



## Remote Automated Vibration Monitoring

**Abe Construction Services, Inc. (ACS) is a deep foundation testing, monitoring, and consultation firm with over twenty years of experience, based in northern California, that services clients throughout the world.**

### Vibration Monitoring

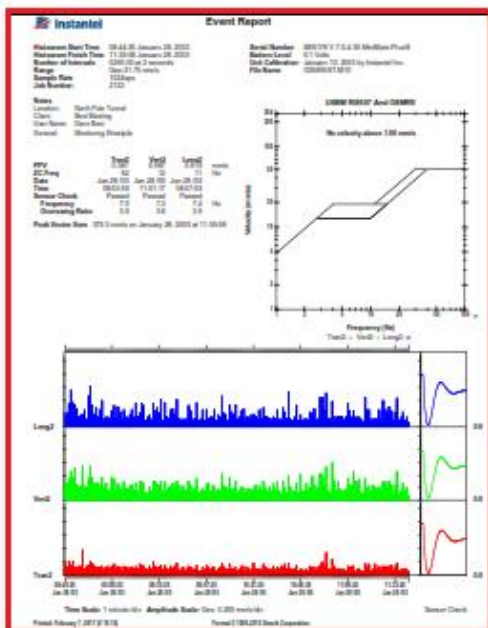
Vibration monitoring is required for many projects as a method of risk management, compliance, and legal defense. It can be used for a number of different scenarios including monitoring of underground utilities and at-risk structures during a range of activities including demolition, construction, pile driving and more. Monitoring can be used to establish background and average vibrations as well as to record and report exceedance of a specific vibration level.

### Equipment

ACS, Inc. uses InstanTel Micromate and Minimate Plus monitors with triaxial geophones. Each monitor can be set to record the largest vibration level during repeating intervals which can range from 2 seconds to 15 minutes and can be programmed to report when vibrations exceed a certain level in any of its three channels. Monitors can also be equipped with strobe lights and horns to provide an alert whenever an exceedance level is triggered.



InstanTel Minimate Plus Monitor with Geophone and Microphone



Sample Histogram Plot

### Reports

Reports generated for vibration monitoring include histogram plots to display levels recorded during the intervals as well as waveform plots for exceedance level events.

# Remote Automated Vibration Monitoring

**ACS, Inc, offers several options for vibration monitoring including:**

- On-Site Active Monitoring
- Remote Automated Monitoring

## On-Site Active Monitoring

On-Site Monitoring entails having an ACS employee on-site to set-up, move, and activate vibration monitors as needed, typically during activities such as pile driving. Monitors can be used in this way to help protect sensitive structures or utilities, or to provide attenuation studies to monitor and analyze vibrations at different distances from the point of activity.

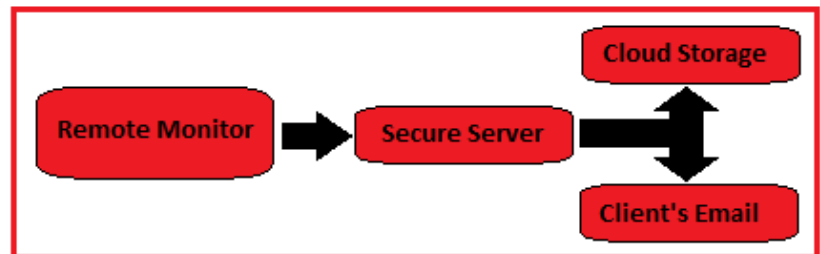
## Remote Automated Monitoring

Remote Automated Monitoring is the preferred method of vibration monitoring for long term projects. Monitors are set up to automatically call in using a cellular modem to a dedicated server, at both scheduled times or when the monitor is triggered by an exceedance level. Authorized clients automatically receive a report emailed to them each time a monitor calls in and they can log in to a secure online drive which automatically collects and stores the information. Each report includes a summary of the logging period as well as detailed graphs of the time intervals. Each remote automated monitor comes equipped with a cellular modem, antenna, batteries, and can be charged with either solar panels or an AC power supply.

## Rental

Monitors are rented for a flat monthly rate and clients can choose either to have the monitor and equipment shipped to be set up themselves, or have a trained ACS employee do it for a small installation fee. Remote monitors come in two different cases, a smaller more portable waterproof case and heavy duty steel cases.

The smaller cases are ideal in projects where the monitor is inside a building or must be moved often and the large cases are used usually in instances where the monitor will be placed outside for a long period of time. All monitors can be fitted with alarm strobe lights and horns to provide instant alerts of exceedance levels.



Events and records are automatically sent to a client's email and stored permanently for access anywhere in the world



Small portable waterproof case for use in areas with limited space



Secure Heavy duty case suitable for long term projects in any weather



Each monitor comes equipped with everything needed to function remotely indefinitely

Please don't hesitate to contact us with any questions or comments.