

SeisWorks® Horizon Output

SeisWorks® Horizon Output exports horizon tables directly from the ProMAX® Area/Line to a specified SeisWorks® project within the legacy OpenWorks® (version 2003.12.X) database.

Note: To read and write R5000 version SeisWorks® horizons, use the SeisSpace® R5000 tools.

In order to use **SeisWorks® Horizon Output**, you must have a valid OpenWorks® license.

Theory

ProMAX® horizon tables are written directly to the legacy OpenWorks® (version 21003.12.X) interpretation database within the specified SeisWorks® project.

SeisWorks® Horizon Output operates in tandem with a second process, **SeisWorks® Horizon Input**, which performs the reverse process; any SeisWorks® interpreted horizon may be imported directly to a ProMAX® horizon table of the same name within the current Area/Line.

The SeisWorks® software supports a tiled 3D horizon format (.hts) which supplements the horizon format (.hzd) files. Tiling provides display speed improvements and conserves disk space by only storing tiles where data exists. The ProMAX® system reads both formats (.hzd and .hts) but only writes the .hts format when converting to a SeisWorks® 3D horizon.

ProMAX® table keys

Horizon Picks (HOR) tables

For 2D projects, the primary key must be LINE_NO and the secondary key must be FRN_TRNO or CDP. The program assumes that LINE_NO equals SeisWorks® Internal Line Number and that FRN_TRNO or CDP equals SeisWorks® Trace Number.

Note: If the table's secondary key is CDP and ProMAX® CDP does not equal SeisWorks® Trace Number, then you must edit the table to change the CDP values.

Note: If the table was picked on data that were not imported via **SeisWorks® Seismic Input**, then LINE_NO contains the ProMAX® hashed line number, not the SeisWorks® line number. You must edit the table to change the LINE_NO values. See **How to get SeisWorks® line numbers for a 2D project** in **Usage** for information on how to determine the appropriate value.

For 3D projects, supported primary and secondary key combinations are CDP - CDP, ILINE_NO - XLINE_NO and XLINE_NO - ILINE_NO. If the primary and secondary keys are CDP, then the program uses the LIN order of the ProMAX® database to convert CDP to ILINE_NO and XLINE_NO. The program assumes that ILINE_NO equals SeisWorks® Line Number and that XLINE_NO equals SeisWorks® Trace Number.

Interpreted Horizon in Time (IHT) or Depth (IHD) tables

For these tables, the primary key is always CDP and the secondary key is always NULL.

For 2D projects, the program assumes that CDP equals SeisWorks® Trace Number. Since IHT and IHD tables do not store the SeisWorks® Internal Line Number, you must provide it via parameter **SeisWorks® 2D Line number**. See **How to get SeisWorks® line numbers for a 2D project** in **Usage** for information on how to determine the appropriate value.

Note: If ProMAX® CDP does not equal SeisWorks® Trace Number, then you must edit the table to change the CDP values.

For 3D projects, the program the program uses the LIN order of the ProMAX® database to convert CDP to ILINE_NO and XLINE_NO. The program assumes that ILINE_NO equals SeisWorks® Line Number and that XLINE_NO equals SeisWorks® Trace Number.

Usage

Your environment must be configured to write the SeisWorks® horizon data to the legacy OpenWorks® (2003.12.X) database:

- You must initiate the ProMAX®/SeisSpace® software as a valid user. This condition is satisfied if the ProMAX® userid matches the userid of the owner of the SeisWorks® project. Alternatively, the system administrator should set LINUX read/write permissions so that the ProMAX® userid has access to the SeisWorks® Project.
- SeisWorks® Horizon Output sources the OpenWorks® environment settings for the 2003.12.X OpenWorks software from \$PROMAX_HOME/sys/exe/bridge.env file. All the environment settings in the bridge.env file must be configured to match your legacy OpenWorks®/SeisWorks® environment. The default bridge.env file is shown below:

```
#!/bin/bash

#

export BRIDGE_INSTALL=

export LD_LIBRARY_PATH=

export OW_DDF=

export OWHOME=

export OW_DBTYPE=oracle

export OWSYSID=

export OW_PMPATH=

export OW_NO_COPYRIGHT=OFF

#
```

- The settings for bridge.env are completely separate from your R5000 OpenWorks® environment which is typically set for the ProMAX®/SeisSpace® software in your .login, .lgclogin, .profile, .cshrc file, or the ProMAX®/SeisSpace® startup scripts. The OWHOME environment variable in bridge.env should point to the location of the

legacy 2003.12.X OpenWorks® directory. Similarly, the OW_PMPATH environment variable should point to the location of the legacy OpenWorks® conf directory which is typically located below the 2003.12.x or 2003.19.x OpenWorks® directory and contains the projects' plist.dat and dir.dat directories. For example:

```
setenv OWHOME /network/hostname/landmark/OpenWorks
```

```
setenv OW_PMPATH /network/hostname/landmark/OpenWorks/conf
```

- bridge.env can be relocated to a user's home directory or (any other location) by setting an environment variable to specify its alternate location:

```
setenv PROMAX_SYS_EXE_BRIDGEDOTENV_HOME  
/home/user1/bridge.env
```

- All the data directories defined in legacy OpenWorks®/SeisWorks® OW_PMPATH/dir.dat must be mounted to the machine running the ProMAX®/SeisSpace® software. This means that the machine you are running the ProMAX® on from needs to be able to **cd** to the directories listed in the legacy dir.dat using the same path name shown in the dir.dat file.

The ProMAX® system assumes that the sample rate, number of samples, and start time are fixed during the course of a job run. This is controlled by the first trace input in the flow.

How to get SeisWorks® line numbers for a 2D project

The SeisWorks® software sequentially assigns line numbers within a 2D project. If you only have one line, that number will be 1. If you have more than one line you can use the command **lincat project_name** in a LINUX terminal window on the machine where the OpenWorks® software exists. This will sequentially list line names in order of Internal Line Number.

Another method is to read traces back into the ProMAX® system using **SeisWorks® Seismic Input with Trace Display**. If you have many lines, you only need to call in a minimal number of traces. Annotate LINE_NO and verify the SW_LINE word with the header icon.

Parameters

Select SeisWorks® project type

Select between **2D** and **3D** project types.

Select a SeisWorks® project

Select the SeisWorks® project name from the menu. The list of projects is read from the \$OWHOME/conf/plist.dat file and depends upon whether you selected a 2D or 3D project

Type of ProMAX® horizon table

Select the type of ProMAX® horizon table from the following:

- **Horizon Picks** (HOR)
- **Interpreted Horizon in Time** (IHT)
- **Interpreted Horizon in Depth** (IHD)

ProMAX® Horizon Tables

Select horizon tables from the horizon menu. Horizons may be individually selected or deselected, or multiple horizons can be selected or deselected by dragging **MB1** or **MB2**. After horizons are marked for selection, the selection list is saved so that the same horizons will show as marked when the menu is exited and re-entered.

Name of SeisWorks® Horizon

This appears if **1 table selected** to **ProMAX® Time Horizon Tables**. Enter the name of the output SeisWorks® horizon. Maximum length is 60 characters.

If multiple tables are selected, then the ProMAX® table names become the SeisWorks® horizon names. If necessary, the ProMAX® names are truncated to 60 characters.

SeisWorks® 2D Line number

This appears if **2D** to **Select a SeisWorks® project type** and **Interpreted Horizon in Time or Depth** to **Type of ProMAX® horizon table**. IHT and IHD tables do not store the SeisWorks® Internal Line Number; therefore, you must provide it. See **How to get SeisWorks® line numbers for a**

2D project in **Usage** for information on how to determine the appropriate value.

Clear existing horizons?

Select **Yes** to clear (overwrite) existing horizons. Select **No** to append (add) points to existing horizons.

Verbose printout?

Select **Yes** if you have a problem and need to get extended printout to help understand what is happening.

Common error messages

lgc_getenv: Environment variable OWHOME is undefined

lgc_getdir: OW_PMPATH is undefined

Until the links between the ProMAX® and SeisWorks® software are properly set up by your systems administrator, you will encounter this common error message whenever you want to select parameters.

When you minimize the interface, you see the above message. The environmental variable OWHOME has not been set and the ProMAX® system does not know where to go to look for your SeisWorks® project. This can be confirmed by typing **env** at the UNIX prompt in the window that started the ProMAX® software. You will be shown a listing of all the environmental variables currently in effect within this window. Please see your systems administrator about how to set the OWHOME and OW_PMPATH variables or refer to the examples provided in the **SeisWorks® Seismic Input** or **Output** helpfiles.