# Unit 3: Data acquisition and evaluation of field seismic results

## Multiple choice questions

1. When setting up a seismic instrument, the geophone will be placed in the ground and then connected to the \_\_\_\_\_\_\_\_\_ on the \_\_\_\_\_\_\_\_\_\_:

*Pick the pair of words that BEST fills in the blanks above.*

1. Takeout; seismograph
2. Cable; ground
3. Seismograph; cable
4. Takeout; cable

2. When measuring seismic refraction data at a field site near a train line, the operators noticed noise in the data. One possible way to improve data quality might be:

1. Increase the number of stacks
2. Increase the number of geophones
3. Decrease the number of shot points
4. Decrease the number of seismographs

3. Knowing the depth to a geologic interface in the ground and the velocities of the Earth materials allows for the calculation of what instrument parameter:

1. Hammer source weight
2. Total line length
3. Number of geophones
4. Number of stacks

4. If you are viewing a seismogram and see a “bend” in the first arrivals, this is usually a good indication of:

1. A geologic interface causing refraction
2. High noise levels at the site
3. A homogeneous subsurface
4. Absence of horizontal layers

5. Good information to put into a conceptual model of the subsurface after conducing your seismic refraction experiment is:

1. Material velocities
2. Layer Thicknesses
3. Material interpretations
4. All of the above

## Short Answer Questions

1. In the Case Study exercise we focus on the two end shots to analyze the velocity structure. The Unit 3, Part 2 slideshow also shows a “center shot” at 115 ft along the same line. Explain in words how you would analyze these data differently from the end-of-line shots.
2. Why are the arrivals from the second layer before the crossover point not visible in the field data? (refer to the last slide of Unit 3, Part 1)
3. Discuss at least three reasons why it is valuable to make predictions (i.e., calculate synthetic data) before conducting your field data acquisition.