Kansas Earthquake 3D Plot Java Applet

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Introduction

This applet produces three plots, 2D (latitude vs. longitude), 3D (latitude, longitude and depth) and the Histogram of the three axes for earthquakes in Harper & Sumner Counties in Kansas. SWD (Salt Water Disposal) Wells that fall within the Harper & Sumner Counties that are drilled into the Arbuckle or have depths greater than 5500 feet were also included in the 2D & 3D plots. The Earthquake data is stored in the "gis_webinfo earthquakes" ORACLE Database Table on the Kansas Geological Server.

The plots displays the data collected from 17 July 2014 to present. The Applet accesses the earthquake data using an ORACLE PL/SQL Stored Procedure that will generate an Extensible Markup Language (XML) data stream, the applet will then parse the XML Stream for the earthquake data and plot automatically, the ORALCE PL/SQL Stored Procedure URL is, **http://chasm.kgs.ku.edu/ords/iqstrat.ks_earthquakes_pkg.getXML**.

To access the Kansas Earthquakes 3D Plot web site, go to the web address, **http://www.kgs.ku.edu/PRS/Ozark/Software/KS_Earthquake_3DPlot/index.html.** At the top of the web page there is a menu "Ma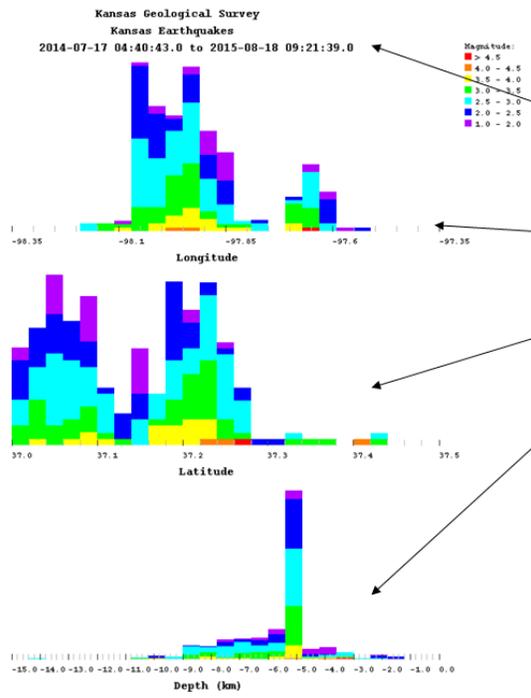in Page|Description|Applet|Help|Copyright & Disclaimer|". Select the "Applet" menu option a "Warning - Security" Dialog will appear *("Do you want to run this application?")*. The program has to be able to read and write to the user's PC and access the Kansas Geological Survey (KGS) Database and File Server, ORACLE requires this dialog. The program does not save your files to KGS, but allows you to access the KGS for well information. The program does not use Cookies or any hidden software. The blue shield on the warning dialog is a symbol that the Java web app is created by a trusted source, which is the University of Kansas. Select the "Run" Button, which will display the Seismic Image Icon Button in the "Enter" Panel illustrated below,
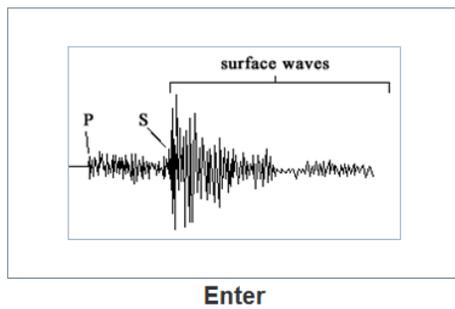
This program will automatically read the earthquake data & SWD (Salt Water Disposal) Wells from the Kansas Geological Survey (KGS) ORACLE Database and plot the data with a plot control dialog which will appear in the upper left hand corner of the screen.

Kansas Geological Survey
Kansas Earthquakes
2014-07-17 04:40:43.0 to 2015-08-18 09:21:39.0

The user can filter the earthquake data by start date and end date.

Kansas Earthquake 3D Plo...

File

1st Title:
Kansas Geological Survey

2nd Title:
Kansas Earthquakes

3rd Title:
2014-07-17 04:40:43.0 to 2016-01-31 13:27:19.0

X-Axis:
Longitude

Minimum:	Maximum:	Increment:
-98.35	-97.35	0.25

Y-Axis:
Latitude

Minimum:	Maximum:	Increment:
37.0	37.5	0.1

Z-Axis:
Depth (km)

Minimum:	Maximum:	Increment:
-15.0	0.0	1.0

Date & Time(24 Hour) Range
Start Date Time

YYYY	MM	DD	HH	mm	ss.S
2014	07	17	04	40	43.0

End Date Time

YYYY	MM	DD	HH	mm	ss.S
2016	01	31	13	27	19.0

Reset   Modify

Filter By Data Source:
○ All Data   ○ USGS   ○ CO2 Sensors

Filter Data By:
○ Magnitude   ○ Depth   ○ Date
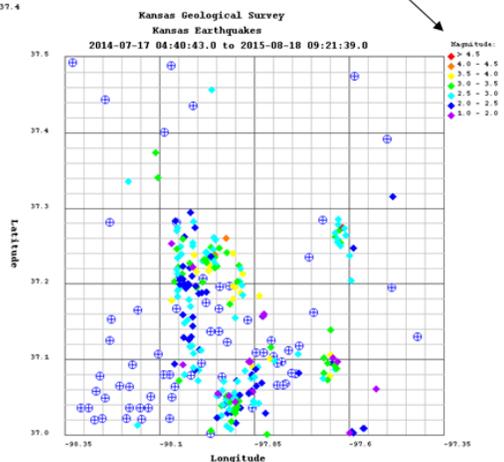
Toggle Wells:
○ On   ○ Off

Legends automatically generated from the data.
Filter Data By:
• Earthquake Magnitude
• Earthquake Depth (USGS)
• Earthquake Date (Year Month)

Well Symbols can be toggled on or off.

| Symbol	Description
⊕	SWD – Salt Water Disposal Well
❘	SWD Well Surface to TD
◆	Earthquake Data

**Create Portable Network Graphics (PNG) Image and a Portable Document Format (PDF)**

To save the image to your PC as a Portable Network Graphics (PNG) Image select the "File" Menu option and then click on the "Create PDF Document Plot" menu button. This will display the "Select a Different Directory Path" dialog.


The default directory path is the user's home directory, to change the directory path select the "Search" Button to display the Search Directory Path Frame.
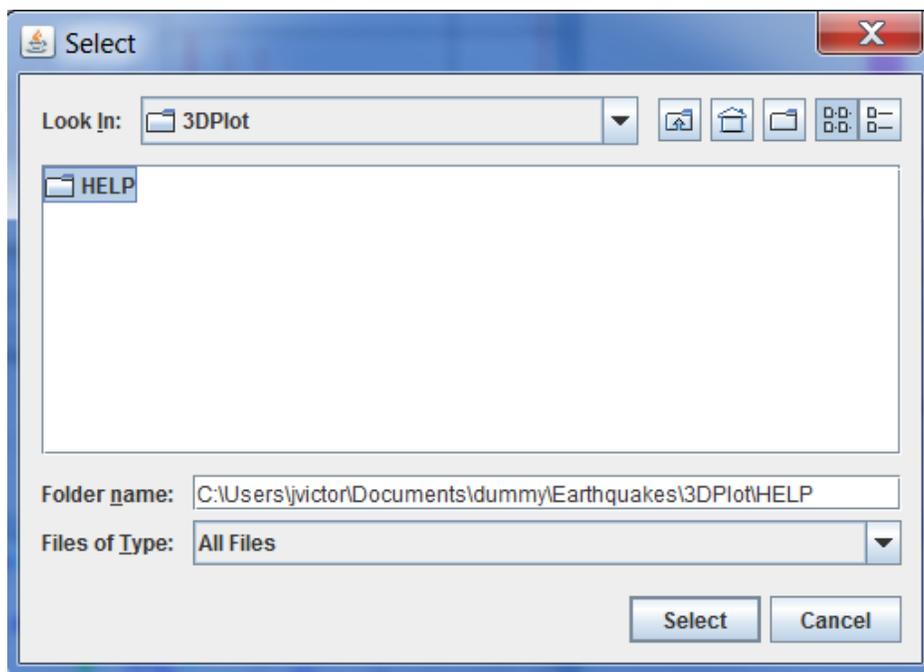
Search your PC directory path to the directory you wish to save the plots then click the "Select" Button to return to the "Select a Different Directory Path" Frame. The directory path will be transferred to the "Save File To" Text field. The default file name of the generated PNG – Portable Network Graphics image and the HTML file is KS_earthquakes, which the user can change to any name they wish.
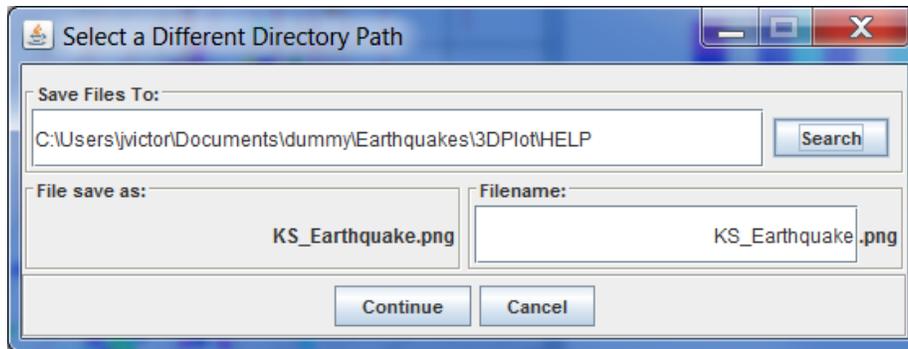
Select the "Continue" button to generate the report. The web app will automatically collect the data and generate the web page. The web page will automatically display the three plots.
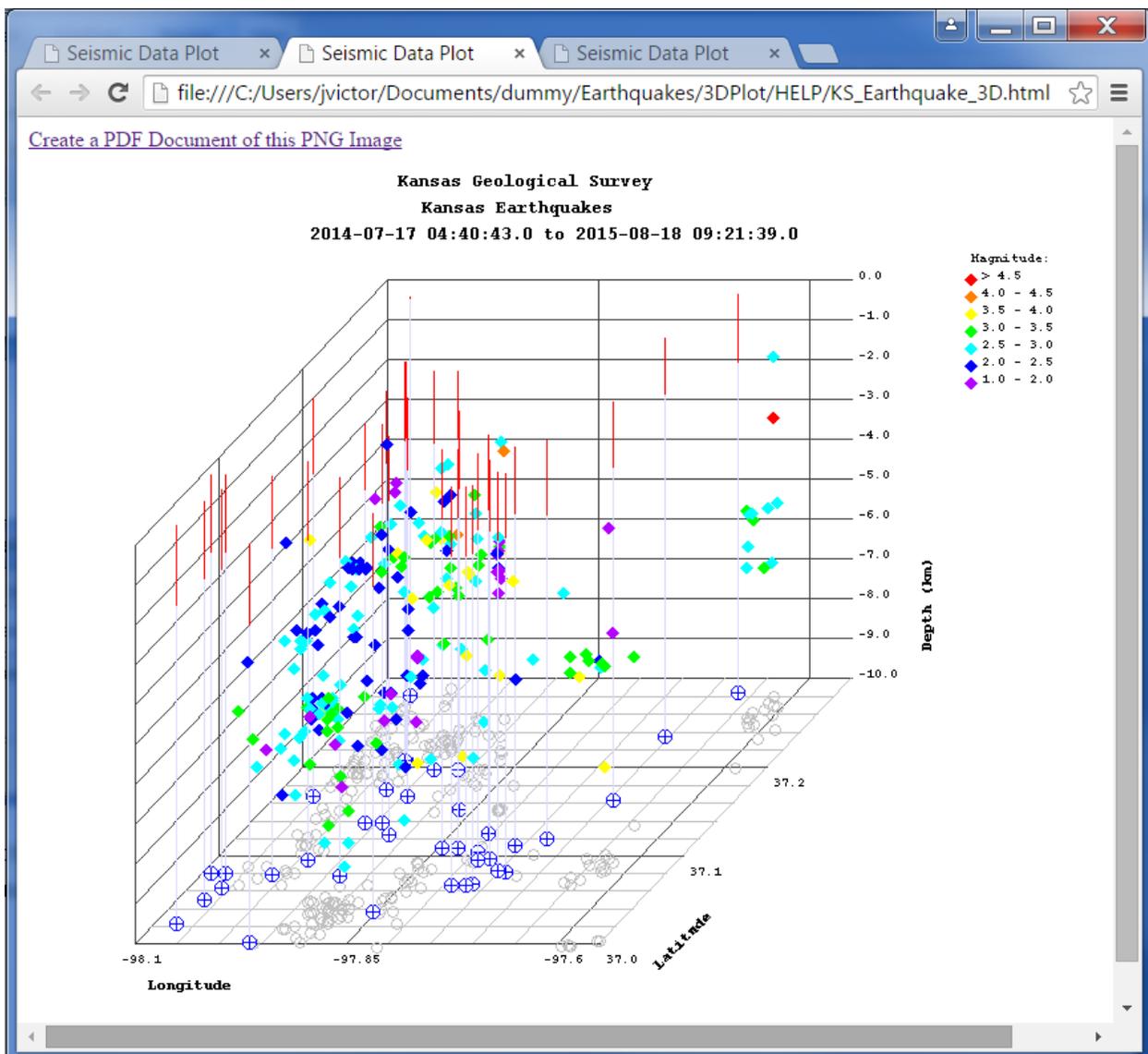
The KS_Earthquake is the base name of each plot; a "_2D" will be appended to the name for the 2D Plot, "_3D" for the 3D Plot, and "_HIST" for the Histogram Plot.

To create a Portable Network Document (PDF), click on the "Create a PDF Document of this PNG Image" Link. This will display the "Create PDF (Portable Document Format) from Image" Applet.
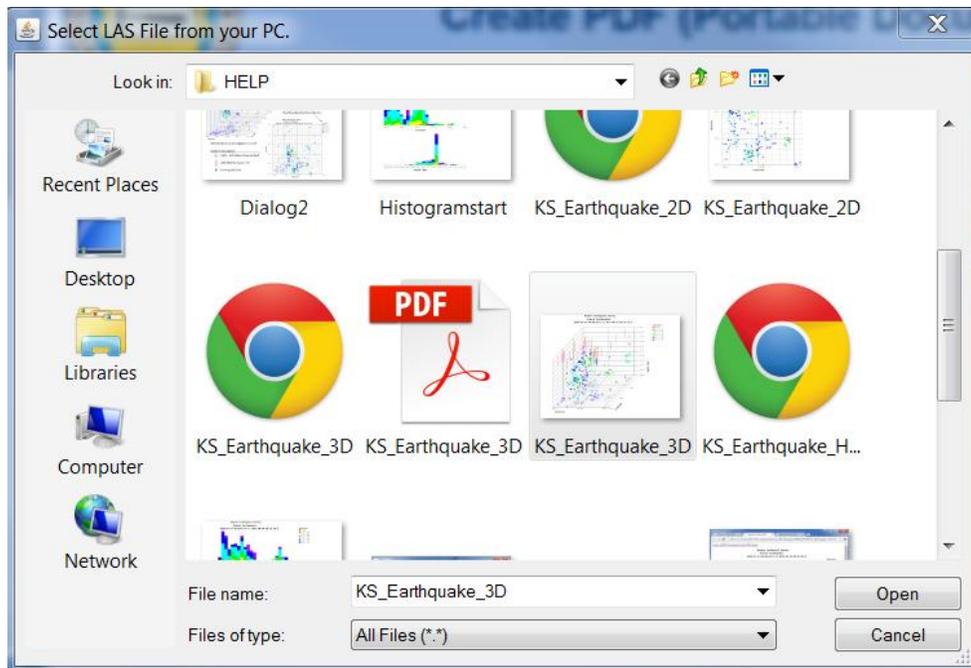

A dialog will display that will allow the user to select the PNG image just created and convert that PNG image into a PDF document.

Click on the "KS_earthquakes_3D.png" file to create a PDF document of that image. You can run the program again to convert the next image, etc.