Description of the MEG injection model

This document gives a description of how the MEG injection model is implemented in NeqSim. The model is developed using the NeqSim process unit operations such as streams, etc. The model is set up according to the process flow diagram in Figure 1. The names of the unit operation (eg. "lean MEG feed stream") given in the figure is used for accessing the unit operation from Java and Python code.

Figure to be made.....

Figure 1 NeqSim MEG injection flow diagram

The process is implemented in the Java code given in Appendix 1. The The process is saved in a file (eg. "MEGinjection.neqsim"), that can be opened and used for further calculations (in Java, Pyhon, Matlab etc.).

In Appendix 2 the MEG injection model is opened in Python, new input parameters are set and calculations are run. The calculations can be run in a single process or as a thread where multiple calculations can be run at the same time. When a calculation is run in a single process the program will wait for the process to converge before further calculations can be done.

Appendix 1:

The following Java process script is used to set up the MEG injection process and store the process in the binary file MEGinjection.neqsim.

https://github.com/equinor/neqsimprocess/blob/master/src/neqsimprocess/glycol/MEGinjection.java

Appendix 2

Python process script

https://github.com/equinor/neqsimprocess/blob/master/example/MEGprocess.py

To run the script:

1. Install the neqsim package in python. (pip install neqsim)
2. Download the MEGinjection.neqsim file to your local computer (process files stored here)
3. Modify input conditions and run calculations

Appendix 2