

Permanently Instrumented Field Sites Database, UCSB

By [Jamison Steidl](#), [Robin Gee](#), [Hank Ratzesberger](#)

Tags

databases

Permanently Instrumented Field Sites

UC Santa Barbara

[View Database](#) (HTML) →



Search and Explore UCSB Field Sites Data in the Project Warehouse!

How can earthquake researchers find important answers from data in the Project Warehouse with just a few clicks? Let's see how by investigating the largest earthquake to hit Southern California in 18 years (El Mayor, magnitude 7.2).

Waveform data for this earthquake was captured by the University of California, Santa Barbara (UCSB) permanently instrumented geotechnical field sites, which include surface and borehole arrays of accelerometers and pore pressure transducers. UCSB has uploaded many hundreds of waveform data files to the Project Warehouse at NEEShub, along with station, channel and events metadata.

- How can we find the waveform data files for El Mayor?

We also want to investigate:

- Which UCSB stations recorded data for this earthquake?
- What are the instrument details (sensor depth, serial number, channel calibrations)?
- How can waveform data for this earthquake be downloaded, plotted, analyzed?

Permanently Instrumented Field Sites Database, UCSB

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Tags: [databases](#) [Permanently Instrumented Field Sites](#) [UC Santa Barbara](#)

Search, sort, plot and compare Field Sites waveform data stored in the Project Warehouse! Explore by Event, Station, Magnitude, Latitude, Longitude, Depth, Time and Azimuth. Click on the Waveform Data column for any Event and select one or more ... [See Related Content](#)

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Abstract

Search, Sort and Compare Field Sites Waveform Data Stored in the Project Warehouse!



The NEES@UCSB facility consists of permanently instrumented geotechnical test sites designed to improve our understanding of the effects of surface geology on strong ground motion.

To investigate these questions (and more!) go to

<http://nees.org/resources/1696>

Click on the View Database button.

NEEShub
George E. Brown, Jr. Network for Earthquake Engineering Simulation

About NEES Tools & Resources Learning & Outreach Project Warehouse Simulation Sites Collaborate Explore

You are here: Home UCSB Field Sites Waveform Data at the NEEShub UCSB Field Sites Waveform Data at the NEEShub

Filter Dialog Map UCSB Field Sites Waveform Data at the NEEShub Project Warehouse

Show 5 entries First Previous 1 2 3 4 5 Next Last Search:

Event ID	Station	Waveform Data	Channel Info	Magnitude	Latitude	Longitude	Depth (km)	Time	Azimuth	Distance (km)
30157759	GVDA	View Waveform Data	View Channel Info	7.2	32.2590	-115.2870	10	2010-04-04 22:40:42	140.103	203.434
30157759	WLA	View Waveform Data	View Channel Info	7.2	32.2590	-115.2870	10	2010-04-04 22:40:42	166.195	96.103
30557759	5210	View Waveform Data	View Channel Info	6.6	32.6910	-115.8900	6	2010-04-04 22:41:12	216.743	56.316
30557759	GVDA	View Waveform Data	View Channel Info	6.6	32.6910	-115.8900	6	2010-04-04 22:41:12	145.954	131.033
24597759	5210	View Waveform Data	View Channel Info	5.8	32.4640	-115.1890	6	2009-12-30 18:48:57	155.512	77.361

Event ID Station Waveform Data Channel Info Magnitude Latitude Longitude Depth (km) Time Azimuth Distance (km)

Show 5 entries Showing 1 to 5 of 408 entries First Previous 1 2 3 4 5 Next Last

The data view shows you all Project Warehouse ground motion events uploaded from the UCSB field sites, with information about magnitude, location, time and azimuth for every captured event ... along with drill down links to channel information and waveform data values.

You can find the largest magnitude earthquakes in *one click* by using the “sort arrow” at the top of the Magnitude column ...

Filter Dialog Map UCSB Field Sites Waveform Data at the NEEShub Project Warehouse

Show 10 entries First Previous 1 2 3 4 5 Next Last

Event ID	Station	Waveform Data	Channel Info	Magnitude	Latitude	Longitude	Depth (km)	Time
30157759	GVDA	View Waveform Data	View Channel Info	7.2	32.2590	-115.2870	10	2010-04-04 22:40:42
30157759	WLA	View Waveform Data	View Channel Info	7.2	32.2590	-115.2870	10	2010-04-04 22:40:42
30557759	5210	View Waveform Data	View Channel Info	6.6	32.6910	-115.8900	6	2010-04-04 22:41:12
30557759	GVDA	View Waveform Data	View Channel Info	6.6	32.6910	-115.8900	6	2010-04-04 22:41:12
24597759	5210	View Waveform Data	View Channel Info	5.8	32.4640	-115.1890	6	2009-12-30 18:48:57

... or you can use Filter Dialog and Event filtering to show only the events of magnitude >7

Filter Dialog Map UCSB Field Sites Waveform Data at the NEEShub Project Warehouse

Show 10 entries First Previous 1 2 3 4 5 Next Last

Event ID	Station	Waveform Data	Channel Info	Magnitude	Latitude	Longitude	Depth (km)	Time
10059745	GVDA	View Waveform Data	View Channel Info	5.4	33.4200	-116.4890	14	2010-07-07 23:53:33
10159042	5210	View Waveform Data	View Channel Info	5.4	33.4200	-116.4890	14	2010-07-07 23:53:33
10159042	GVDA	View Waveform Data	View Channel Info	5.4	33.4200	-116.4890	14	2010-07-07 23:53:33
10159042	WLA	View Waveform Data	View Channel Info	5.4	33.4200	-116.4890	14	2010-07-07 23:53:33
10160722	5210	View Waveform Data	View Channel Info	5.4	33.4200	-116.4890	14	2010-07-07 23:53:33
10160722	WLA	View Waveform Data	View Channel Info	5.4	33.4200	-116.4890	14	2010-07-07 23:53:33
10166242	5210	View Waveform Data	View Channel Info	5.4	33.4200	-116.4890	14	2010-07-07 23:53:33
10166242	GVDA	View Waveform Data	View Channel Info	5.4	33.4200	-116.4890	14	2010-07-07 23:53:33

UCSB Field Sites Waveform Data at the NEEShub Project Warehouse : Filters

Stations Events

Distance (km)

Magnitude

Time

[Column: Magnitude]

Enter a number to filter this column by.

Following filter options are also supported,
Range filtering - (e.g. 15.7 to 25)
Less than, greater than (e.g. <100), (e.g. >25)
Less than or equal, greater than or equal (e.g. <=12.5), (e.g. >=0.3)
Equal (e.g. ==2.55)

Filter Dialog Map UCSB Field Sites Waveform Data at the NEEShub Project Warehouse

Show 5 entries First Previous 1 Next Last

Event ID	Station	Waveform Data	Channel Info	Magnitude	Latitude	Longitude	Depth (km)
30157759	GVDA	View Waveform Data	View Channel Info	7.2	32.2590	-115.2870	10
30157759	WLA	View Waveform Data	View Channel Info	7.2	32.2590	-115.2870	10

Event ID Station Waveform Data Channel Info >7 Latitude Longitude Depth (km)

Show 5 entries Showing 1 to 2 of 2 entries (filtered from 408 total entries)

Note that two UCSB stations – GVDA and WLA – captured information about this event.

Click on the Event ID link for details about the event recorded at both stations:

Filter Dialog Map UCSB Field Sites Waveform Data at the NEEShub Project Warehouse

Show 5 entries

Event ID	Station	Waveform Data
30157759	GVDA	View Waveform Data
30157759	WLA	View Waveform Data

Event ID Station Waveform Data

Show 5 entries

Clear column filters Clear all filters

More Information

Event ID	30157759	30157759
Station	GVDA	WLA
Waveform Data	View Waveform Data	View Waveform Data
Channel Info	View Channel Info	View Channel Info
Magnitude	7.2	7.2
Latitude	32.2590	32.2590
Longitude	-115.2870	-115.2870
Depth (km)	10	10
Time	2010-04-04 22:40:42	2010-04-04 22:40:42
Azimuth	140.103	166.195
Distance (km)	203.434	96.103

Click on the Map button:

Filter Dialog Map UCSB Field Sites Waveform Data at the NEEShub Project Warehouse

Show 10 entries First Previous 1 Next Last Search:

Event ID	Station	Waveform Data	Channel Info	Magnitude	Latitude	Longitude	Depth (km)	Time	Azimuth	Distance (km)
30157759	GVDA	View Waveform Data	View Channel Info	7.2	32.2590	-115.2870	10	2010-04-04 22:40:42	140.103	203.434
30157759	WLA	View Waveform Data	View Channel Info	7.2	32.2590	-115.2870	10	2010-04-04 22:40:42	166.195	96.103

Event ID Station Waveform Data Channel Info >7 Latitude Longitude Depth (km) Time Azimuth Distance (km)

Show 10 entries Showing 1 to 2 of 2 entries (filtered from 408 total entries)

Map Satellite

Event ID 30157759

Note that geospatial data can be downloaded in KML, KMZ and SHP (ESRI compatible) formats.

To find out all available information about the stations, click on the station links:

GVDA:

The screenshot shows the NEEShub Project Warehouse interface. The main map displays a satellite view of the Garmer Valley Downhole Array (GVDA) location. Below the map is a table with columns: Event ID, Station, Waveform Data, Channel Info, Magnitude, and Latitude. Two entries are shown, both for station GVDA. The 'Station' column is highlighted with a red box. To the right, a 'More Information' pop-up window for GVDA is open, displaying details such as Station Name (Garmer Valley Downhole Array), Elevation (1.3 m), Latitude (33.4), Longitude (-11), Station Image, Description, Facility Website, Surface Layout, Downhole Array, Velocity Logs, and On Date (2003-11-15). A 'Full Text' pop-up window is also open, providing a detailed description of the GVDA facility.

WLA:

The screenshot shows the NEEShub Project Warehouse interface. The main map displays a satellite view of the Wildlife Liquefaction Array (WLA) location. Below the map is a table with columns: Event ID, Station, Waveform Data, Channel Info, Magnitude, and Latitude. Two entries are shown, both for station WLA. The 'Station' column is highlighted with a red box. To the right, a 'More Information' pop-up window for WLA is open, displaying details such as Station Name (Wildlife Liquefaction Array (WLA)), Elevation (-0.6 m), Latitude (33.4), Longitude (-11), Station Image, Description, Facility Website, Surface Layout, Downhole Array, Velocity Logs, and On Date (2004-09-24). A 'Full Text' pop-up window is also open, providing a detailed description of the WLA facility. Red arrows point from the 'Waveform Data' and 'Channel Info' links in the table to a red box labeled 'Drilldown links'.

All the links for each information category are “live” ... you can click to see the Facility Website and you can hover over the images to see the Station Image, the Surface Layout, the Downhole Array and the Velocity Logs. You can also use the Waveform and Channel Information links on the data view to drill down to the event data details.

To view the channel information for the GVDA station, click on View Channel Info. More than 12,000 channel metadata records are filtered for this earthquake event and the GVDA station, showing that 53 channels captured data. The database view displays every channel calibration constant and sensor serial number. Earthquake depth and units values are also shown.

UCSB Field Sites Events Channel Metadata									
Show 10 entries									
Id	Event Id	Station	Datalogger Id	Channel	Calibration Constant	Sensor Serial Number	Datalogger Serial Number	Depth (m)	Units
7	30157759	GVDA	GVA01	HNE_02	4671.2149	38283	519	15.0	nm/s/s
13	30157759	GVDA	GVA01	HNE_04	4651.5297	35627	519	50.0	nm/s/s
8	30157759	GVDA	GVA01	HNN_02	4659.3474	38283	519	15.0	nm/s/s
14	30157759	GVDA	GVA01	HNN_04	4653.3454	35627	519	50.0	nm/s/s
9	30157759	GVDA	GVA01	HNZ_02	4651.1692	38283	519	15.0	nm/s/s
15	30157759	GVDA	GVA01	HNZ_04	4698.7408	35627	519	50.0	nm/s/s
41	30157759	GVDA	GVA02	HDD_44	0.00032876737	709085	548	333.0	kPa
43	30157759	GVDA	GVA02	HDD_46	0.00032876737	709083	548	417.0	kPa
45	30157759	GVDA	GVA02	HDD_48	0.0016438142	700989	548	494.0	kPa
4	30157759	GVDA	GVA02	HNE_01	4656.6173	46529	548	6.0	nm/s/s
Id	30157759	GVDA	Datalogger Id	Channel	Calibration Constant	Sensor Serial Number	Datalogger Serial Number	Depth (m)	Units
Show 10 entries									
Showing 1 to 10 of 53 entries									
Clear column filters Clear all filters									

Calibration information for the WLA station:

UCSB Field Sites Events Channel Metadata									
Show 10 entries									
Id	Event Id	Station	Datalogger Id	Channel	Calibration Constant	Sensor Serial Number	Datalogger Serial Number	Depth (m)	Units
4486	30157759	WLA	WLA	HDD_60	7.3971892e-05	89184	518	2.6	kPa
4487	30157759	WLA	WLA	HDD_61	7.3971892e-05	89186	509	2.9	kPa
4488	30157759	WLA	WLA	HDD_62	7.3971892e-05	93641	482	3.3	kPa
4489	30157759	WLA	WLA	HDD_63	7.3971892e-05	89187	518	3.5	kPa
4490	30157759	WLA	WLA	HDD_64	7.3971892e-05	93459	509	4.4	kPa
4491	30157759	WLA	WLA	HDD_65	7.3971892e-05	89182	482	4.7	kPa
4492	30157759	WLA	WLA	HDD_66	7.3971892e-05	93447	509	6.2	kPa
4493	30157759	WLA	WLA	HDD_67	7.3971892e-05	85854	518	6.2	kPa
4495	30157759	WLA	WLA	HDD_70	0.00014794838	307157	527	4.3	kPa
4494	30157759	WLA	WLA	HDD_69	6.575438e-05	307156	482	0	kPa
Id	30157759	WLA	Datalogger Id	Channel	Calibration Constant	Sensor Serial Number	Datalogger Serial Number	Depth (m)	Units
Show 10 entries									
Showing 1 to 10 of 37 entries									
Clear column filters Clear all filters									

Use “Show All” to see information for all 37 channels for station WLA for this event.

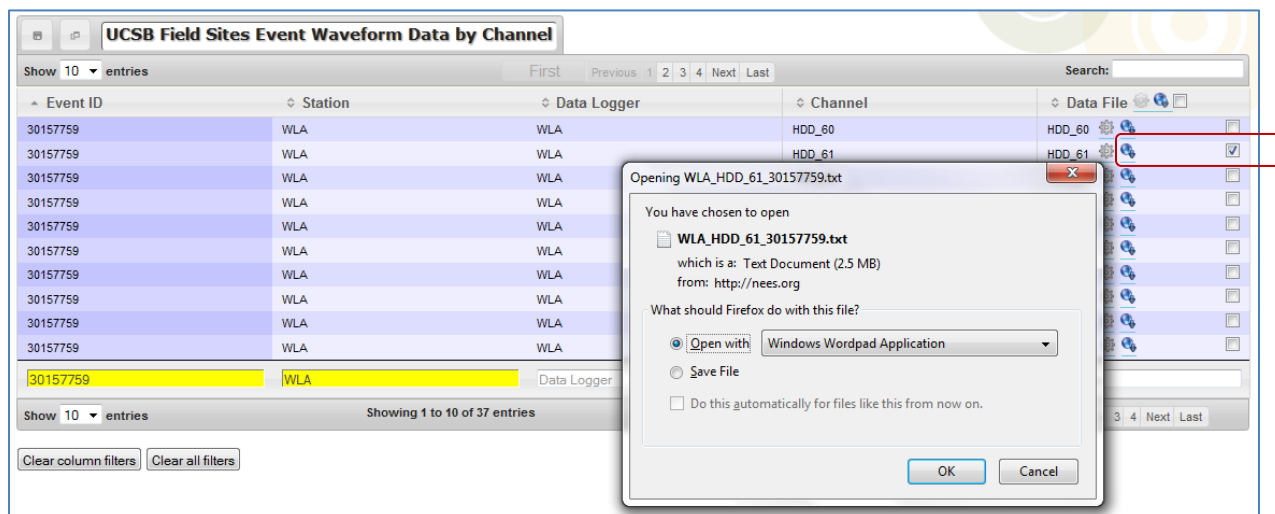
UCSB Field Sites Events Channel Metadata									
Show All entries									
Id	Event Id	Station	Datalogger Id	Channel	Calibration Constant	Sensor Serial Number	Datalogger Serial Number	Depth (m)	Units
4486	30157759	WLA	WLA	HDD_60	7.3971892e-05	89184	518	2.6	kPa
4487	30157759	WLA	WLA	HDD_61	7.3971892e-05	89186	509	2.9	kPa
4488	30157759	WLA	WLA	HDD_62	7.3971892e-05	93641	482	3.3	kPa
4489	30157759	WLA	WLA	HDD_63	7.3971892e-05	89187	518	3.5	kPa
4490	30157759	WLA	WLA	HDD_64	7.3971892e-05	93459	509	4.4	kPa
4491	30157759	WLA	WLA	HDD_65	7.3971892e-05	89182	482	4.7	kPa
4492	30157759	WLA	WLA	HDD_66	7.3971892e-05	93447	509	6.2	kPa
4493	30157759	WLA	WLA	HDD_67	7.3971892e-05	85854	518	6.2	kPa
4495	30157759	WLA	WLA	HDD_70	0.00014794838	307157	527	4.3	kPa
4494	30157759	WLA	WLA	HDD_69	6.575438e-05	307156	482	0	kPa
4499	30157759	WLA	WLA	HNE_00	2338.0811	1457	501	0	cm/s/s
4462	30157759	WLA	WLA	HNE_01	2362.1982	185	482	2.5	cm/s/s
4465	30157759	WLA	WLA	HNE_02	2348.1903	240	508	5.5	cm/s/s
4468	30157759	WLA	WLA	HNE_03	2349.8335	241	508	5.5	cm/s/s
4471	30157759	WLA	WLA	HNE_04	2343.7122	184	536	7.7	cm/s/s
4474	30157759	WLA	WLA	HNE_05	2339.251	186	536	30.0	cm/s/s
4477	30157759	WLA	WLA	HNE_06	2344.1961	182	501	100.0	cm/s/s
4480	30157759	WLA	WLA	HNE_10	2338.0811	1456	509	0	cm/s/s
4483	30157759	WLA	WLA	HNE_11	2338.0811	1458	518	0	cm/s/s
4460	30157759	WLA	WLA	HNN_00	2338.0811	1457	501	0	cm/s/s
4463	30157759	WLA	WLA	HNN_01	2347.4736	185	482	2.5	cm/s/s
4466	30157759	WLA	WLA	HNN_02	2348.4216	240	508	5.5	cm/s/s
4469	30157759	WLA	WLA	HNN_03	2349.3704	241	508	5.5	cm/s/s
4472	30157759	WLA	WLA	HNN_04	2340.1825	184	536	7.7	cm/s/s
4475	30157759	WLA	WLA	HNN_05	2344.8877	186	536	30.0	cm/s/s
4478	30157759	WLA	WLA	HNN_06	2349.6019	182	501	100.0	cm/s/s
4481	30157759	WLA	WLA	HNN_10	2338.0811	1456	509	0	cm/s/s

Click on “View Waveform Data” for access to the waveform data files for download, plotting and analysis. This data view is filtered on this earthquake for the WLA station, and shows the 37 waveform data files are available for plotting and download.

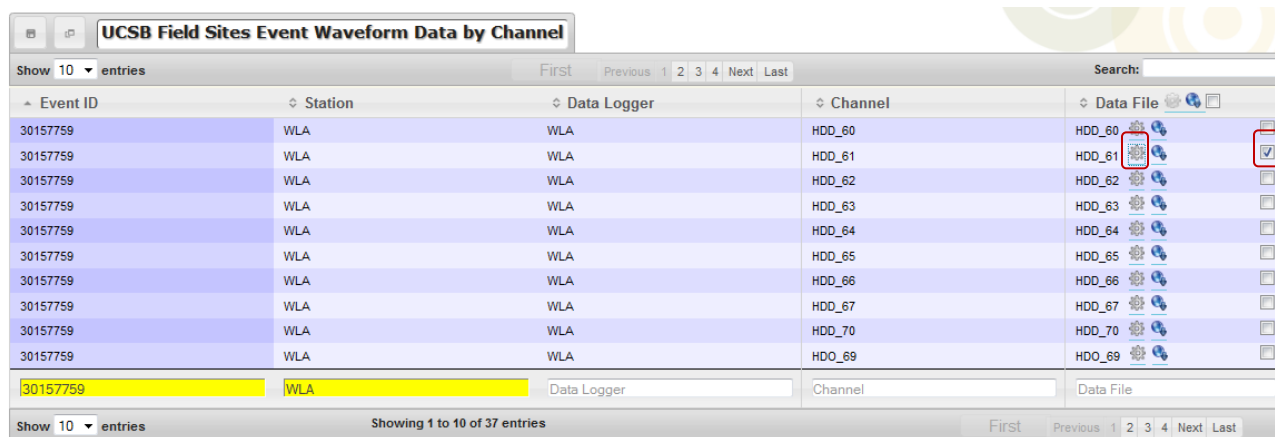
The screenshot shows the 'UCSB Field Sites Event Waveform Data by Channel' interface. It displays a table with 5 columns: Event ID, Station, Data Logger, Channel, and Data File. The table is filtered to show 37 entries for the WLA station. The first 10 entries are visible, showing Event ID 30157759 for channels HDD_60 through HDD_69. Each row has a download icon (a blue circle with a white 'd') and a checkbox in the Data File column. The interface includes pagination controls (First, Previous, 1, 2, 3, 4, Next, Last) and a search bar.

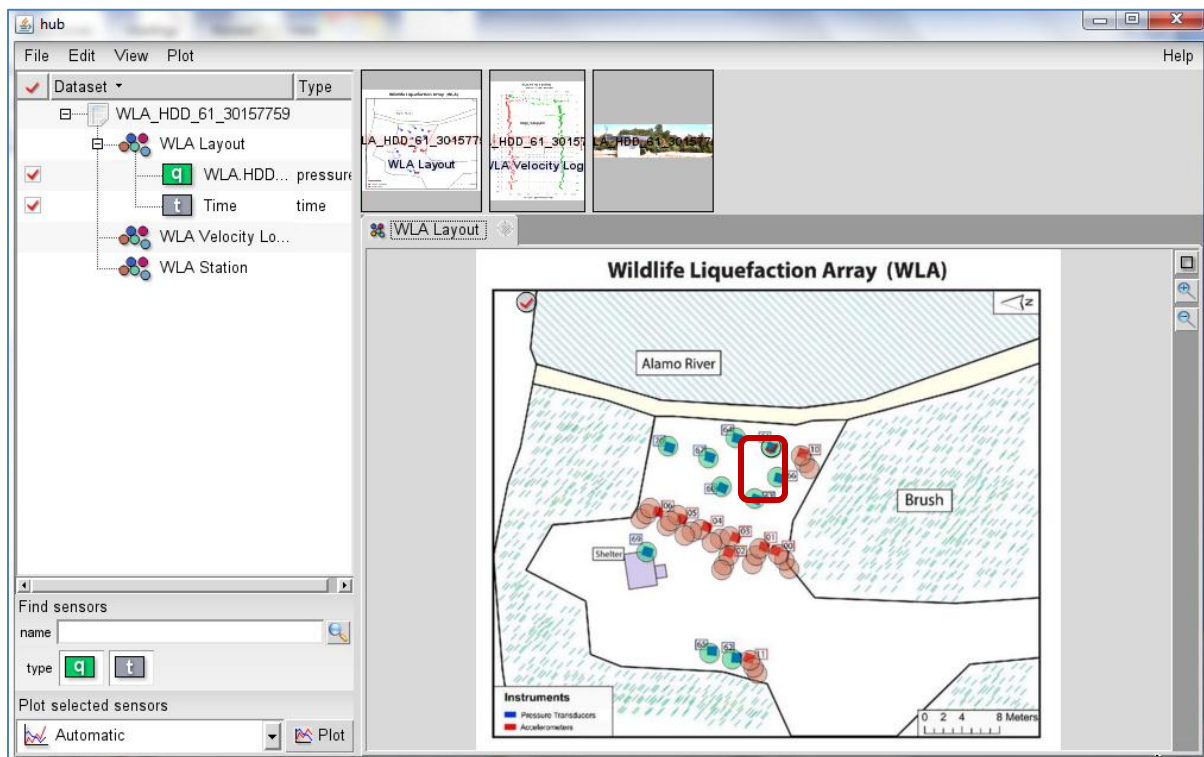
Event ID	Station	Data Logger	Channel	Data File
30157759	WLA	WLA	HDD_60	HDD_60 [download icon] [checkbox]
30157759	WLA	WLA	HDD_61	HDD_61 [download icon] [checkbox]
30157759	WLA	WLA	HDD_62	HDD_62 [download icon] [checkbox]
30157759	WLA	WLA	HDD_63	HDD_63 [download icon] [checkbox]
30157759	WLA	WLA	HDD_64	HDD_64 [download icon] [checkbox]
30157759	WLA	WLA	HDD_65	HDD_65 [download icon] [checkbox]
30157759	WLA	WLA	HDD_66	HDD_66 [download icon] [checkbox]
30157759	WLA	WLA	HDD_67	HDD_67 [download icon] [checkbox]
30157759	WLA	WLA	HDD_70	HDD_70 [download icon] [checkbox]
30157759	WLA	WLA	HDD_69	HDD_69 [download icon] [checkbox]

Download one or more waveform files by selecting one or more files to download and clicking on the download icon:

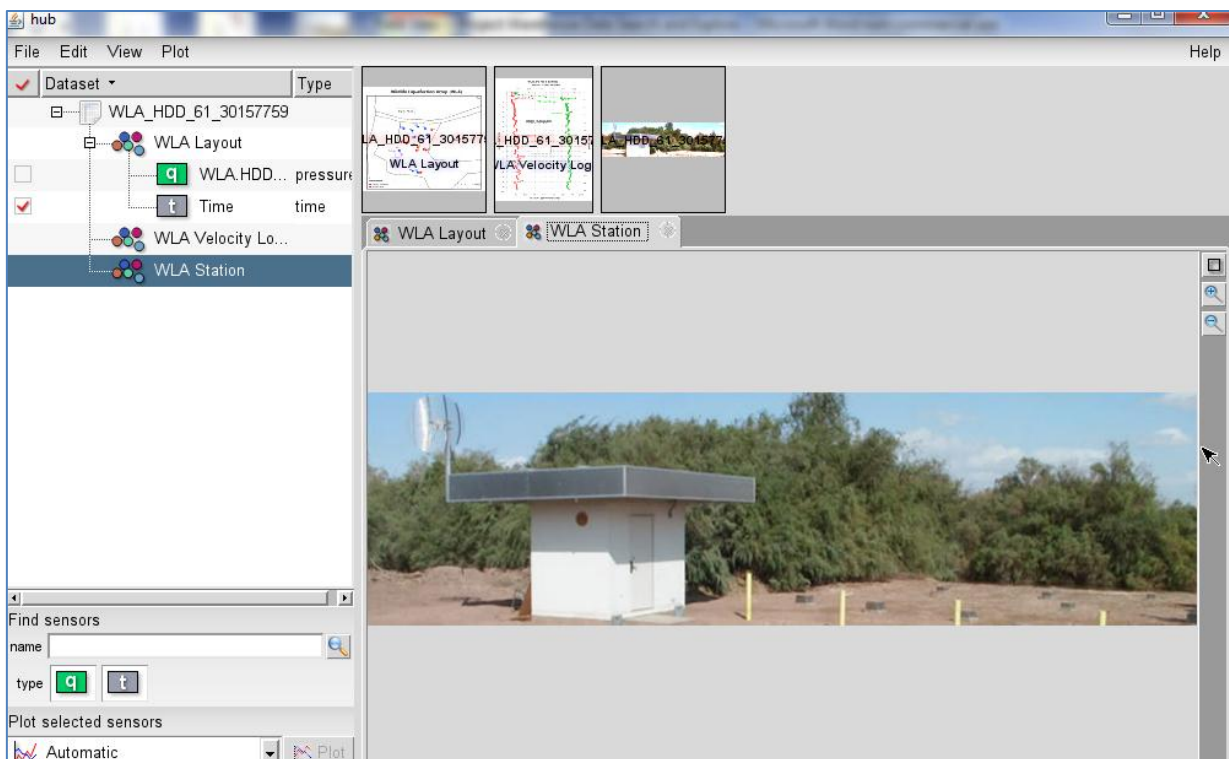


Launch inDEED to plot the waveform data by selecting one or more files to plot and clicking on the plot icon:

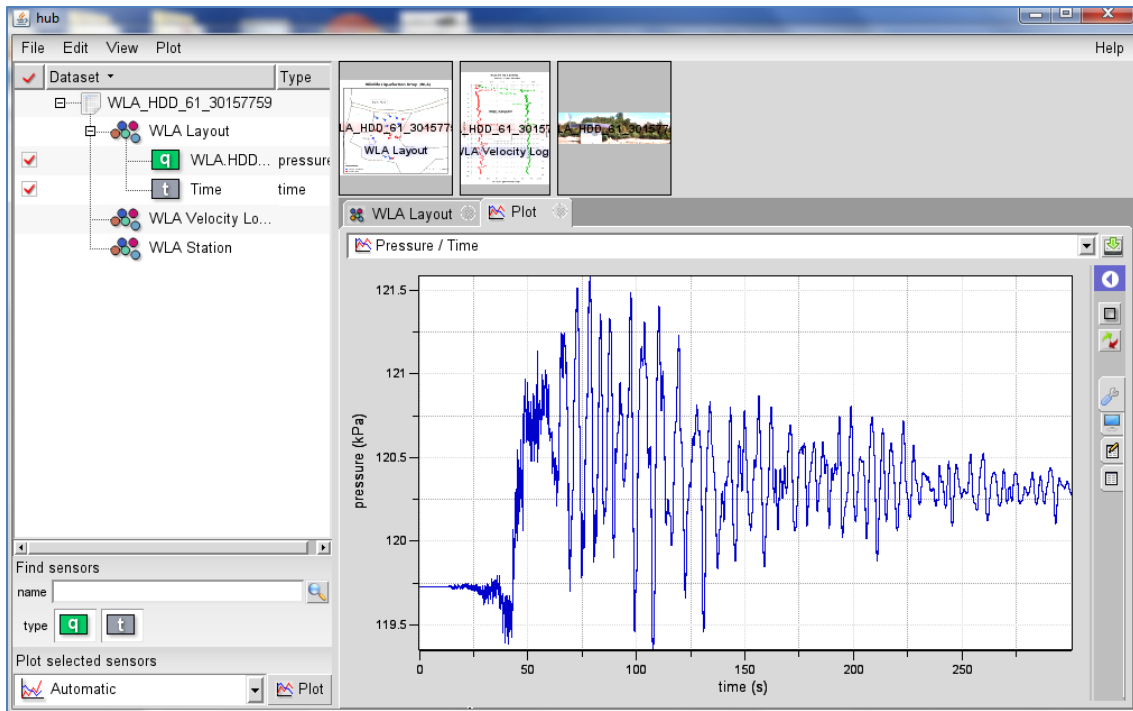




The sensor layout for all stations is available to inDEED for selection of sensors. Only the sensors selected in the data view are available for plotting – in this case, HDD_61 at WLA. You can also view the station image and velocity logs from inDEED.



You can select the sensor from the diagram or from the legend – then plot.



You can select any number of sensors for launching inDEED (including select all), and all the visualization and analysis features of inDEED are available for the selected sensors.

You are here: Home > UCSB Field Sites Event Waveform Data by Channel > UCSB Field Sites Event Waveform Data by Channel

UCSB Field Sites Event Waveform Data by Channel

Show 10 entries

Event ID	Station	Channel	Data File
30157759	WLA	HNE_00	<input checked="" type="checkbox"/> HNE_00
30157759	WLA	HNE_00	<input checked="" type="checkbox"/> HNE_00
30157759	WLA	HNN_00	<input checked="" type="checkbox"/> HNN_00
30157759	WLA	HNN_00	<input checked="" type="checkbox"/> HNN_00
30157759	WLA	HNZ_00	<input checked="" type="checkbox"/> HNZ_00
30157759	WLA	HNZ_00	<input checked="" type="checkbox"/> HNZ_00

Showing 1 to 6 of 6 entries

Clear column filters Clear all filters

You are here: Home > UCSB Field Sites Event Waveform Data by Channel > UCSB Field Sites Event Waveform Data by Channel

UCSB Field Sites Event Waveform Data by Channel

Show 10 entries

Event ID	Station	Channel	Data File
30157759	WLA	HNE_00	<input checked="" type="checkbox"/> HNE_00
30157759	WLA	HNE_00	<input checked="" type="checkbox"/> HNE_00
30157759	WLA	HNN_00	<input checked="" type="checkbox"/> HNN_00
30157759	WLA	HNN_00	<input checked="" type="checkbox"/> HNN_00
30157759	WLA	HNZ_00	<input checked="" type="checkbox"/> HNZ_00
30157759	WLA	HNZ_00	<input checked="" type="checkbox"/> HNZ_00

Showing 1 to 6 of 6 entries

Clear column filters Clear all filters

Launch inDEED with selected files

