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Steps involved in a marine seismic survey:

- Company plans and designs seismic program.
- Ship sails along a series of straight lines above the survey area **1**
- Ship tows energy sources, usually arrays of airguns, to produce sound energy in the water **2**
- Ship also tows long "streamers," **3** between three and six kilometres in length, filled with hundreds of underwater microphones called hydrophones.
- As the ship moves slowly along each survey line, a series of controlled bursts of compressed air from the airguns in the water generate sufficient energy to travel deep into the earth below the ocean floor.
- When this energy is reflected back from under-lying geologic strata **4** it is detected by the hydrophones that convert the energy into electrical impulses which are then transmitted back along the streamers to the ship to be recorded on magnetic tape.
- The data on the magnetic tapes are processed, often onboard the vessel, to create sonic images of the subsurface.
- The result is a series of lines of recorded seismic data **5** that together yield a graphic 3D representation of subsurface geologic structure, enabling interpreters to decide where to drill for oil or gas.