BIG SKY CARBON
SEQUESTRATION PARTNERSHIP

Fact Sheet - Seismic Survey

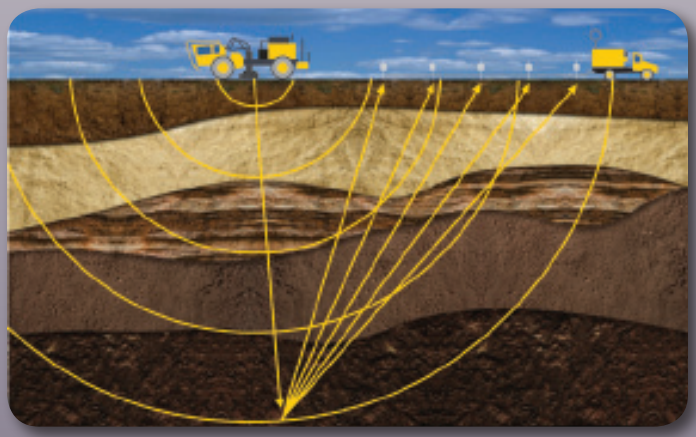
Introduction

One of the earliest activities of the Kevin Dome Carbon Storage project is a seismic survey. The purpose of a seismic survey is to better understand the underground geologic environment (such as the size, depth, and density of different geologic features). In order to complete the seismic survey at Kevin Dome, scientists must work closely with local landowners, government agencies, and tribes in the area to ensure seismic activities are carried out in a way that respects the surrounding human and physical environment. Teamwork and communication between all of these separate groups is essential.

What is a seismic survey?

A seismic survey is a technique that uses sound waves to develop images of the rock layers belowground. It can be compared to an ultrasound used at a doctor's office, which uses a specific frequency of sound to reveal the size and structure of internal organs, muscles and bones in the human body.

At Kevin Dome, scientists will use these seismic data and create unique 3-D images and models illustrating the underground environment. Depending on the underground geologic features, these 3-D images may reveal faults or fractures occurring within the rock layers. Most importantly, however, these images and models will help researchers understand the thickness and depth of the different types of underground rock layers. This information is critical for assessing, conducting and monitoring a carbon storage project.



How is a seismic survey conducted?

When underway, seismic sensors (called geophones) are temporarily installed at the ground surface to record "echoes" from sound bouncing back from the rock layers below. The deployed sensors are cylindrical, about 3 inches in diameter and 8 inches long. All ground sensors are removed from the ground following the completion of the seismic survey.

Once the geophones are in place, vibration trucks will move in a grid-like pattern across the project area. While they drive, a large vibration pad is lowered onto the surface releasing sound waves which penetrate deep below the ground. As the vibrating waves encounter changes in the rock, an echo is reflected back to the surface. These reflections are picked up by the ground sensors and transmitted to a recording truck for computer processing and analysis.

Using these sound waves, scientists can measure underground depths based on the time a sound wave takes to travel to the rock layer and back to the receiver (helping create an image of the underground geologic environment). And in addition, depending on the wave characteristics (such as wave height and distance between each wave), various rock properties can be evaluated for their carbon storage capacity.

Questions?

Additional information can also be found on our website at **www.bigskyco2.org**