

Homework #1 – Basic Design Concepts and Introduction to Fluid Mechanics
ME5810/6810 Thermal Systems Design
Due Thursday 9/04/2008

1. Please read the article titled: “Sewer fuels home's heat” from the Deseret News dated Mar 27, 2007. The article may be found on-line at:
http://findarticles.com/p/articles/mi_qn4188/is_20070327/ai_n18760312
2. After reading the article and chapter 1 in the Janna Text, please
 - a. Sketch a schematic of the heat pump system in a basic manner similar to Figure 1.1 in the Janna text
 - b. Identify all of the required equipment for the design (e.g. pumps, pipes, etc)
 - c. Make a list of DESIGN VARIABLES
 - d. Make a list of DESIGN CONSTRAINTS
 - e. What would a MEASURE OF GOODNESS be for this design
 - f. Make a list of DESIGN CONSTANTS
 - g. Make a list of some limitations of this design idea
3. Solve the following problems from Chapter 2 in the Janna text:
 - a. 3, 7, 9, 13, 23