
*The Mltimp Utility
in Software Version 5000.8.0.0*

© 2011 Halliburton

© 2011 Halliburton.
All rights reserved.

Information in this document is subject to change without notice. No part of this document may be reproduced or transmitted in any form or by any means, electronic or mechanical, for any purpose, without the express written permission of Halliburton. Unauthorized reproduction or distribution of this documentation, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under law.

Halliburton may have patents, patent applications, trademarks, copyrights, or other intellectual property rights covering subject matter in this document. The furnishing of this document does not give you any license to these patents, trademarks, copyrights, or other intellectual property.

Halliburton | Landmark Software & Services

2107 CityWest Blvd, Building 2, Houston, Texas 77042-3051, USA

P.O. Box 42806, Houston, Texas 77242, USA

Phone: 713-839-2000, Fax: 713-839-2015

Internet: www.halliburton.com/landmark

Trademarks

3D Drill View, 3D Drill View KM, 3D Surveillance, 3DFS, 3DView, Active Field Surveillance, Active Reservoir Surveillance, Adaptive Mesh Refining, ADC, Advanced Data Transfer, Analysis Model Layering, ARIES, ARIES DecisionSuite, Asset Data Mining, Asset Decision Solutions, Asset Development Center, Asset Development Centre, Asset Journal, Asset Performance, AssetConnect, AssetConnect Enterprise, AssetConnect Enterprise Express, AssetConnect Expert, AssetDirector, AssetJournal, AssetLink, AssetLink Advisor, AssetLink Director, AssetLink Observer, AssetObserver, AssetObserver Advisor, AssetOptimizer, AssetPlanner, AssetPredictor, AssetSolver, AssetSolver Online, AssetView, AssetView 2D, AssetView 3D, BLITZPAK, CartoSnap, CasingLife, CasingSeat, CDS Connect, Channel Trim, COMPASS, Contract Generation, Corporate Data Archiver, Corporate Data Store, Data Analyzer, DataManager, DataStar, DBPlot, Decision Management System, DecisionSpace, DecisionSpace 3D Drill View, DecisionSpace 3D Drill View KM, DecisionSpace AssetLink, DecisionSpace AssetPlanner, DecisionSpace AssetSolver, DecisionSpace Atomic Meshing, DecisionSpace Desktop, DecisionSpace Nexus, DecisionSpace Reservoir, DecisionSuite, Deeper Knowledge, Broader Understanding., Depth Team, Depth Team Explorer, Depth Team Express, Depth Team Extreme, Depth Team Interpreter, DepthTeam, DepthTeam Explorer, DepthTeam Express, DepthTeam Extreme, DepthTeam Interpreter, Desktop Navigator, DESKTOP-PVT, DESKTOP-VIP, DEX, DIMS, Discovery, Discovery 3D, Discovery Asset, Discovery Framebuilder, Discovery PowerStation, DMS, Drillability Suite, Drilling Desktop, DrillModel, Drill-to-the-Earth-Model, Drillworks, Drillworks ConnectML, Drillworks Predict, DSS, Dynamic Reservoir Management, Dynamic Surveillance System, EarthCube, EDM, EDM AutoSync, EDT, eLandmark, Engineer's Data Model, Engineer's Desktop, Engineer's Link, ESP, Event Similarity Prediction, ezFault, ezModel, ezSurface, ezTracker, ezTracker2D, FastTrack, Field Scenario Planner, FieldPlan, For Production, FrameBuilder, Frameworks to Fill, FZAP!, GeoAtlas, GeoDataLoad, GeoGraphix, GeoGraphix Exploration System, GeoLink, Geometric Kernel, GeoProbe, GeoProbe GF DataServer, GeoSmith, GES, GES97, GESXplorer, GMAPlus, GMI Imager, Grid3D, GRIDGENR, H. Clean, Handheld Field Operator, HHFO, High Science Simplified, Horizon Generation, I² Enterprise, iDIMS, Infrastructure, Iso Core, IsoMap, iWellFile, KnowledgeSource, Landmark (*as a service*), Landmark (*as software*), Landmark Decision Center, Landmark Logo and Design, Landscape, Large Model, Lattix, LeaseMap, LithoTect, LogEdit, LogM, LogPrep, Make Great Decisions, MathPack, MDS Connect, MicroTopology, MIMIC, MIMIC+, Model Builder, NETool, Nexus (*as a service*), Nexus (*as software*), Nexus View, Object MP, OpenBooks, OpenJournal, OpenSGM, OpenVision, OpenWells, OpenWire, OpenWire Client, OpenWire Server, OpenWorks, OpenWorks Development Kit, OpenWorks Production, OpenWorks Well File, PAL, Parallel-VIP, Parametric Modeling, Permedia, PetroBank, PetroBank Explorer, PetroBank Master Data Store, PetroStor, PetroWorks, PetroWorks Asset, PetroWorks Pro, PetroWorks ULTRA, PlotView, Point Gridding Plus, Pointing Dispatcher, PostStack, PostStack ESP, PostStack Family, Power Interpretation, PowerCalculator, PowerExplorer, PowerExplorer Connect, PowerGrid, PowerHub, PowerModel, PowerView, PrecisionTarget, Presgraf, PressWorks, PRIZM, Production, Production Asset Manager, PROFILE, Project Administrator, ProMAGIC, ProMAGIC Connect, ProMAGIC Server, ProMAX, ProMAX 2D, ProMax 3D, ProMAX 3DPSDM, ProMAX 4D, ProMAX Family, ProMAX MVA, ProMAX VSP, pSTAx, Query Builder, Quick, Quick+, QUICKDIF, Quickwell, Quickwell+, Quiklog, QUIKRAY, QUIKSHOT, QUIKVSP, RAVE, RAYMAP, RAYMAP+, Real Freedom, Real Time Asset Management Center, Real Time Decision Center, Real Time Operations Center, Real Time Production Surveillance, Real Time Surveillance, Real-time View, Reference Data Manager, Reservoir, Reservoir Framework Builder, RESev, ResMap, RTOC, SCAN, SeisCube, SeisMap, SeisModel, SeisSpace, SeisVision, SeisWell, SeisWorks, SeisWorks 2D, SeisWorks 3D, SeisWorks PowerCalculator, SeisWorks PowerJournal, SeisWorks PowerSection, SeisWorks PowerView, SeisXchange, Semblance Computation and Analysis, Sierra Family, SigmaView, SimConnect, SimConvert, SimDataStudio, SimResults, SimResults+, SimResults+3D, SIVA+, SLAM, SmartFlow, smartSECTION, smartSTRAT, Spatializer, SpecDecomp, StrataAmp, StrataMap, StrataModel, StrataSim, StratWorks, StratWorks 3D, StreamCalc, StressCheck, STRUCT, Structure Cube, Surf & Connect, SurfNet, SynTool, System Start for Servers, SystemStart, SystemStart for Clients, SystemStart for Servers, SystemStart for Storage, Tanks & Tubes, TDQ, Team Workspace, TERAS, T-Grid, The Engineer's DeskTop, Total Drilling Performance, TOW/cs, TOW/cs Revenue Interface, TracPlanner, TracPlanner Xpress, Trend Form Gridding, Trimmed Grid, Turbo Synthetics, Unconventional Essentials, VESPA, VESPA+, VIP, VIP-COMP, VIP-CORE, VIPDataStudio, VIP-DUAL, VIP-ENCORE, VIP-EXECUTIVE, VIP-Local Grid Refinement, VIP-THERM, vSpace, WavX, Web Editor, Well Cost, Well H. Clean, Well Seismic Fusion, Wellbase, Wellbore Planner, Wellbore Planner Connect, WELLCAT, WellDirect, WELLPLAN, WellSolver, WellXchange, WOW, Xsection, You're in Control. Experience the difference, ZAP!, ZetaAnalytics, and Z-MAP Plus are trademarks, registered trademarks, or service marks of Halliburton.

All other trademarks, service marks, and product or service names are the trademarks or names of their respective owners.

Note

The information contained in this document is subject to change without notice and should not be construed as a commitment by Halliburton. Halliburton assumes no responsibility for any error that may appear in this manual. Some states or jurisdictions do not allow disclaimer of expressed or implied warranties in certain transactions; therefore, this statement may not apply to you.

Third Party Licenses and Attributions

Halliburton acknowledges that certain third party code has been bundled with, or embedded in, its software. The licensors of this third party code, and the terms and conditions of their respective licenses, may be found at the following location:

[Installdir]/docs/Third_Party.pdf

Disclaimer

The programs and documentation may provide links to external web sites and access to content, products, and services from third parties. Halliburton is not responsible for the availability of, or any content provided on, third party web sites. You bear all risks associated with the use of such content. If you choose to purchase any products or services from a third party, the relationship is directly between you and the third party. Halliburton is not responsible for: (a) the quality of third party products or services; or (b) fulfilling any of the terms of the agreement with the third party, including delivery of products or services and warranty obligations related to purchased products or services. Halliburton is not responsible for any loss or damage of any sort that you may incur from dealing with any third party.

Mltimp

Overview

The Mltimp utility lets you import horizons to SeisWorks® software interpretation projects.

Format

Run `Mltimp` at a command line.

Or, select **Horizons > Import** from the Seismic Tools command menu.

To open the Seismic Tools launcher, select **Data > Management > Seismic Tools** from the OpenWorks Command Menu.

Remarks

Mlt formats can be in either binary or Ascii form. When you choose an **Input File** in the Mltimp utility, the application tells you whether the file was exported using the mlt Ascii or mlt binary format. This information displays in the bottom panel of the Mltimp dialog box.

Input Files with mlt formats can import many horizons at once.

If an **Input File** is not an mlt Ascii or binary format, a message box tells you that you are working with a **Legacy Format**. The **Legacy Format** is an Hie (Horizon Import/Import) or Hie-like format. (Hie is an older horizon utility replaced in Release 5000.0.0 by Mltxp.)

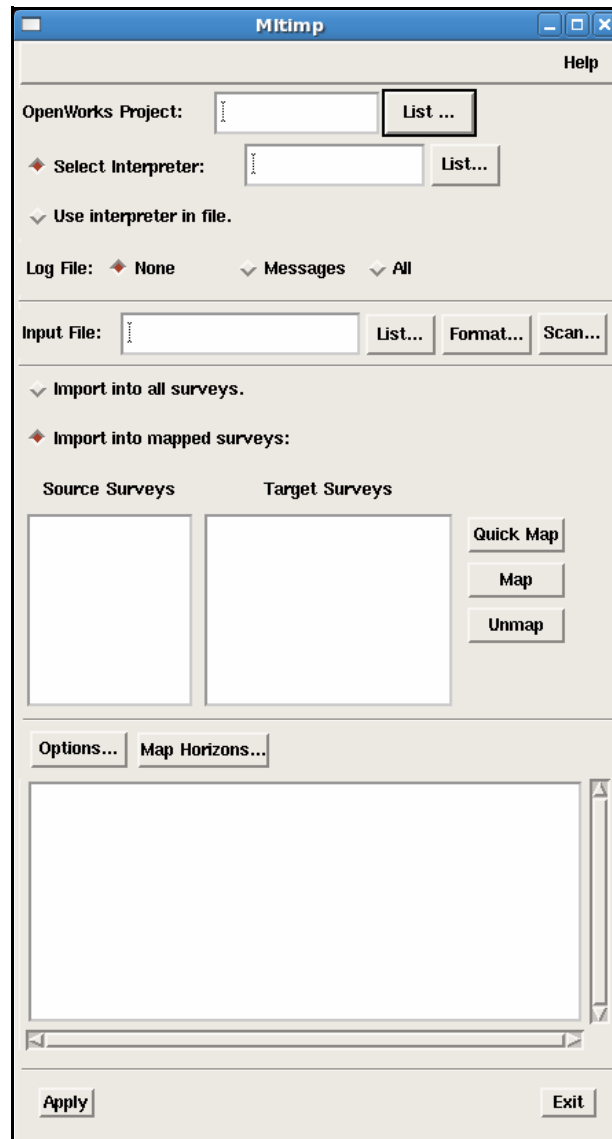
You can import multiple horizons using a **Legacy Format** as well.

Using the Mltimp Utility

A Workflow with the Mlt Binary Format

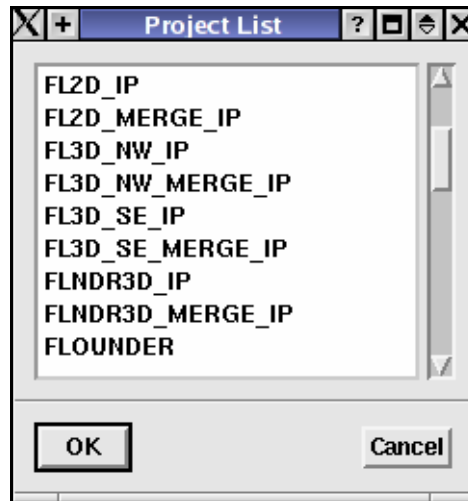
Getting Started

1. Start the Mltimp utility from a command line, or select **Horizons > Import** in the Seismic Tools main menu.
2. You may receive a message box asking you to select a screen for the Mltimp dialog box. Click Button 1 on the screen where you want to run Mltimp. The Mltimp window opens.



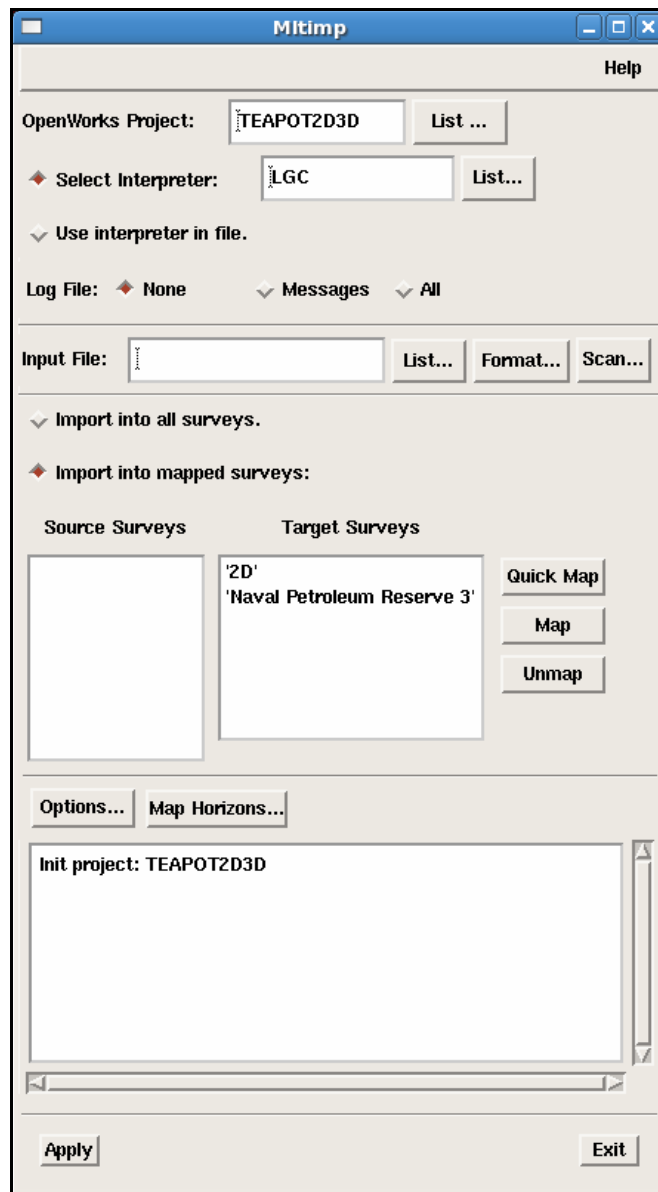
3. Click on the **List...** button next to **OpenWorks Project**.

The Project List dialog box appears.



4. Highlight a project, and click on **OK**.
5. The project name appears in the **OpenWorks Project** text field. In addition, the following occurs:
 - The Interpretation ID associated with the project appears in the **Select Interpreter** text field.
 - The surveys contained in the OpenWorks® interpretation project appear in the **Target Surveys** panel.
 - The words **“Init project”** followed by the name of the project appear in the bottom panel of the dialog box.

The dialog box with these changes displayed is shown on the next page.



6. Beginning with Release 5000.0.2.0, you can write a **Log File** each time Mltime runs. To do so, select one of the following in the top panel of the dialog box:
- **None**—This is the default.
 - **Messages**—Duplicates the status box to the log file.
 - **All**—Writes the message as well as data point test results to the log file. It displays whether a data point is imported or rejected and provides the point coordinates or input string.

Example of a log file written with the All option selected

```
Survey Mapping: fl3d_nw -> fl3d_nw
Reading file: /home/filer2home/btzeng/base_ascii.dat
Source horizon name: Two2 , UNKNOWN , , TIME_STRUCTURE
Source survey: fl3d_nw
YES: 1046.0 75.0 627373.87981 5754790.00002 406.18433
YES: 1046.0 76.0 627387.64496 5754810.69770 399.12036
YES: 1046.0 77.0 627401.41011 5754831.39537 392.10104
YES: 1046.0 78.0 627415.17526 5754852.09304 385.12680
```

7. Back in the Mltime dialog box, click on the **Input File List...** button.
8. When the Input File dialog box appears, select an **Input File**.
9. The file name appears in the **Input File** text field of the Mltime dialog box.
10. If Legacy formats were *not* used, the **Scan** button is inactive. This button lets you examine the contents of a Legacy file.
11. At the same time, names appear in the **Source Surveys** panel, and the following information appears in the bottom panel:
 - the cartographic system for the project and in the file, if it exists
 - which formats were used in exporting the file, such as lines or traces
 - whether all coordinates were used during export
 - how the Import Coordinate System is set (for instance, line and trace.)

- whether the file was exported using mlt Ascii format or some other format.

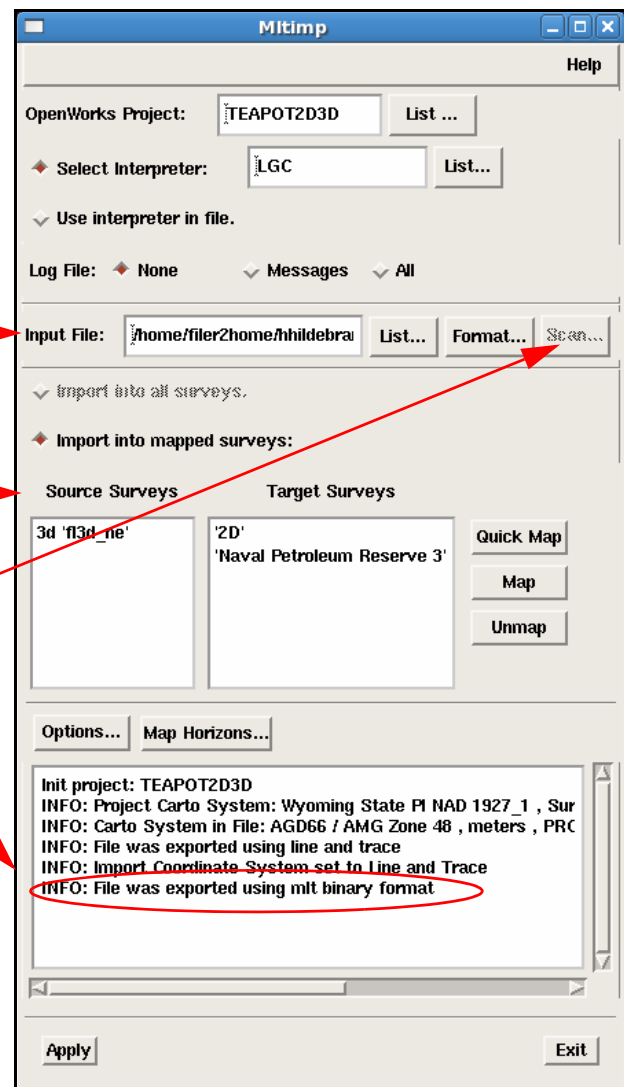
How the Mltime Dialog Box Looks After You Choose an Input File

The **Input File** name appears in the text field after a selection is made from the **List...** dialog box.

At the same time, the software fills out the **Source Surveys** panel.

In this example, Legacy formats were not used, so the **Scan...** button is grayed out. This button lets you review the contents of a Legacy file.

The bottom panel tells you that the file was exported using the mlt binary format. It also contains information about the cartographic reference systems for the project and file; whether all coordinates were used during export; and how the Import Coordinate System is set.



Setting a preferred directory

You can use the following environmental variable to set preferred directories for import/export files:

LGC_SW_IE_DIR

Mapping Surveys

Once **Source Surveys** and **Target Surveys** are listed, you must map source to target.

To do so:

1. Highlight a **Source Survey**.
2. Highlight a **Target Survey**.
3. Press the **Map** button on the right side of the dialog box.
4. In the **Target Surveys** panel, the name of the Source Survey will be appended to the name of the Target Survey, as the following example shows:

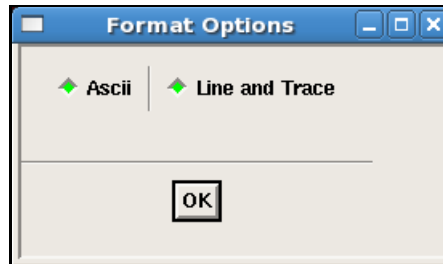
```
f13d_nw <- 'SurveyTest'
```

The Quick Map and Unmap buttons

There are two other buttons besides **Map**:

- When you press **Quick Map**, the Mltime utility selects the survey closest in name to the **Target Survey**. For instance, with **f13d** selected as the **Target Survey**, **Quick Map** selects the **f13d** target survey for mapping. It will not pick **f13d_nw** or **f13d_se**.
- The **Unmap** button undoes your mapping choice.

5. Click on the **Format** button in the second panel of the Mltime dialog box.
6. If the exported file used a mlt Ascii format, the Format Options dialog box will resemble the following illustration, with **Line and Trace** selected by default:



7. Click on **OK**.
8. In the Mltime dialog box, click on **Options**.

The Import Options dialog box appears. The interface at left is summoned when you are working with the binary format; the interface at right appears when you work with **Legacy Formats**.

Import Options

Min. points per line (2D):

Shift (Z):

Horizon depth (Z) unit conversion

- No Z unit conversion.
- Convert Z from meters to feet.
- Convert Z from feet to meters.
- Automatic Z conversion.

New horizon version:

Add version prefix & suffix

Version prefix:

Version suffix:

Load Horizons:

- Overwrite existing horizon data.
- Do not overwrite existing horizon data.
- After clearing existing horizon data.

Import Options

Interpolate

XY tolerance for import:

Min. points per line (2D):

Shift (Z):

Horizon depth (Z) unit conversion

- No Z unit conversion.
- Convert Z from meters to feet.
- Convert Z from feet to meters.
- Automatic Z conversion.

New horizon version:

Add version prefix & suffix

Version prefix:

Version suffix:

Load Horizons:

- Overwrite existing horizon data.
- Do not overwrite existing horizon data.
- After clearing existing horizon data.

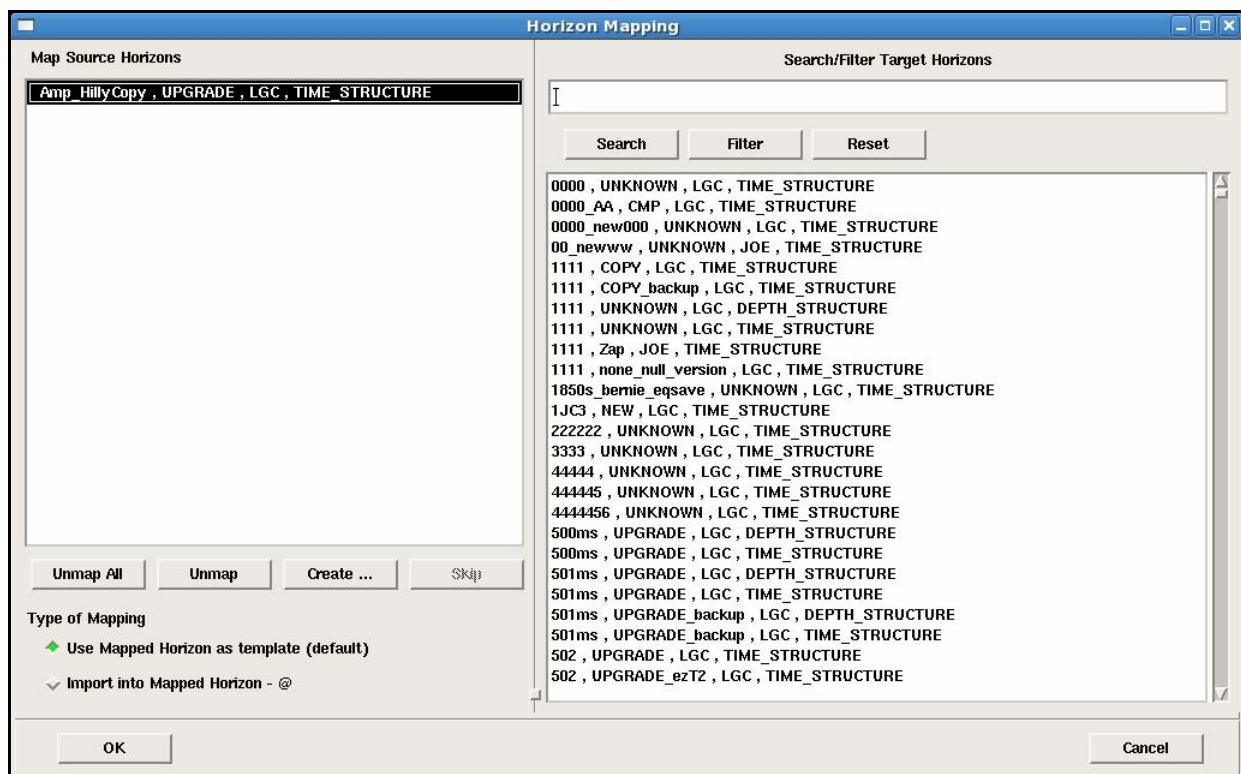
The chart below explains the choices in the Import Options dialog box.

Option	Function
Top panel: Available only when using Legacy Formats	
Interpolate	Fills in gaps in horizons. Off by default. Available when using Legacy Formats only.
Xy Tolerance for Import (Ascii only)	The input horizon value will be written to the nearest grid point that is within this tolerance. This option appears in the Import Options dialog box only with files exported using <i>x/y</i> values. Available when using Legacy Formats only.
Top panel: Available in all versions of dialog box	
Min Points per Line (2D)	The utility will import only those 2D lines that have at least the number of points specified in this text field. For instance, if you typed in the value 5, a line with only 4 points would not be imported. The default is 0.
Shift (Z)	Lets you type in a number by which you would shift the z value. The default is 0.0.
Horizon depth (Z) unit conversion	
• No Z unit conversion	Available for binary and Legacy formats.
• Convert Z from meters to feet	Available for binary and Legacy formats.
• Convert Z from feet to meters	Available for binary and Legacy formats.
• Automatic Z conversion	The default.
New Horizon Version	
Lets you specify a new horizon version name on all horizons in the import file.	
Add Version Profile & Suffix	
Toggled on by default, this option lets you specify a prefix and suffix for the imported horizon.	
• Version Prefix	Lets you add a version prefix to the imported horizons. If the original version name contains UNKNOWN or UPGRADE , the software ignores these designations. In their place, the new version uses the prefix plus the suffix.
• Version Suffix	Lets you add a suffix to the imported horizons. If the original version name contains UNKNOWN or UPGRADE , the software ignores these designations. In their place, the new version uses the prefix plus the suffix.

Load Horizons:	
• Overwrite existing horizon data	The default.
• Do not overwrite existing horizon data	The utility will load all data, but only new, non-null data will be added. Existing data is not affected.
• After clearing existing horizon data	The Mltimep utility erases the horizon data in a file and replaces it with all the data in the file of your choosing.

9. Make selections in the Import Options dialog box, as needed.
10. Click on **OK** in the Import Options dialog box.
11. Now, you can map a horizon to another file. To do so, click on the **Map Horizons...** button at the bottom of the Mltimep dialog box.

The Horizon Mapping dialog box appears.



12. The left-hand panel displays Map Source Horizons, the horizons that reside in the **Input file** that you chose in the Mltimep dialog box.

13. Highlight the horizon you want to use. If several horizons are listed but you want to use only certain ones, highlight the unwanted horizons and click **Skip**. Continue this process until you are finished.
14. You can also create a horizon by clicking on the **Create...** button and filling in the fields in the resulting Create Horizon dialog box. The name of the new horizon is then appended to the Map Source Horizon you have selected in the left-hand panel. This new name is highlighted.
15. In the right-hand panel, select the horizon you want to map to. (Use the search/filter capability to find it quickly.) By default, this horizon will serve as the template for the imported horizons.

You can write into the existing Mapped Horizon with the source horizon by toggling on **Import into Mapped Horizon - @**. The write option is defined in the bottom panel of the Import Options dialog box. For more details of this dialog box, see page [13](#).

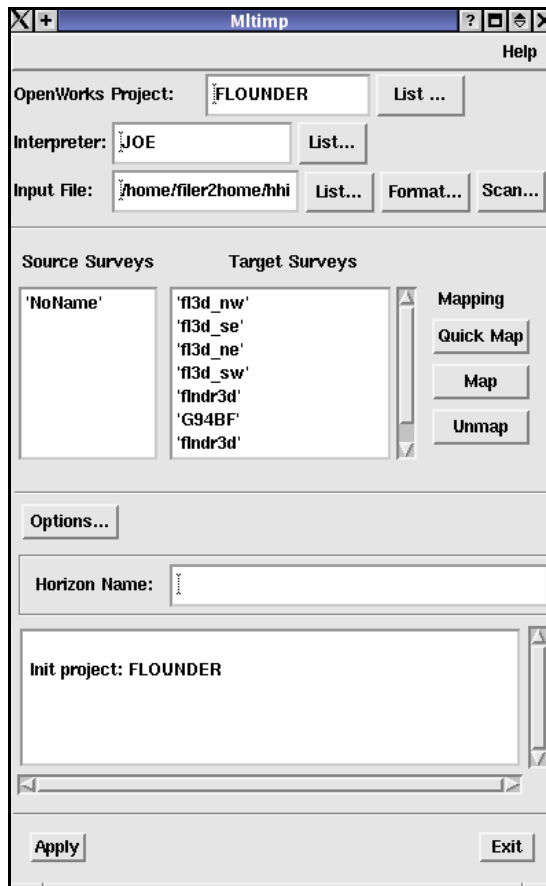
16. Click **OK** in the Horizon Mapping dialog box.
17. Click on **Apply** in the Mltimp dialog box.
18. A progress box appears, then a Message telling you how many points were processed.
19. Click **OK** in the Message box to close it and the progress bar.
20. Examine the bottom panel of the Mltimp dialog box for information about the operation.
21. Click **Exit** to exit the utility.

A Workflow Using a Legacy Format

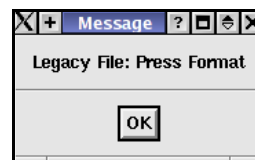
The Mltimp utility offers **Legacy Formats** for third-party applications that cannot read Mlt formats. Use this workflow when you are using files in a Legacy Format:

1. Follow Steps [2-9](#) above.
2. If the **Input File** you select in the Input File dialog box is in a **Legacy Format**, **NoName** appears in the **Source Surveys** panel of

the Mltimp dialog box. (That is because the **Legacy Format** does not include the survey name.)

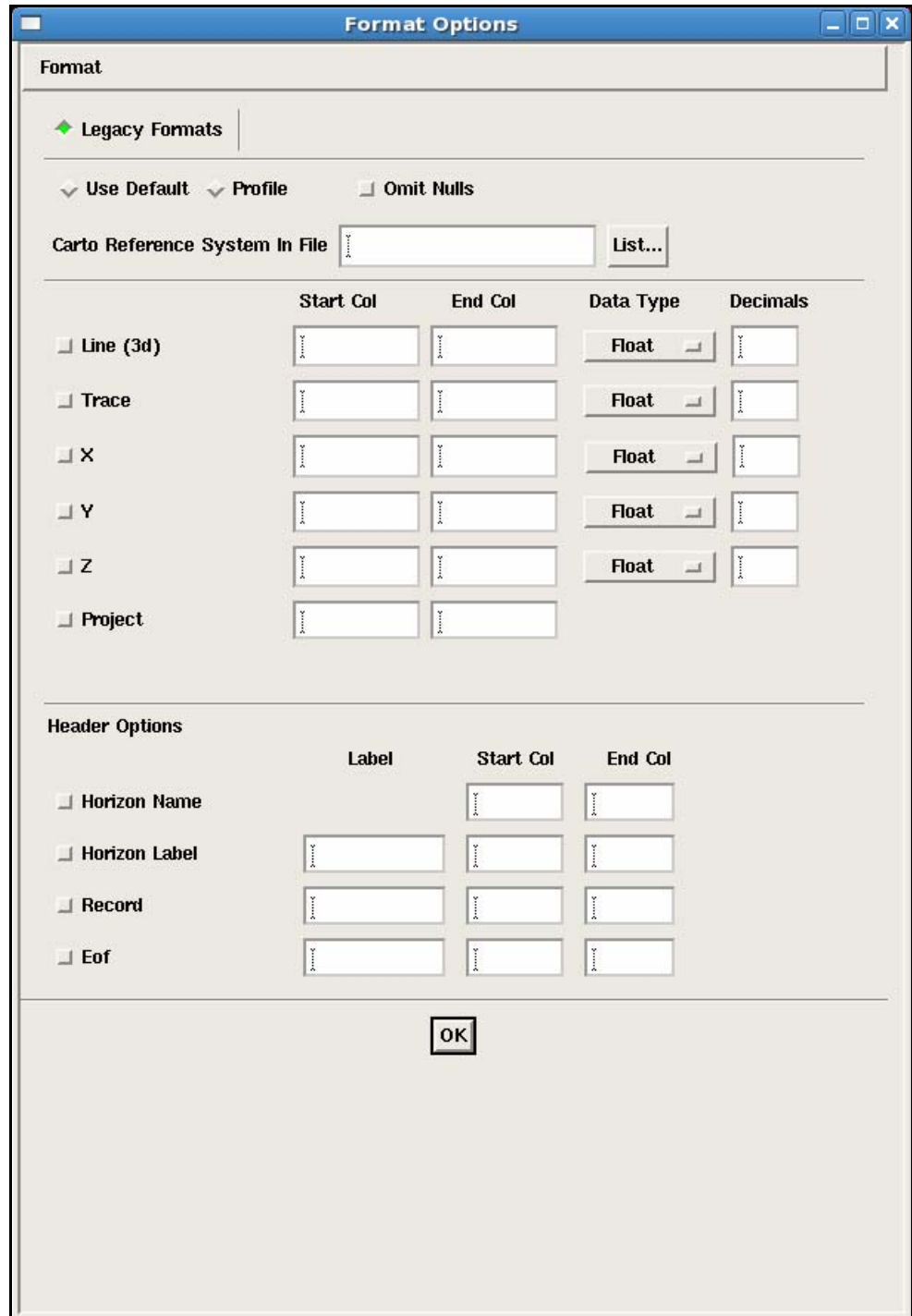


In addition, the following message box appears:



3. Click on **OK** in the Message box.
4. Press **Format** in the Mltimp dialog box.

The Format Options dialog box appears, as illustrated below.



5. When you toggle on **Use Default** at the top of the dialog box, all the text fields except those in the **Header Options** panel are populated, as shown below.

The screenshot shows the 'Format Options' dialog box. The 'Legacy Formats' section is active, and the 'Use Default' checkbox is checked. Below this, there are fields for 'Carto Reference System In File' and a 'List...' button. A table lists data types and their corresponding column ranges and decimal places.

	Start Col	End Col	Data Type	Decimals
<input type="checkbox"/> Line (3d)	21	30	Float	2
<input type="checkbox"/> Trace	31	41	Float	2
<input type="checkbox"/> X	42	53	Float	2
<input type="checkbox"/> Y	54	65	Float	2
<input type="checkbox"/> Z	67	77	Float	3
<input type="checkbox"/> Project	82	97		

Below the table is the 'Header Options' section, which includes checkboxes for 'Horizon Name', 'Horizon Label', 'Record', and 'Eof', each with associated 'Label', 'Start Col', and 'End Col' text fields.

6. When **Use Default** is toggled on, you can select the **Omit Nulls** checkbox as well. Checking the **Omit Nulls** box makes a **Null Value** text field appear. This text field lets you specify the null value you wish to omit.

This close-up shows the 'Legacy Formats' section with 'Use Default' checked and 'Omit Nulls' also checked. A 'Null Value' text field is now visible to the right of the 'Omit Nulls' checkbox.

7. Instead of **Use Default**, you can toggle on **Profile**. This term is used with third-party applications. Toggling it on fills the text fields with different values than those that appear when you select **Use Default**. In addition, **Header Options** text fields are automatically populated at the bottom of the dialog box.

The **Header Options** let you establish the following:

- **Horizon Name**—Select the length of the horizon name as it will appear in the import file. For instance, if your **Horizon Label** is six characters long, you would want to type in at least 8 in the **Start Col** for **Horizon Name** in order to allow some space between the **Horizon Label** and the **Horizon Name** entries in your export file. If you wanted to see the longest possible horizon name in such an instance, you would type in 67 in the **End Col**, because horizon names are limited to 60 characters.
 - **Horizon Label**—Type in a keyword in the **Label** column. In the **Start Col** field, enter 1 to represent the beginning character of the horizon label. The value you enter in **End Col** would reflect the number of characters in the **Horizon Label**. The default **Horizon Label** when you toggle on **Profile** is **PROFILE**.
 - **Record**—Defines a data record for the **PROFILE** format. You should disregard it when using other Legacy Formats.
 - **Eof**—Defines a special line in the export file which indicates end-of-horizon data. The default **Eof Label** is **EOD** when you toggle on **Profile**.
8. Beginning with Release 5000.0.2.5, you can, if needed, convert a cartographic reference system. To do so, click on the **List...** button next to **Carto Reference System for the file**. When the dialog box titled Select Carto Reference System appears, highlight your selection, and click **OK**.
 9. When you have made your changes in the Format Options dialog box, click **OK**.
 10. Click on the **Options** button in the Mltimep dialog box.

The Import Options dialog box appears, as illustrated on the next page.

Import Options

Interpolate

XY tolerance for import:

Min. points per line (2D):

Shift (Z):

Horizon depth (Z) unit conversion

No Z unit conversion.

Convert Z from meters to feet.

Convert Z from feet to meters.

Automatic Z conversion.

New horizon version:

Add version prefix & suffix

Version prefix:

Version suffix:

Load Horizons:

Overwrite existing horizon data.

Do not overwrite existing horizon data.

After clearing existing horizon data.

11. Make choices as necessary in the Import Options dialog box, and click **OK**. (For an explanation of the options, see the chart on page 13.)

Horizon prefixes, suffixes, and Legacy formats

If you import data in Legacy Formats, the software ignores **Version Prefixes** and **Version Suffixes** if you select an existing horizon or create a new one. Existing horizon data is overwritten and the original version name is retained.

12. Return to the Mltime dialog box.

13. In the **Target Surveys** panel, click on the survey name, then on **Map**. (Because **NoName** is identified as the **Source Survey**, the **Quick Map** button is not available for use.)
14. Click on **Map Horizons...** in the lower half of the Mltime dialog box.
15. The Horizon Mapping dialog box appears, as shown on page 14. Follow Steps 12-16, beginning on page 14.
16. After clicking **OK** in the Horizon Mapping dialog box, return to the Mltime dialog box
17. Click **OK** in the Mltime dialog box.
18. A progress box appears, then a Message telling you how many points were processed.
19. Click **OK** in the Message box to close it and the progress bar.
20. Examine the bottom panel of the Mltime dialog box for information about the operation, including how many points were processed.
21. Click **Exit** to exit the utility.

Running in Batch Mode

For instructions on running the Mltime utility in batch mode, type

```
mltime.exe -h
```

at the command line.

