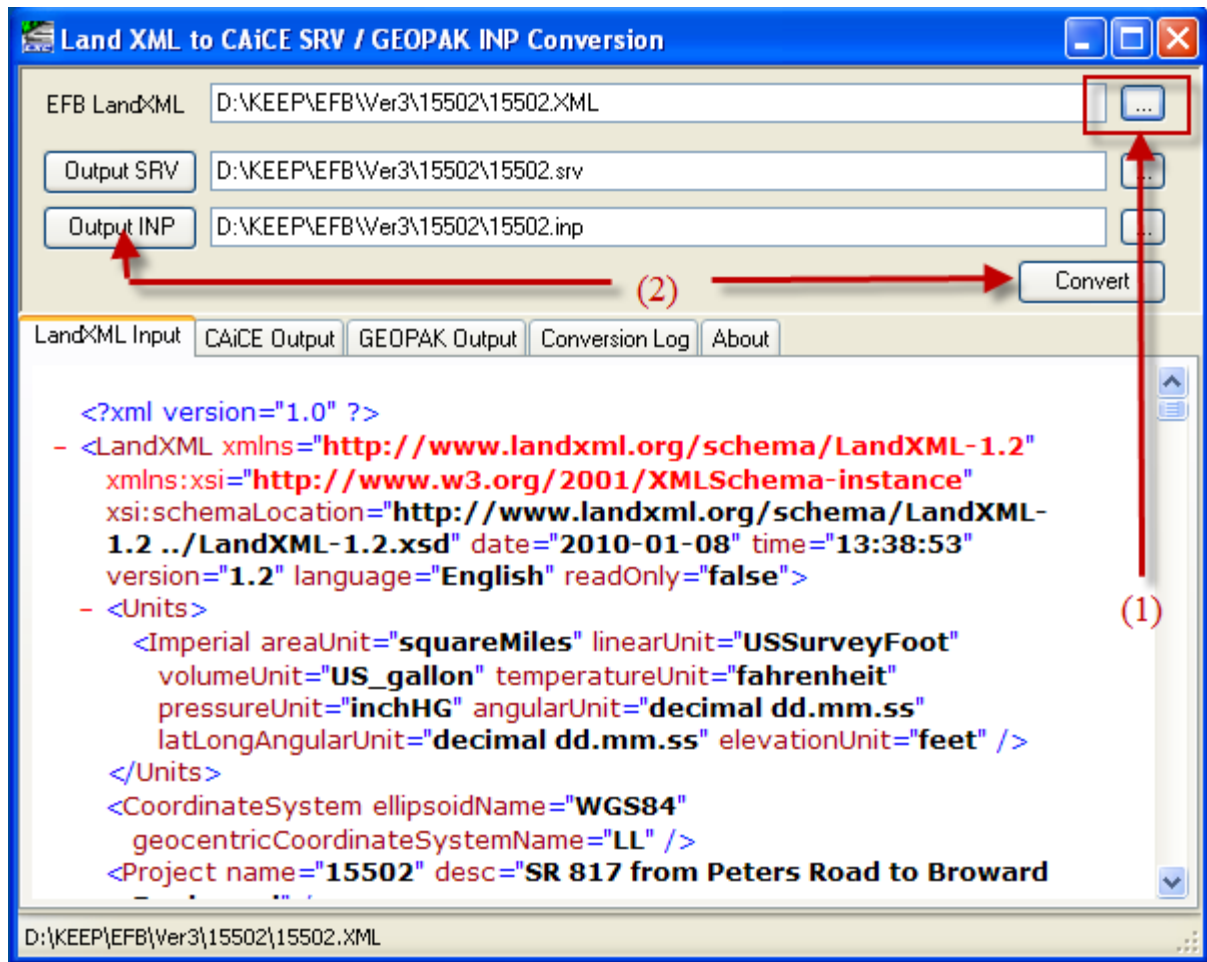
The next step is to convert the Land XML into a CAiCE SRV file and GEOPAK Input file for points and survey chains. Although this step is not necessary, it is a good quality control operation. This process will help identify:

- Points that have only Z, or no coordinate values (which are not much use in Civil 3D)
- Points Chains that include points with no 2-D or 3-D coordinate definitions
- Various other missing or mal-formed data components

This will help ensure Civil 3D will properly interpret your LandXML data. This is also the method to produce the input from EFB for both CAiCE and GEOPAK.



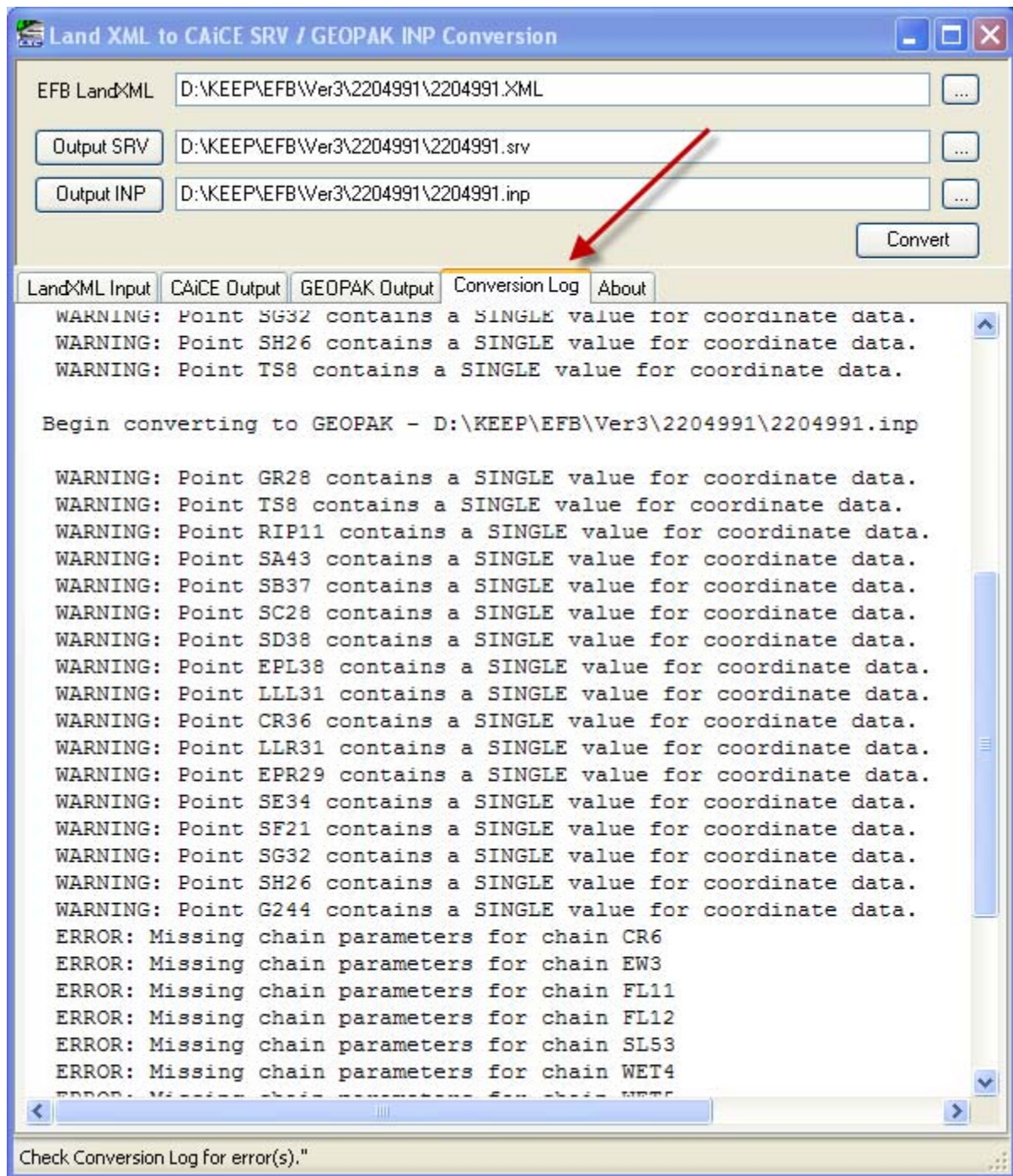
Select: **File > Export > Convert EFB LandXML to CAiCE SRV**



- 1) Use the [...] ellipsis button to select the LandXML file to convert. Once the LandXML is selected, the Output SRV file and Output INP file name fields are automatically populated. The ellipsis button next to those fields allows the selection of an existing file that can be overwritten, even if the name differs from the LandXML file. A filename may be keyed into the fields directly.
- 2) The Output/Convert buttons performs the conversion process. When the conversion takes place, the CAiCE Output Tab and GEOPAK Output Tab will view the resulting conversion.

The most important Tab to look at is the Conversion Log Tab. This Tab will view any errors detected.

The following screenshot shows a project where Warnings and Errors have occurred. The contents of the Conversion Log Tab are written to the folder of the source LandXML into a file named the same as the source LandXML file, i.e.: **filename\_log.txt**



If Warnings and Errors are detected (as in this case for project 2204991), the user can use this log to investigate the data at any stage along the way through EFB data processing. It is highly recommended the clean-up occur as close to source of the data in the field measurements or control points themselves. The data can then be reprocessed and these steps repeated. This will ensure the raw data matches the resulting LandXML to the extent possible. As a last resort, the LandXML file itself can be edited to make data cleanup. In the end, you should have: 1) a LandXML

file suitable for import into Civil 3D, 2) an SRV file suitable for import into CAiCE, and 3) an Input suitable for GEOPAK.