

# Scientific Argumentation Guide

Topic: Hydraulic Fracking Name: Jennifer Krantz  
 Title: \_\_\_\_\_ Class: \_\_\_\_\_  
 Source: \_\_\_\_\_ Date: \_\_\_\_\_

1 What is the Claim, including any Qualifiers? Are there qualifiers? Yes/No. (If yes, underline them.)

Shallow Fracking wells may threaten aquifers.

2 What Evidence is presented?

In column 3, identify the type of evidence with the letter: Data (D), Fact (F), Opinion (O), Theory (T).

Shallow wells are greater risk for groundwater contamination (closer to drinking water aquifers) F  
 4400 wells analyzed 16% less than mile deep D  
 - median depth = 825 ft - use well-5 mill gal of water/clock  
 Shallow wells = cheaper will become more common O

4 Evaluate the quality of the evidence as poor, average or good. Explain your evaluation.

Reliable Good - Best/Only Data - University Study  
 Valid Good - Over 44,000 wells  
 Objective (no bias) - Good - Reputable institution/industry  
 Methodology Avg - Relies on Self-Reporting

3

What chain of reasoning (warrant) connects the evidence to the claim? In column 6, identify type of reasoning with the letter(s): For AUTHORITY (A), THEORY (T), or type of LOGIC: Analogy (AN), Correlation (C), Cause-Effect (CE), Generalization (G)

Largest Study Shows that 16% of wells are shallow and shallow wells are a greater risk for groundwater contamination and because they are cheaper they will become more common CE

7 Evaluate the quality of the chain of reasoning as poor, average or good. Explain your evaluation.

Strength of Authority Good - Reputable Institutions  
 Application of Theory NA  
 Type of Logic Good - Cause and effect correlation

8 What are your concerns about the believability of the claim? (Your counterarguments, rebuttals or new questions)?

The claim seems valid, but I would like more info about the polluted aquifers

9 Accept, reject, or withhold judgment about the claim. Explain your judgment.

Accept the number of shallow wells have increased, and will increase more because of cost, and accept that they may threaten aquifers