

Assignment 1

Hydraulic Fracturing in Michigan Case Study

The objectives of this assignment are (1) to assess your understanding and application of scientific concepts to the scientific claims about hydraulic fracturing (HF), and (2) to assess critical thinking skills. These skills specifically refer to your ability to identify, challenge, and reconfigure assumptions.

For this assignment you will select **one** of the following documentaries about HF: Gasland (available via Amazon Prime or in the library) or Fracknation (available via Netflix). These documentaries take opposite positions in regards to the activity and are based on different assumptions. After watching the film, you will analyze it using the readings we have reviewed so far. Again, I want you to identify assumptions (e.g. fossil fuels are running out), challenge these assumptions (e.g. no, we are not running out because the US has 2,276 trillion cubic feet of natural gas, according to the US Energy Information Administration), and reconfigure assumptions (e.g. while technically true, that amount of gas will only last 84 years, so from a long-term perspective, we need to quickly consider other options). I want you to use the following questions as guides as you identify assumptions. You do not need to answer every single one of these questions. They are meant to guide you and help you identify the main assumptions or claims.

General and systemic assumptions

- What assumptions about energy production are made in the documentary?
- What assumptions about economic impacts are made?
- What assumptions about property rights, freedom, civil liberties, etc. are made?

Assumptions about knowledge generation and science

- Who are the sources of knowledge presented?
- What are the scientific claims made?
- How is scientific knowledge portrayed?
- What aspects of scientific uncertainty and the technological process are included? Which ones are excluded?
- Are the scientific arguments presented consistent or in contradiction with the scientific evidence presented in the scientific reports you read?

Assumptions about standing and the rules of the game

- Who has political, social, and/or scientific standing in the discussion?
- Who is not included in the discussion?
- How are regulations presented?

