

#### CONTACT INFORMATION

General Information & Project Schedule:

(562) 326-5186

24 Hour Emergency Contact:

Signal Hill Petroleum, Inc.

(562) 595-6440

Website:

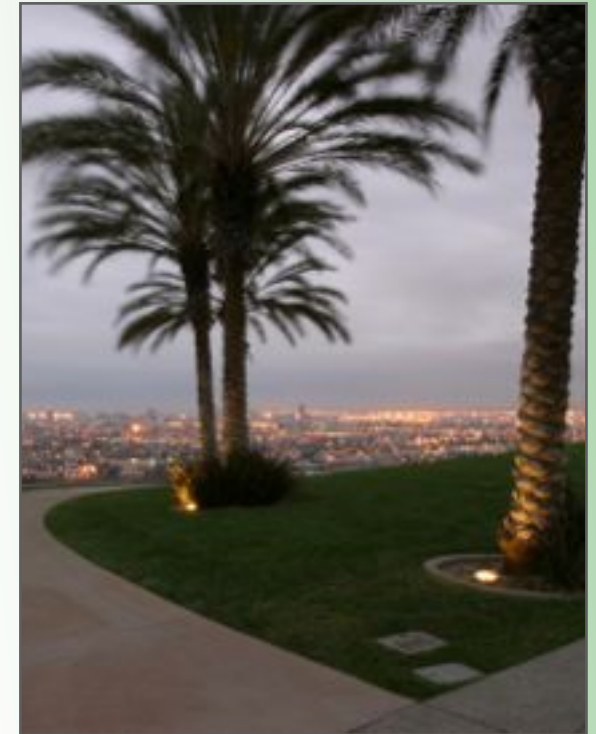
[www.lbgeophysical.com](http://www.lbgeophysical.com)

LONG BEACH GEOPHYSICAL SURVEY  
2201 E. WILLOW STREET, SUITE D#183  
SIGNAL HILL, CA 90755

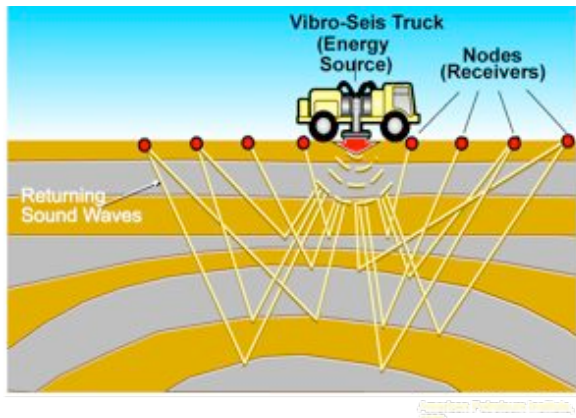
LONG BEACH

Geophysical Survey

## PROJECT INFORMATION



# Long Beach Geophysical Survey



## WHAT A GEOPHYSICAL SURVEY LOOKS LIKE

*Vibro-Seis trucks perform an acoustic test to create maps of the underground. A line of nodes records the acoustic test.*

## “NODE” RECORDING DEVICES



approximately 7 “



approximately 6 “

*Node being placed in hole. Grass plug will be replaced once node is secure.*



## VIBRO-SEIS TRUCK



## WHAT IS THE LONG BEACH GEOPHYSICAL SURVEY?

The Survey will use state of the art technology to image and map the geological strata and potential faults of the Long Beach area.

## HOW DOES IT WORK?

The technology used to image the subsurface geological strata uses specialized trucks to input acoustical energy into the ground. The acoustic waves generated are very subtle, but can penetrate deep into the earth. The different geological strata generate reflections as the acoustic wave passes by. These acoustic reflections can be detected by very sensitive and specialized recording devices called “Nodes” that are placed in the ground. The recorded data is downloaded and processed by highly sophisticated computer programs that generate a three dimensional image of the earth’s crust.

## HAS THIS TYPE OF SURVEY BEEN DONE IN LONG BEACH BEFORE?

Yes. Multiple geophysical surveys have been conducted in the Long Beach area. Most recently, survey work was done throughout the area during the Summer of 2011, including the Cal State Long Beach campus. More information is available on the project website.

## WHAT IMPACT WILL THE SURVEY EQUIPMENT HAVE?

The Node recording devices are typically placed in landscape areas along streets. Where Nodes are placed within a public right of way, a Public Works Permit is obtained. Some Nodes may be placed on private property with the owner’s permission. To place the Nodes, 6 inch diameter holes are drilled approximately 8 inches deep. The Nodes are then placed in the holes and covered with soil and/or grass(see pictures). When the Nodes are removed, landscape and/or grass will be restored. The Nodes are removed to charge their batteries about every two weeks and will remain in place for approximately 2 months.

The survey trucks will operate mostly on public streets. The trucks may operate off street on commercial sites and vacant land with permission of the owners. The trucks create a momentary minor surface vibration when they input acoustic energy into the ground. The trucks will operate at any one location for 15 minutes or less. Technicians monitor surface ground vibration with digital recording meters whenever the trucks are operating.

## WHO IS PERFORMING THE STUDY?

The study will be done by NodalSeismic, LLC who owns and operates the specialized equipment required to obtain the survey data. The survey is sponsored by Signal Hill Petroleum, Inc.

## WHY IS THE STUDY BEING PERFORMED?

The information obtained will provide an unprecedented understanding of the deeper geology and potential faulting in the area of the survey. The Survey team is working with several universities and government agencies and will share the survey data for academic and scientific research of potential faults. This information will also give a better understanding of additional oil resource potential of the Long Beach area.

## WHAT IS THE PROJECT SCHEDULE?

Project work with survey trucks is scheduled at various locations during the first half of 2012. The project schedule will be updated approximately 2 weeks in advance and will be available on the project website. The survey trucks will work on public streets typically Monday through Friday during normal business hours.

## HOW WILL I BE NOTIFIED IF PROJECT WORK WILL BE IN MY AREA?

Approximately one week prior to survey trucks arrival in your area, project brochures will be mailed. A door to door notification will also be made approximately one hour in advance of work at any location.

The project website ([www.lbgeophysical.com](http://www.lbgeophysical.com)) will provide real-time information including the survey truck work schedule and locations.

## WHO DO I CONTACT FOR MORE INFORMATION?

NodalSeismic, LLC will be managing the project. The project manager can be contacted during normal business hours at 562-326-5186. Additional information, including schedule updates are also available on the project website [www.lbgeophysical.com](http://www.lbgeophysical.com). E-mail contact with the project manager can be made through the website too. Emergencies can also be reported at any time to Signal Hill Petroleum at 562-595-6440.