Supplementary Material Contents

This folder contains the following files:

1. *new_recover1.py*: python file that was used to run the FEniCS code for the case $K = 10,\ \epsilon = 0.15$ with the flooded boundary condition at the mine pit during recovery. The other model parameters r_1, h_0, f are looped over in the code.
2. *new_recover2.py*: as above, but with the impermeable backfill boundary condition at the mine pit during recovery.
3. *geom1_very_fine_mesh_1537* files: Gmsh *.msh* file and the corresponding *.xdmf* and *.h5* files which describe the 1-D mesh that was used for the $K = 10$ case. For this mesh, $r_\infty = 30$.
4. *geom1_long_fine_mesh_1793* files: as above, but used for the $K = 100$ case. For this mesh, $r_\infty = 100$.
5. *geom1_short_fine_mesh_2561* files: as above, but used for the $K = 1$ case. For this mesh, $r_\infty = 10$.

Note: The r_1 (injection point) sampling points were chosen to correspond to a subset of the nodal points of the mesh so that the FEniCS PointSource function could be used at the injection point. In the python files above these sampling points have been chosen from the nodal points of the *geom1_very_fine_mesh_1537* mesh. They were altered for the other meshes as follows:

1. $K = 100, r_\infty = 100$:

   for r1 in [1.0625, 1.125, 1.25, 1.375, 1.5, 1.75 , 2, 2.503906, 3.007812,

   4.003906, 5, 6.1875, 7.375, 9.007812, 12.125,

   14.5, 18.0625, 19.99219, 24, 28.75, 38.25, 47.75, 62, 100]:

2. $K = 1, r_\infty = 10$:

   for r1 in [1.03125, 1.0625, 1.09375, 1.125, 1.1875, 1.25, 1.3125, 1.375,

   1.5, 1.75, 2. , 2.25, 2.5, 2.75, 3, 3.25, 3.5, 4, 4.5, 5,

   5.5, 6, 7.5, 10]: