

# Seismic Testing

## Introduction

Beginning December 1, 2017 and going forward for the next six months, Cougar Land Services will be conducting seismic surveying throughout the Municipality. If you have questions or concerns please call 1-800-481-5736 or visit [www.murrysville.com](http://www.murrysville.com).

## Murrysville Seismic Operations Overview

**The following is a synopsis of the seismic project scheduled to be conducted in the Municipality of Murrysville.**

Geokinetics Inc. will be conducting field operations for Huntley & Huntley Energy Exploration's seismic project in Murrysville, PA. The seismic project is broken into three phases: Permitting (Phase 1), Front End (Phase 2), and Recording (Phase 3). Permitting has been ongoing since June and will continue until the completion of the project. Front End operations consist of conducting field surveys along Municipal and State roads and on private properties where surface access has been granted. A survey marks the location of receivers (Geophone Receiver, picture below) and energy sources ( Vibroseis Vehicle & Track Drill, see pictures below) with either flagging or survey paint. Once the survey is complete, track drills will identify and drill shot-hole locations which consist of 30 ft. holes. This process has been ongoing in surrounding municipalities including Penn, Plum, Penn Hills, Washington and Upper Burrell. In order to complete Phase 2, we plan on drilling 877 points within Murrysville. Based on current manpower, we could complete drill operations in Murrysville in eight days, weather dependent. Since we cannot drill until we have been granted a seismic permit from the Municipality of Murrysville (issued December 5, 2017) our plan would be to finish drilling eight days after receipt of said permit. The third and final phase of the project is the recording phase which consists of crews conducting the physical seismic survey. This will consist of the placement of geophones which are temporarily buried approximately one (1) foot under the surface of the ground and the utilization of energy sources, being either Vibroseis Vehicles or Shot-Holes. All operations will adhere to the setbacks and directives given in Murrysville Code §161: Article I Geophysical/Seismic Testing.

## What is Seismic Testing

**Seismic testing is a process whereby an image of the subsurface is created. The data obtained is then used by the oil and gas company to locate the most optimum place to drill for gas.**

Seismic testing is usually generally conducted in one of two main ways. In one process, in large open fields, shot holes are drilled twenty or thirty feet below the surface. Small dynamite charges are placed into the holes and covered over. With the charge from the dynamite, sound waves are

sent into the earth and the data generated by the sound waves, being reflected off of the rock formations, is then captured by geophones on the surface and sent to a central location where the data is reviewed. Another method uses thumper trucks. This process occurs on roadways. These trucks contain a large plate in the center of the truck which is lowered to the ground. The weight of the truck is placed on the plate. Shock waves are then sent through the ground in order to collect data about the subsurface.

Cougar Land Services will be conducting this work in Murrysville. This company has been hired by Huntley and Huntley, a Monroeville oil and gas company who has leased gas rights from private land owners in Murrysville.

**What does Seismic Testing Equipment look like?**

**Geophone receiver**



**Thumper Truck**



**Track Driller**



**Roads and Municipal Parks where testing will take place:**

**Roads**

|                 |                      |                            |
|-----------------|----------------------|----------------------------|
| Ashbaugh Rd     | Italy Rd             | Sinan Dr                   |
| Beighley Rd     | Kemerer Hollow Rd    | Sinan Farm Dr              |
| Bollinger Rd    | Kemerer Rd           | Steele Rd                  |
| Borland Farm Rd | Kennedy Ave          | Summit Ct                  |
| Boxcar Rd       | Lake Ridge Dr        | Tarr Hollow Rd             |
| Boxcartown Rd   | Lakevue Ln           | Trafford Rd                |
| Boyd Rd         | Logan Ferry Rd       | Wiestertown Rd             |
| Bulltown Rd     | Ludwig Rd            | Windover Rd                |
| Burt Rd         | Lyons Run Rd         |                            |
| Cherry Dr       | Mamont Rd            | <b>Parks</b>               |
| Christy Rd      | Manor Rd             | Duff Park                  |
| Cline Hollow Rd | Murry Ridge Dr       | Pleasant Valley Park       |
| Cole Rd         | N Hills Rd           | Murrysville Community Park |
| Crowfoot Rd     | Old William Penn Hwy |                            |
| Drennen Rd      | Plan Ct              |                            |
| Edwards Rd      | Pleasant Valley Rd   |                            |
| Evans Rd        | Puckety Dr           |                            |
| Farm Rd         | Raccoon Ct           |                            |
| Greenhead Ct    | Remaley Rd           |                            |
| Hankey Church R | Round Top Rd         |                            |
| Haymaker Farm F | Saddle Pack Trl      |                            |
| Hills Church Rd | Sardis Rd            |                            |
| Hilty Rd        | School Rd S          |                            |
| Hoy Farm Ct     | Silvis Hollow Rd     |                            |

**Do landowners have to allow seismic testing on their property?**

If you own the oil and gas rights and have not leased them, you do not have to allow seismic testing on your property. If someone else owns the oil and gas rights or has leased the oil and gas rights, reasonable access is allowed. However, the seismic testing company must be employed by the owner of the oil and gas rights or the lessee of these rights. If it isn't, you do not have to allow seismic testing on your property. You should ask for some proof that the seismic testing company is acting on behalf of the owner of the oil and gas rights or on the lessee's behalf as sometimes the seismic testing company will approach you on its own behalf. If so, you do not have to allow seismic testing on your property.

If you have leased the oil and gas rights to an oil and gas company, the lease normally provides for the right to do the seismic testing. However, the lease can include restrictions on the type of seismic testing and where the testing can occur.

**What if you are approached by a seismic testing company and given an agreement to allow seismic testing on your property? What should you do?**

If you are approached by a seismic testing company asking for permission to do seismic testing on your land, you will normally receive a permit agreement to allow seismic testing on your property. This permit agreement is usually only one page and is usually very sparse as to protections for you, the landowner. Do not sign this permit application. Have it reviewed by an attorney. An attorney can draft a seismic testing agreement with specific protections for you.

Some of the items that need to be considered when doing seismic testing would include the following:

- What is your property being used for? If there is farming, livestock or other operations going on, these must be protected. If the property is leased, the tenant's rights need to be considered and protected.
- Are there buildings and/or water sources on your property? If so, setbacks will need to be established and provisions made for the protection of the buildings and water sources.
- Will the seismic testing be done through the use of shot holes or thumper trucks? The type of seismic testing and the location needs to be established.
- Where is the ingress and egress to and from your property going to be? This needs to be specified.
- When will seismic testing occur? A date and time need to be established. An expiration date for the seismic testing should be specified. You should also receive advance notice of the testing.
- When the seismic testing is done, what repair or remediation of your property will need to be done? The property should be returned to the condition it was in prior to the seismic testing.
- What happens if damage or injury occurs as a result of the seismic testing? The seismic testing company should be insured and should indemnify you against all loss or liability. There should be an indemnification clause in your agreement with the seismic testing company.
- What will you are paid for allowing permission to do seismic testing on your property? Usually the amount is miniscule; i.e., \$10 to \$25 per acre, but it may be possible to receive more.

The bottom line is that if you are approached by a seismic testing company asking for permission to do seismic testing on your property, you should contact an attorney to review and amend the seismic testing company's agreement, so that your rights are protected.