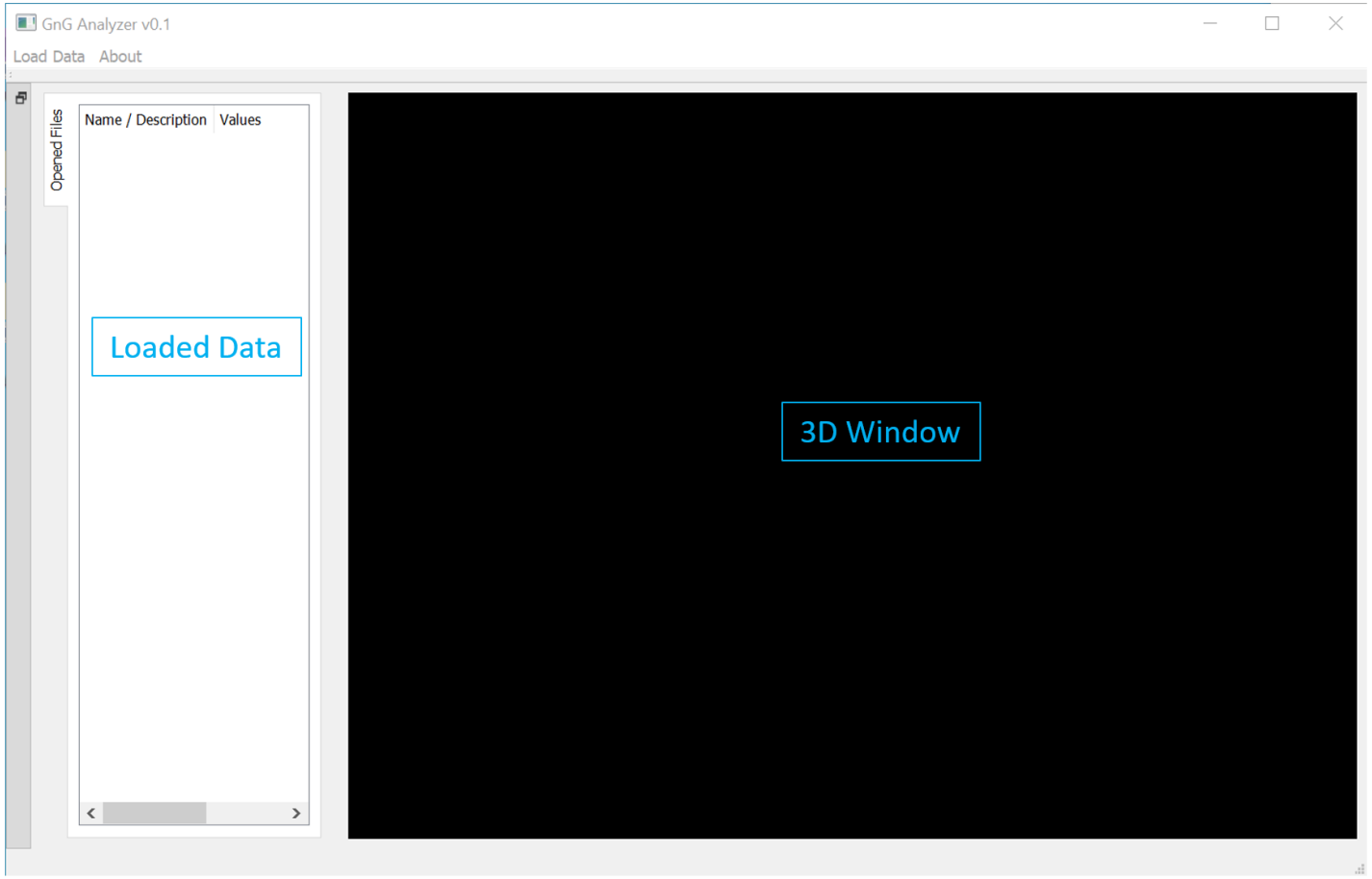
GnGAnalyzer User Manual

Version 0.1

Sep 9th , 2023

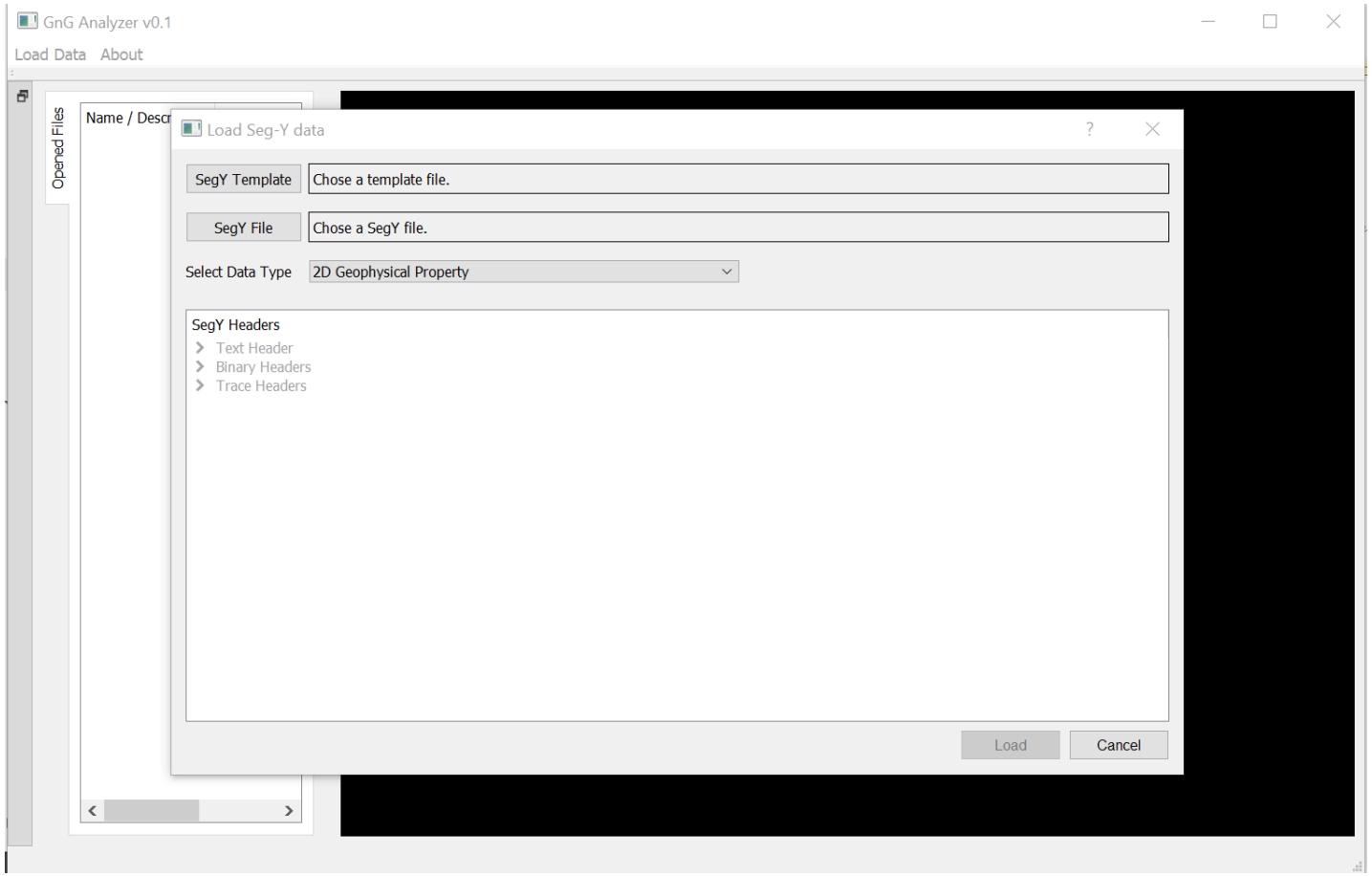
Applications starts by opening Main Window

Application's main window. The right-hand black window shows the 3D content. The left-hand white sub window shows the open files and some of their basic attributes



Data Loading

The "Load Seg-Y data" dialog box opens when "Load Data" menu button is clicked. The box requires a SegY template and SegY file. Header values from the first few traces can be viewed by clicking the arrows (>) under the "SegY Headers" section.



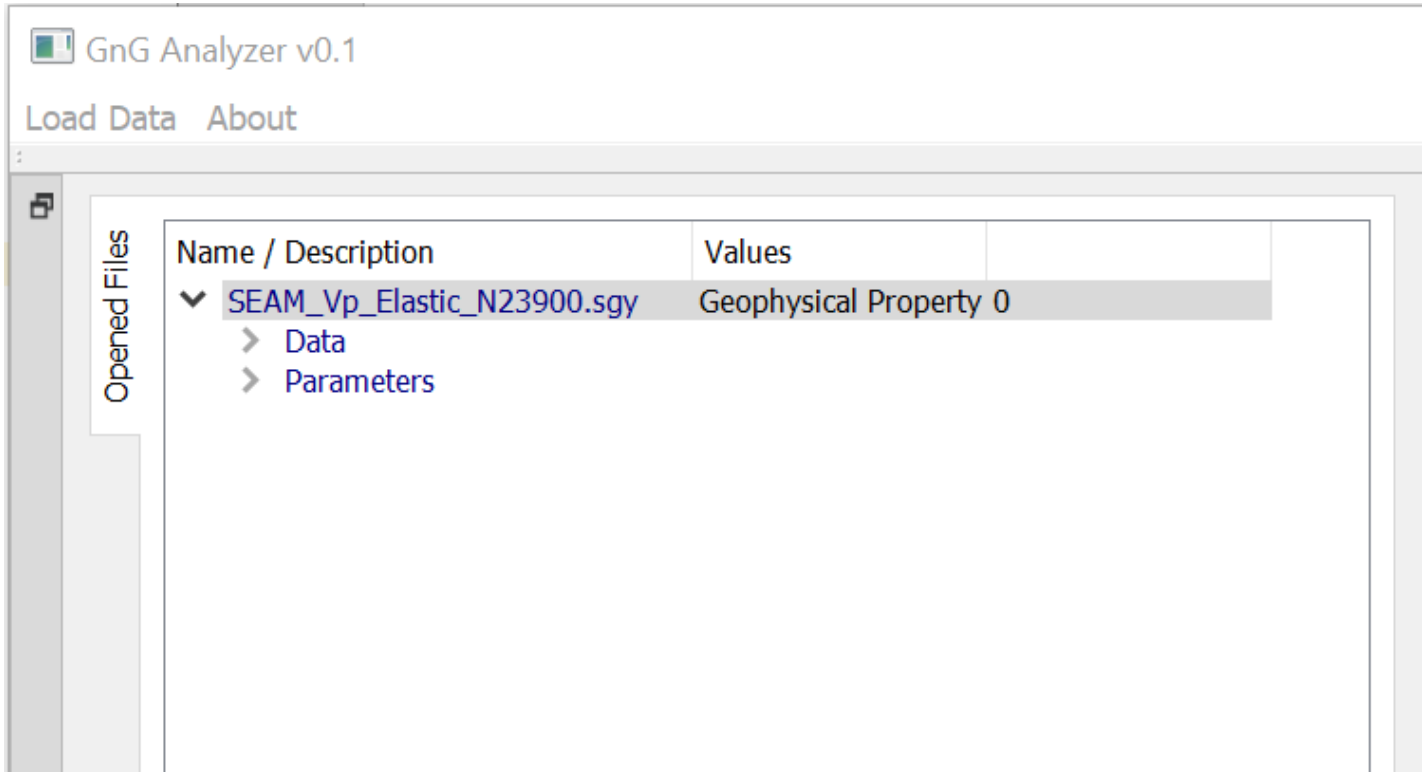
Sample SegY template file

A sample SegY template file is provided with the source code.

```
//CRITICAL: Do not edit header names;;;;;;;
//Template version 5.0
//Template based on SEG Revision 1.0 May 2002;;;;;;;
//Start binary header;;;;;;;
##;Name;Type;Value;Load;Start Byte;End Byte;Description
bh;JobIdNum;int32;0;1;3201;3204;Job Identification Number
bh;LineNum;int32;0;1;3205;3208;Line number. For 3-D poststack data, this will typically contain the in-line number.
bh;ReelNum;int32;0;1;3209;3212;Reel number
bh;DataTrcNumEnsem;int32;0;1;3213;3214;Number of data traces per ensemble. Mandatory for prestack data
bh;AuxTrcNumEnsem;int32;0;1;3215;3216;Number of auxiliary traces per ensemble. Mandatory for prestack data
bh;SampInt;int32;0;1;3217;3218;Sample interval in microseconds (us). Mandatory for all data types
bh;SampIntOrig;int32;0;1;3219;3220;Sample interval in microseconds (us) of original field recording.
bh;NumSampTrc;int32;0;1;3221;3222;Number of samples per data trace. Mandatory for all types of data.
bh;NumSampTrcOrig;int32;0;1;3223;3224;Number of samples per data trace for original field recording.
bh;DataFormat;int32;0;1;3225;3226;Data sample format code.
bh;EnsemFold;int32;0;1;3227;3228;Ensemble fold - Expected number of data traces per trace ensemble (e.g. the CMP fold). Highly recommended for all types of data.
bh;TrcSort;int32;0;1;3229;3230;Trace sorting code
bh;VertSum;int32;0;1;3231;3232;Vertical sum code
bh;SweepFreqStart;int32;0;1;3233;3234;Sweep frequency at start (Hz).
bh;SweepFreqEnd;int32;0;1;3235;3236;Sweep frequency at end (Hz).
bh;SweepLength;int32;0;1;3237;3238;Sweep length (ms).
bh;SweepType;int32;0;1;3239;3240;Sweep type code.
bh;SweepTrcNum;int32;0;1;3241;3242;Trace number of sweep channel.
bh;SweepTrcLen;int32;0;1;3243;3244;Sweep trace length in milliseconds at end.
bh;SweepTrcTapr;int32;0;1;3245;3246;Sweep trace taper length in milliseconds at end.
bh;TaprTyp;int32;0;1;3247;3248;Taper type
bh;CorDataTrc;int32;0;1;3249;3250;Correlated data traces
bh;BinGainRecov;int32;0;1;3251;3252;Binary gain recovered
bh;AmpRecovMod;int32;0;1;3253;3254;Amplitude recovery mode
bh;MeasSys;int32;0;1;3255;3256;Measurement system, 1=Meters, 2=Feet
bh;ImpPol;int32;0;1;3257;3258;Impulse signal polarity
bh;VibPol;int32;0;1;3259;3260;Vibratory polarity code
bh;UnAssigned1;int32;0;0;3261;3500;Unassigned
bh;SegYRevNum;int32;0;1;3501;3502;SEG Y Format Revision Number
bh;FxdTrcLenFlag;int32;0;1;3503;3504;Fixed length trace flag
bh;NumOfExtHdrs;int32;0;1;3505;3506;Number of 3200-Byte Extended Textual File Header records following the Binary Header
bh;UnAssigned2;int32;0;0;3507;3600;Unassigned
//End Binary Header;;;;;;;
//////////;;;;;;;
//Start Trace Header;;;;;;;
th;TrcNumLine;int32;0;1;1;4; Trace sequence number within line.
th;TrcNumReel;int32;0;1;5;8; Trace sequence number within reel.
th;OrigFldRecNum;int32;0;1;9;12; Original field record number.
th;TrcSeqNumOrigFld;int32;0;1;13;16; Trace sequence number within original field record.
th;EnrgySrcPtNum;int32;0;1;17;20; Energy source point number.
th;CDPEnsemNum;int32;0;1;21;24; CDP ensemble number.
th;TrcSeqNumEnsem;int32;0;1;25;28; Trace sequence number within CDP ensemble
```

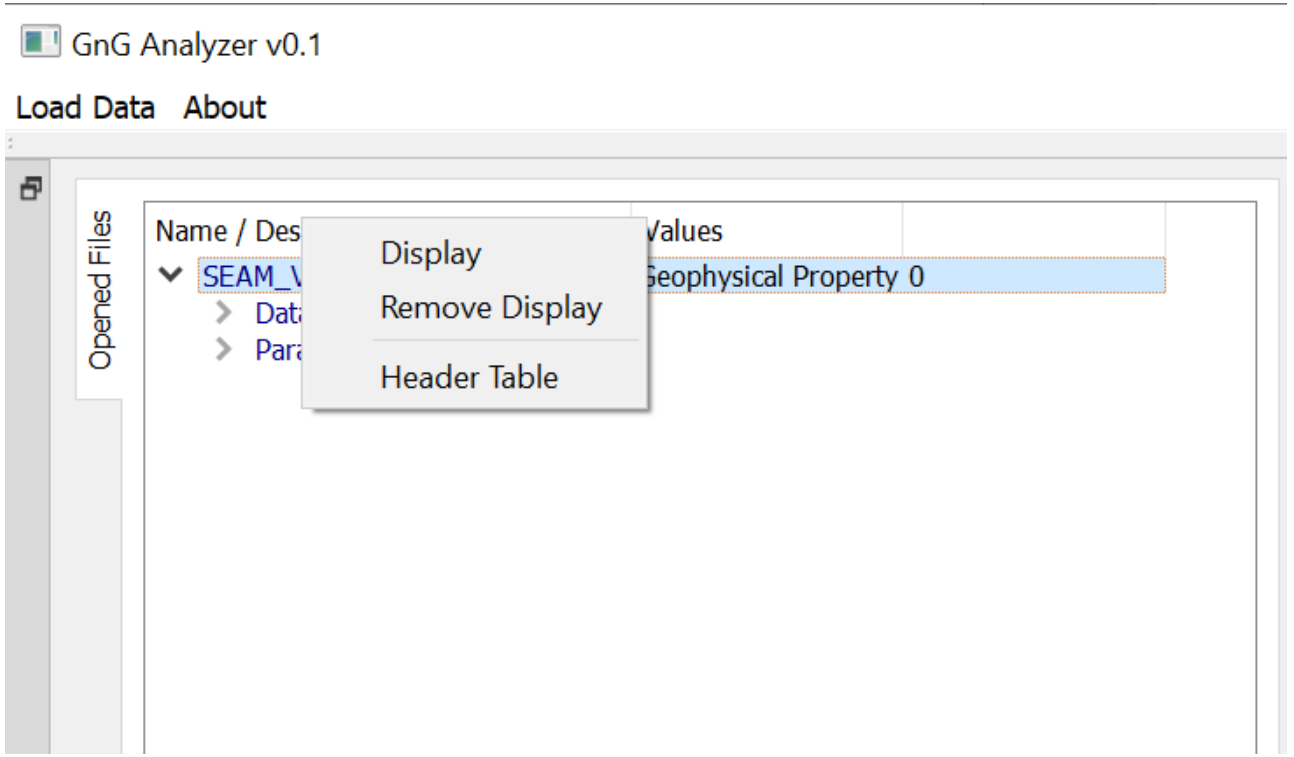
Loaded SegY file

Loaded data is shown in the left sub window



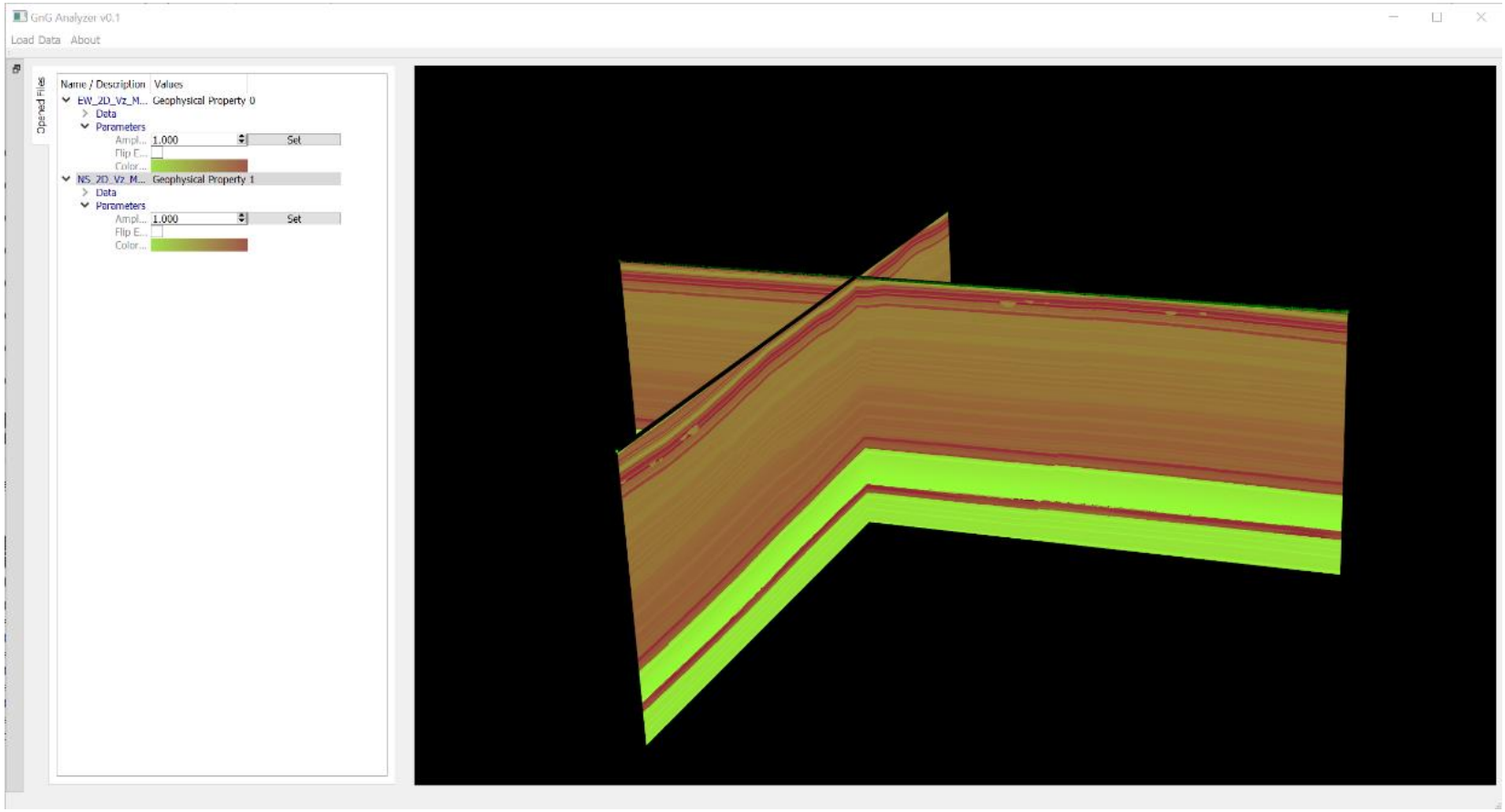
Viewing Data and Headers

Right Clicking on the file name opens a context menu. The user can show the data by clicking "Display" or hide data by clicking "Remove Display".



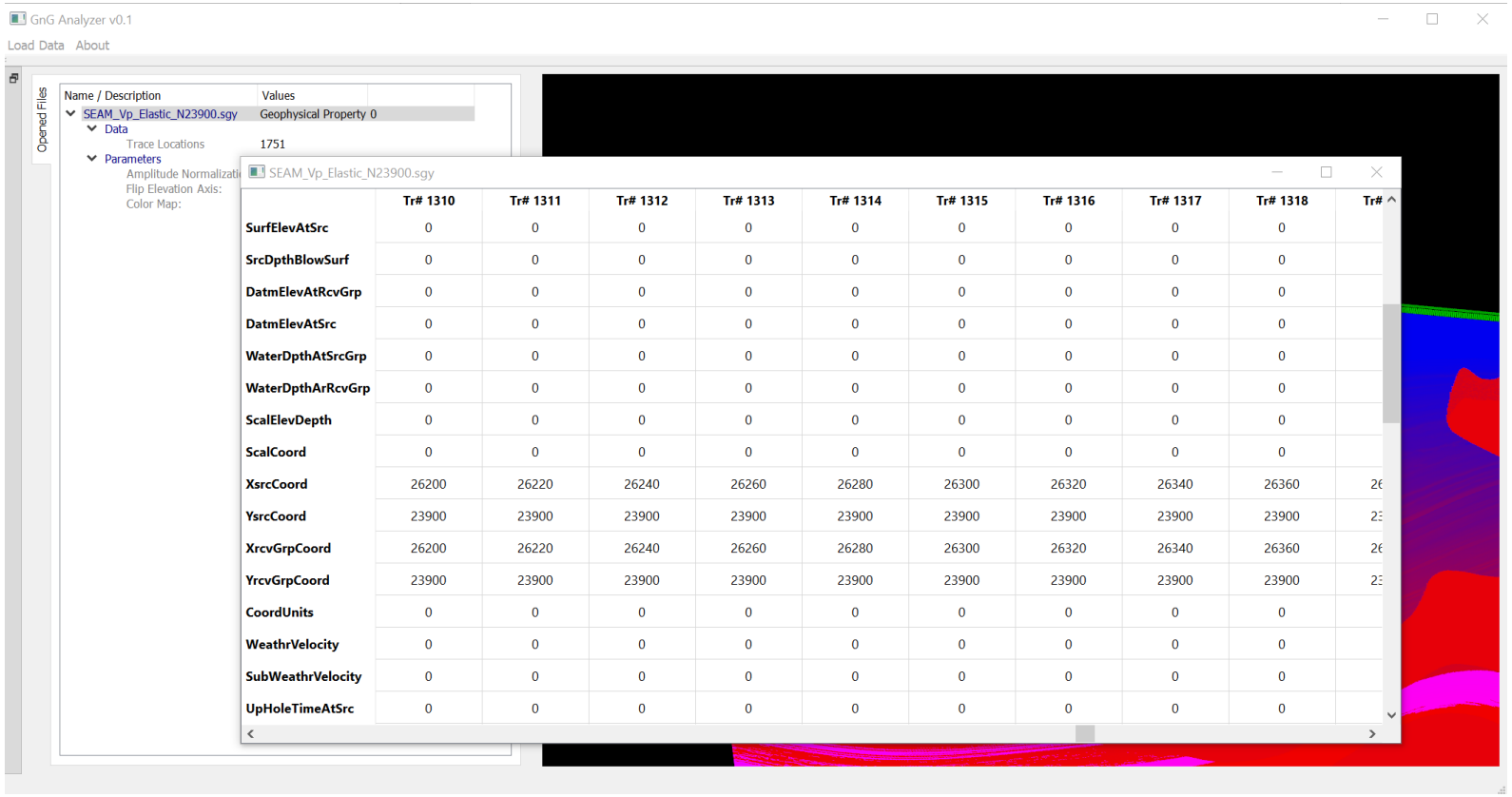
Viewing Model Properties in 3D Window

Two 2D slices displayed from a velocity model



Trace Header Table

Trace header values in a tabular form can be displayed by clicking the "Header Table" command in the context menu



	Tr# 1310	Tr# 1311	Tr# 1312	Tr# 1313	Tr# 1314	Tr# 1315	Tr# 1316	Tr# 1317	Tr# 1318	Tr#
SurfElevAtSrc	0	0	0	0	0	0	0	0	0	
SrcDpthBlowSurf	0	0	0	0	0	0	0	0	0	
DatmElevAtRcvGrp	0	0	0	0	0	0	0	0	0	
DatmElevAtSrc	0	0	0	0	0	0	0	0	0	
WaterDpthAtSrcGrp	0	0	0	0	0	0	0	0	0	
WaterDpthArRcvGrp	0	0	0	0	0	0	0	0	0	
ScalElevDepth	0	0	0	0	0	0	0	0	0	
ScalCoord	0	0	0	0	0	0	0	0	0	
XsrcCoord	26200	26220	26240	26260	26280	26300	26320	26340	26360	26
YsrcCoord	23900	23900	23900	23900	23900	23900	23900	23900	23900	23
XrcvGrpCoord	26200	26220	26240	26260	26280	26300	26320	26340	26360	26
YrcvGrpCoord	23900	23900	23900	23900	23900	23900	23900	23900	23900	23
CoordUnits	0	0	0	0	0	0	0	0	0	
WeathrVelocity	0	0	0	0	0	0	0	0	0	
SubWeathrVelocity	0	0	0	0	0	0	0	0	0	
UpHoleTimeAtSrc	0	0	0	0	0	0	0	0	0	

Thanks