

Preparing the physical modelling facility to simulate injection/storage of fluids and gases in complex structures

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Banff Park Lodge
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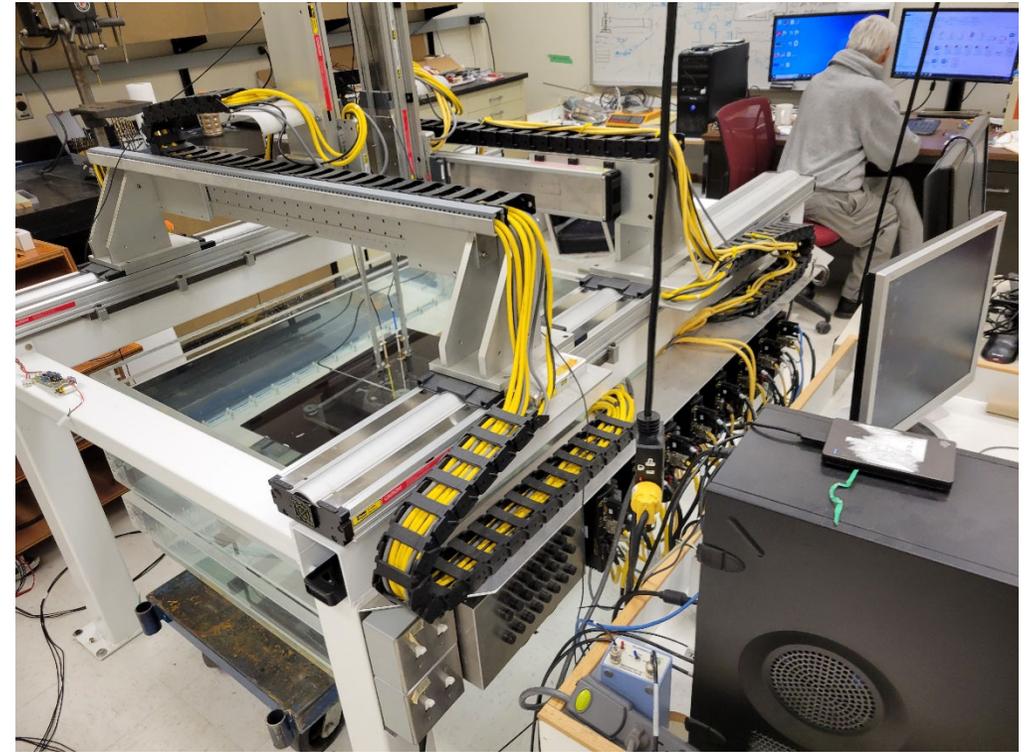
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Department of Geoscience

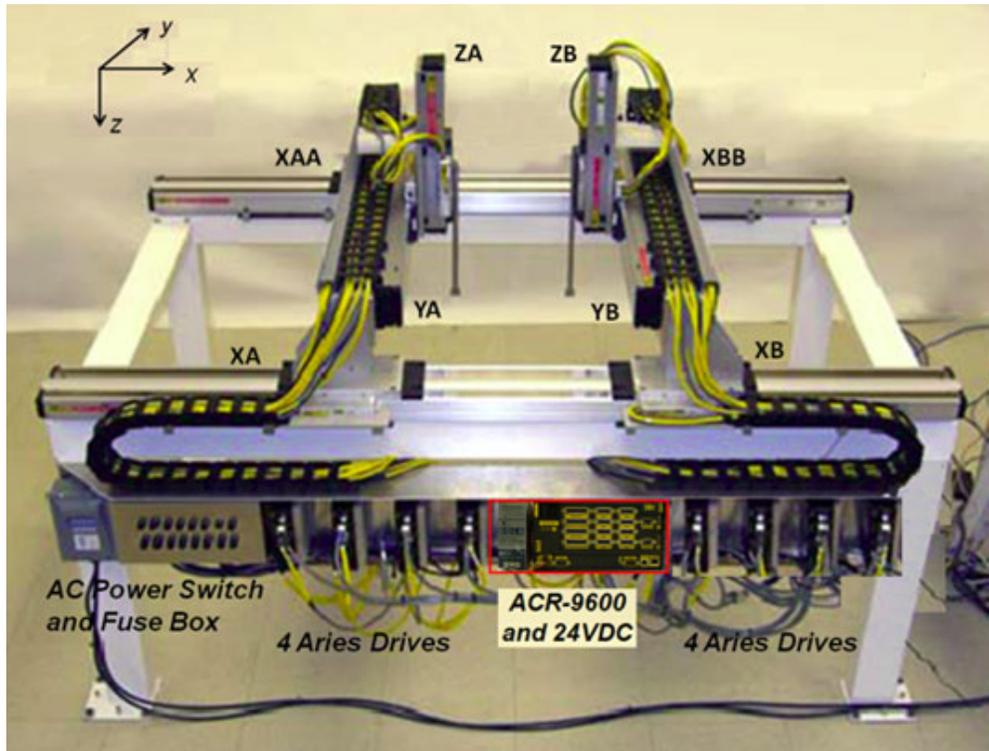


Brief description of Seismic Physical Modelling System



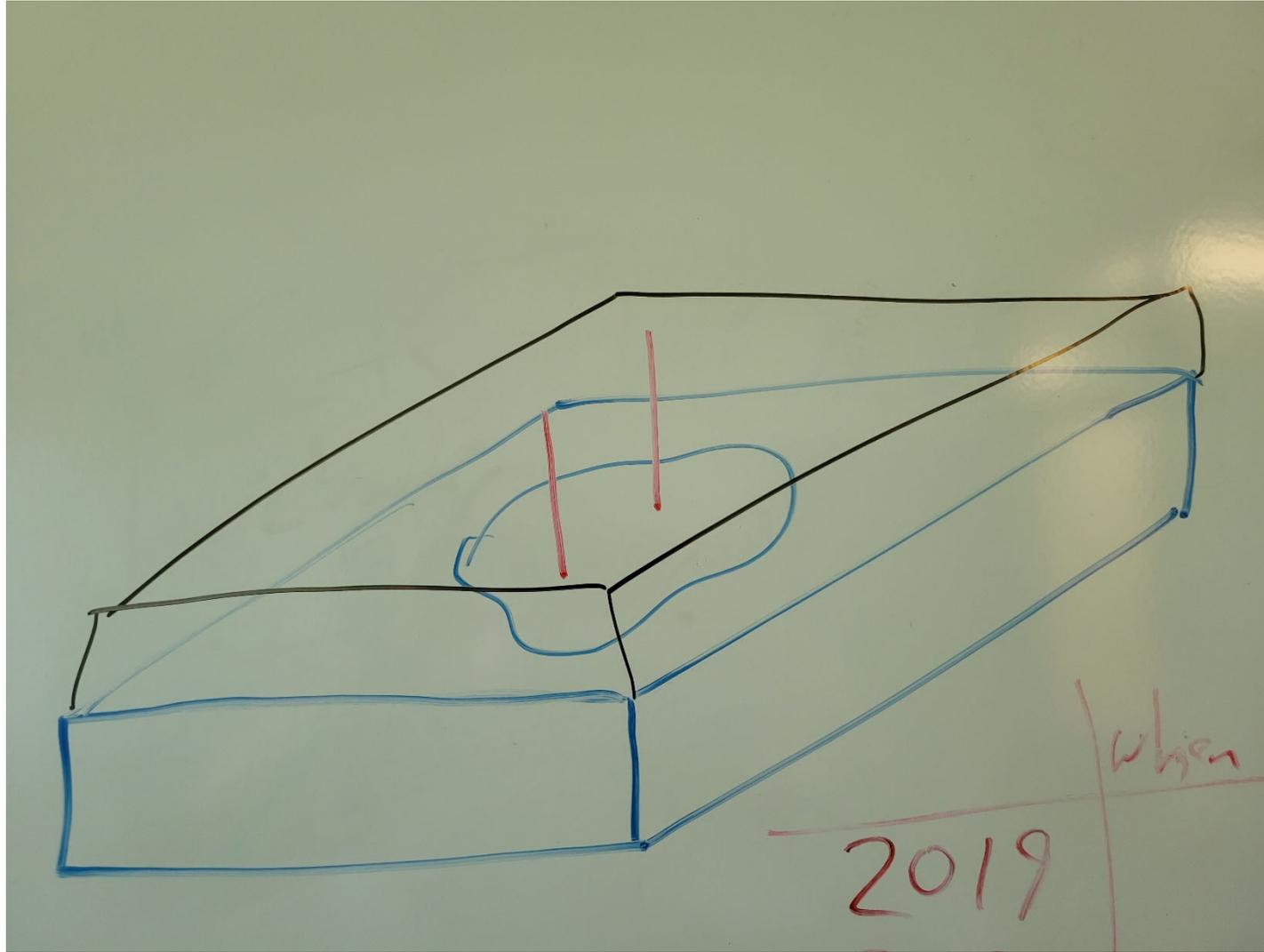


Brief description of Seismic Physical Modelling System



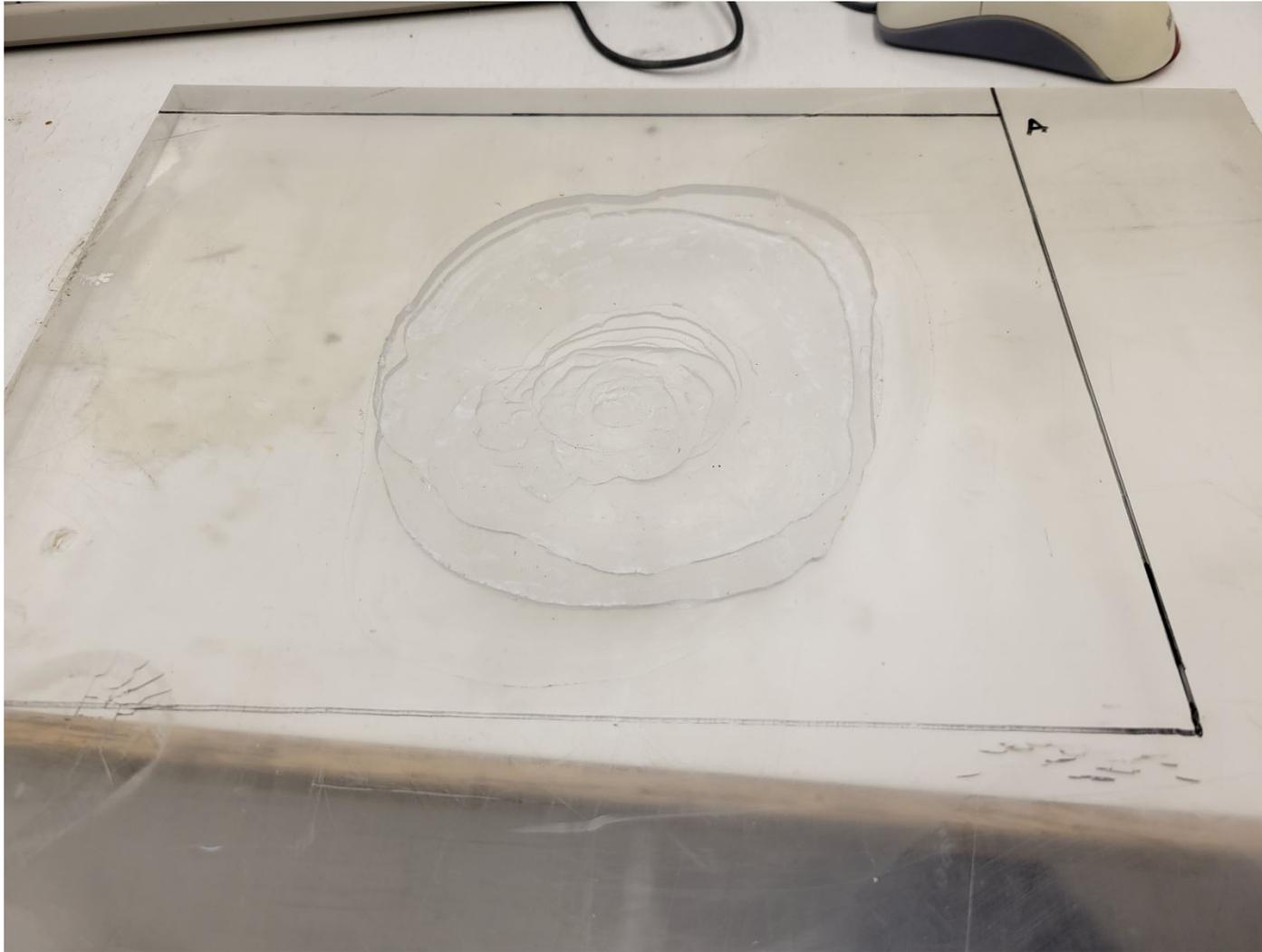


Initial fluid replacement model design

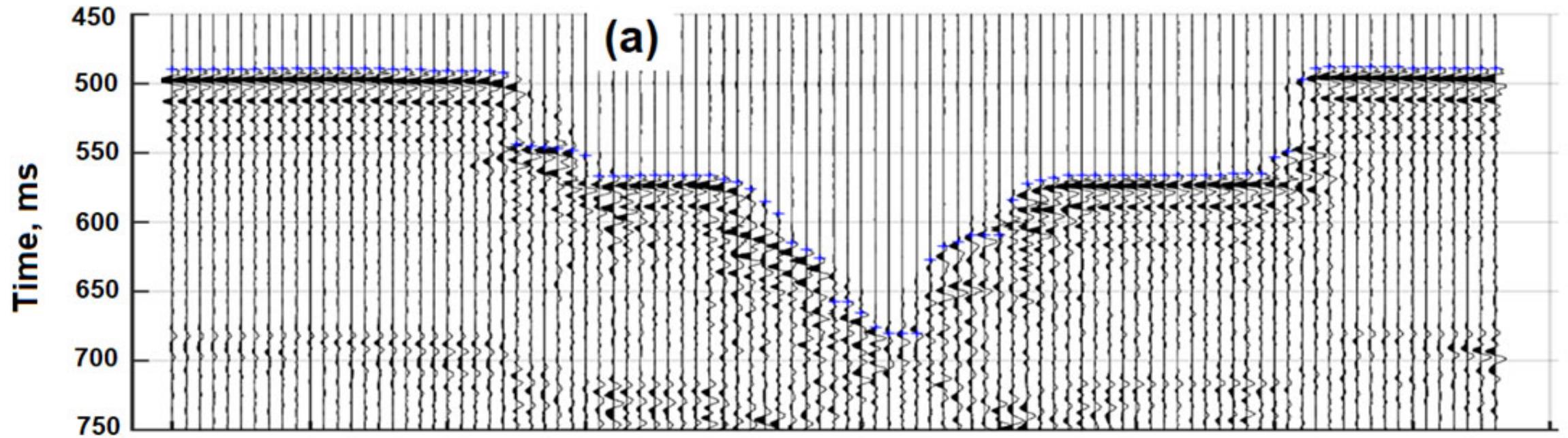




Model for fluid replacement experiment

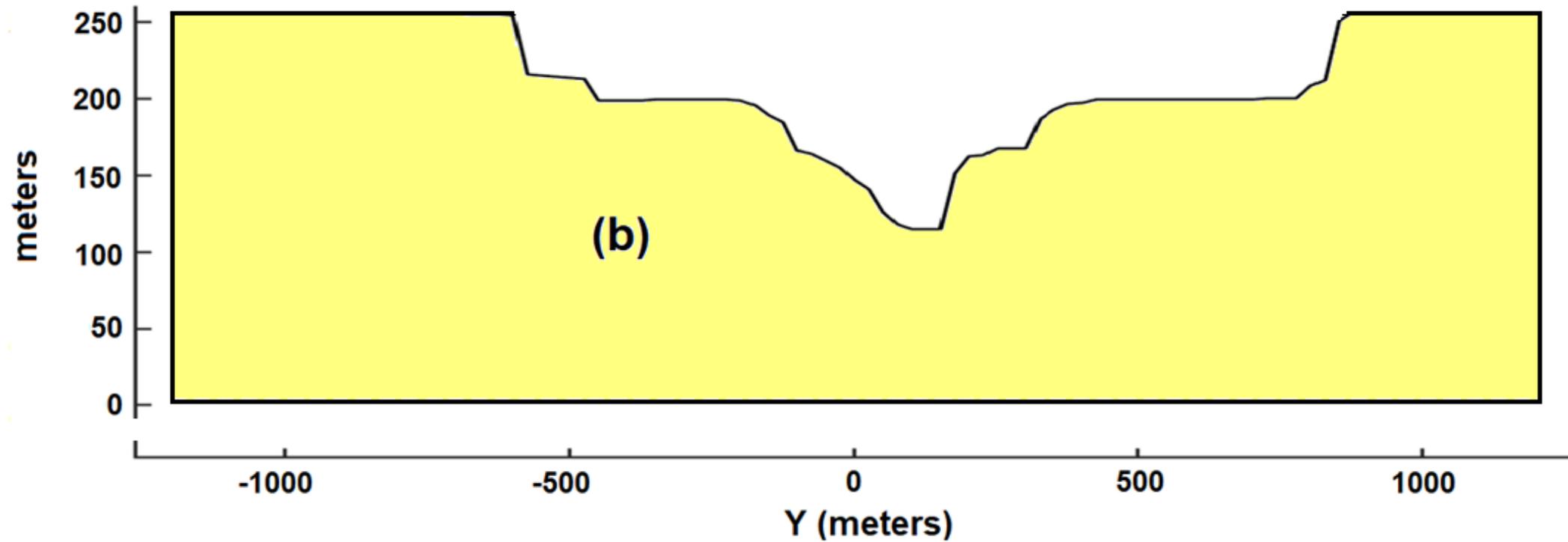


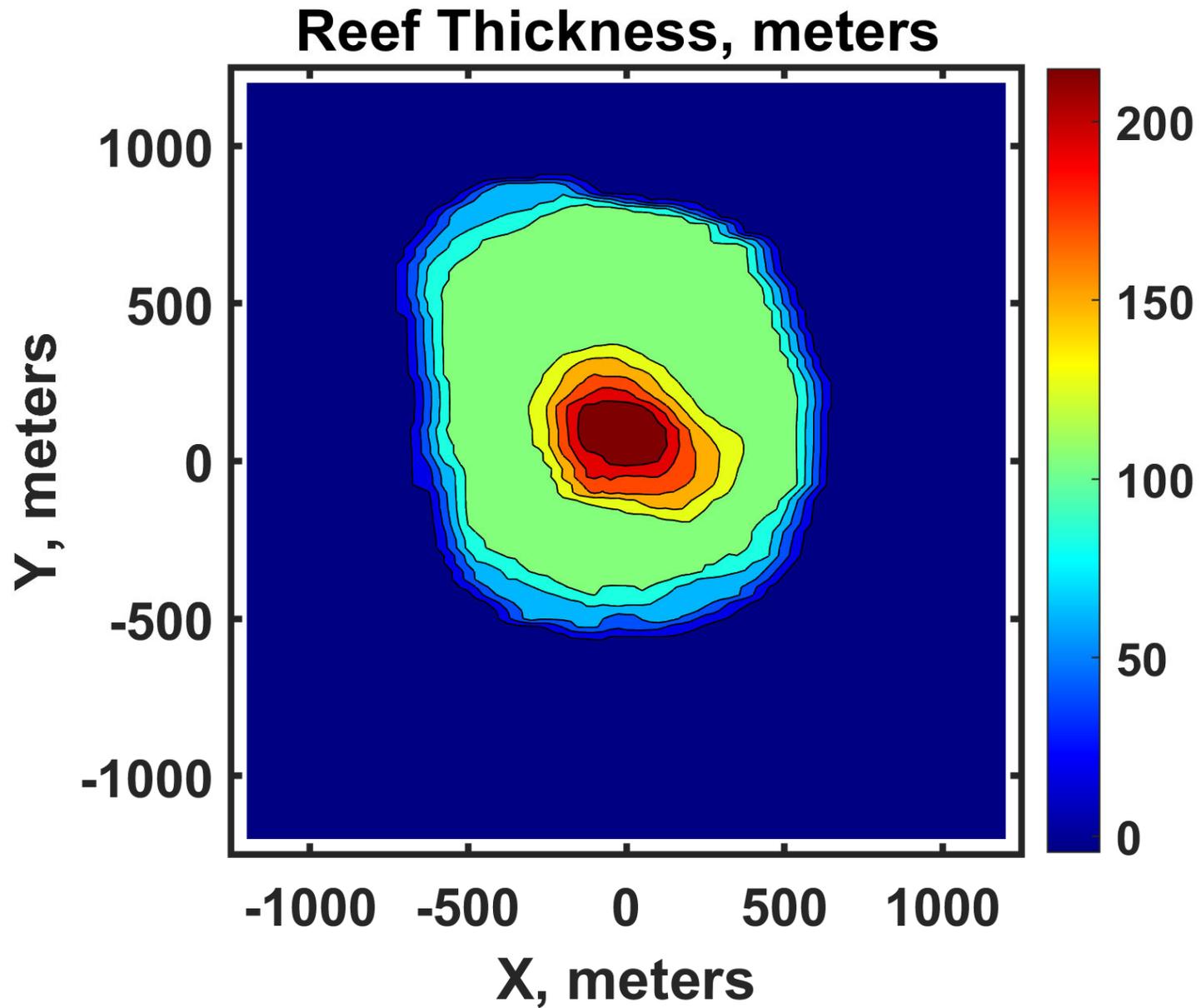
Volume of
basin:
~124.22cc





Profile of model from 2D data



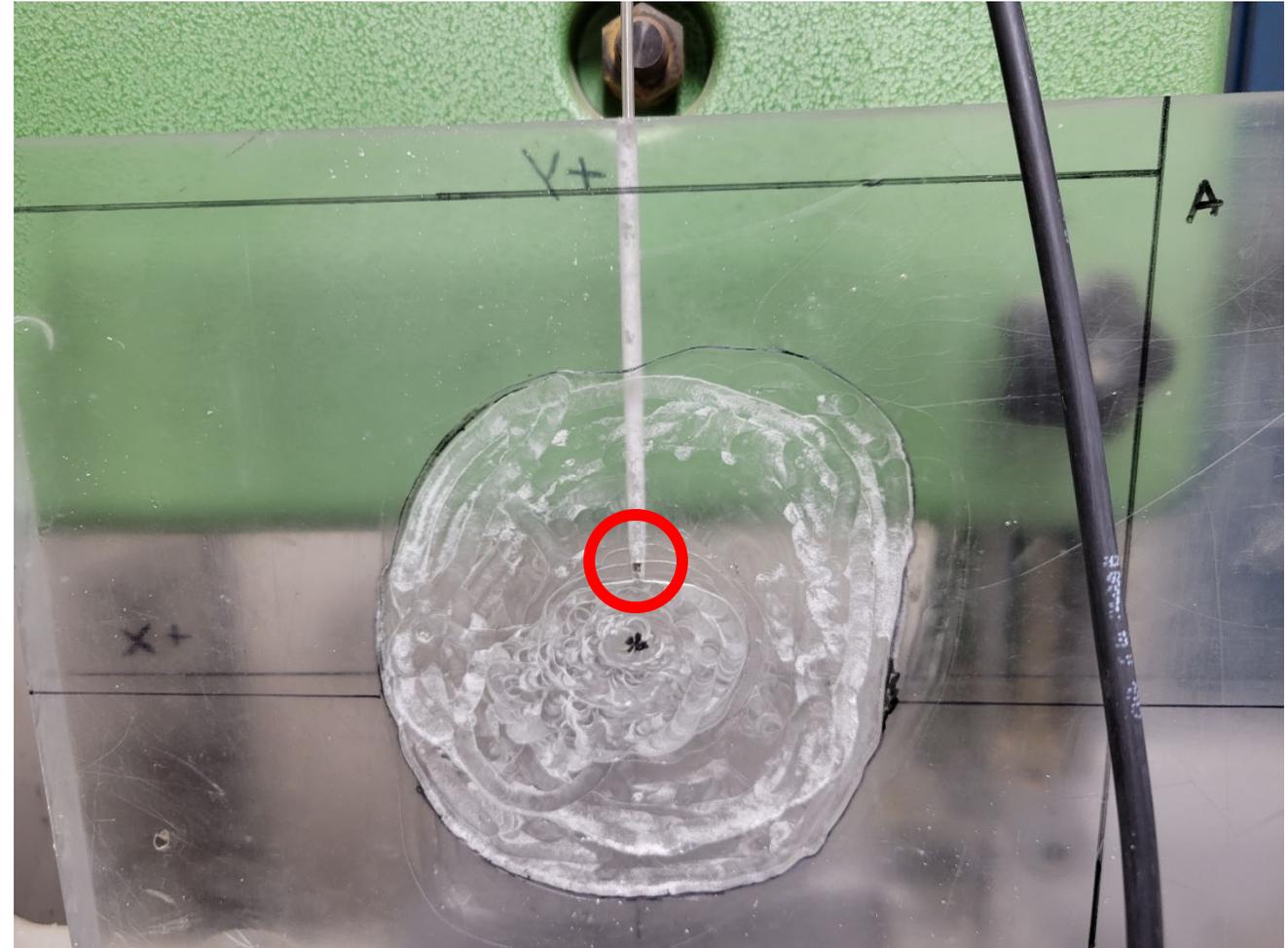
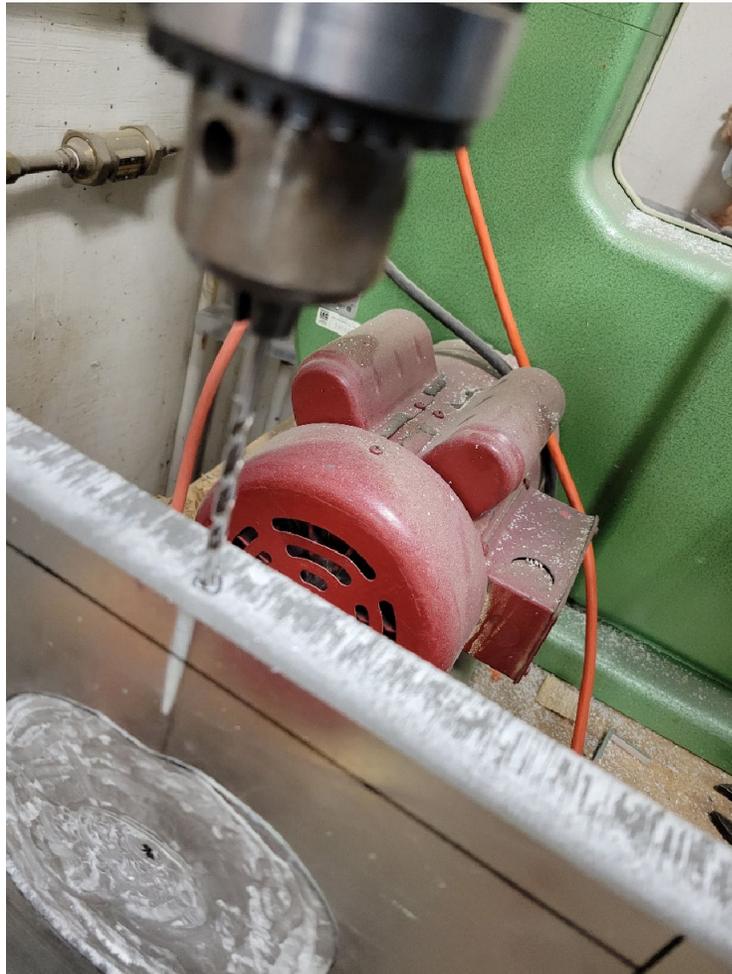


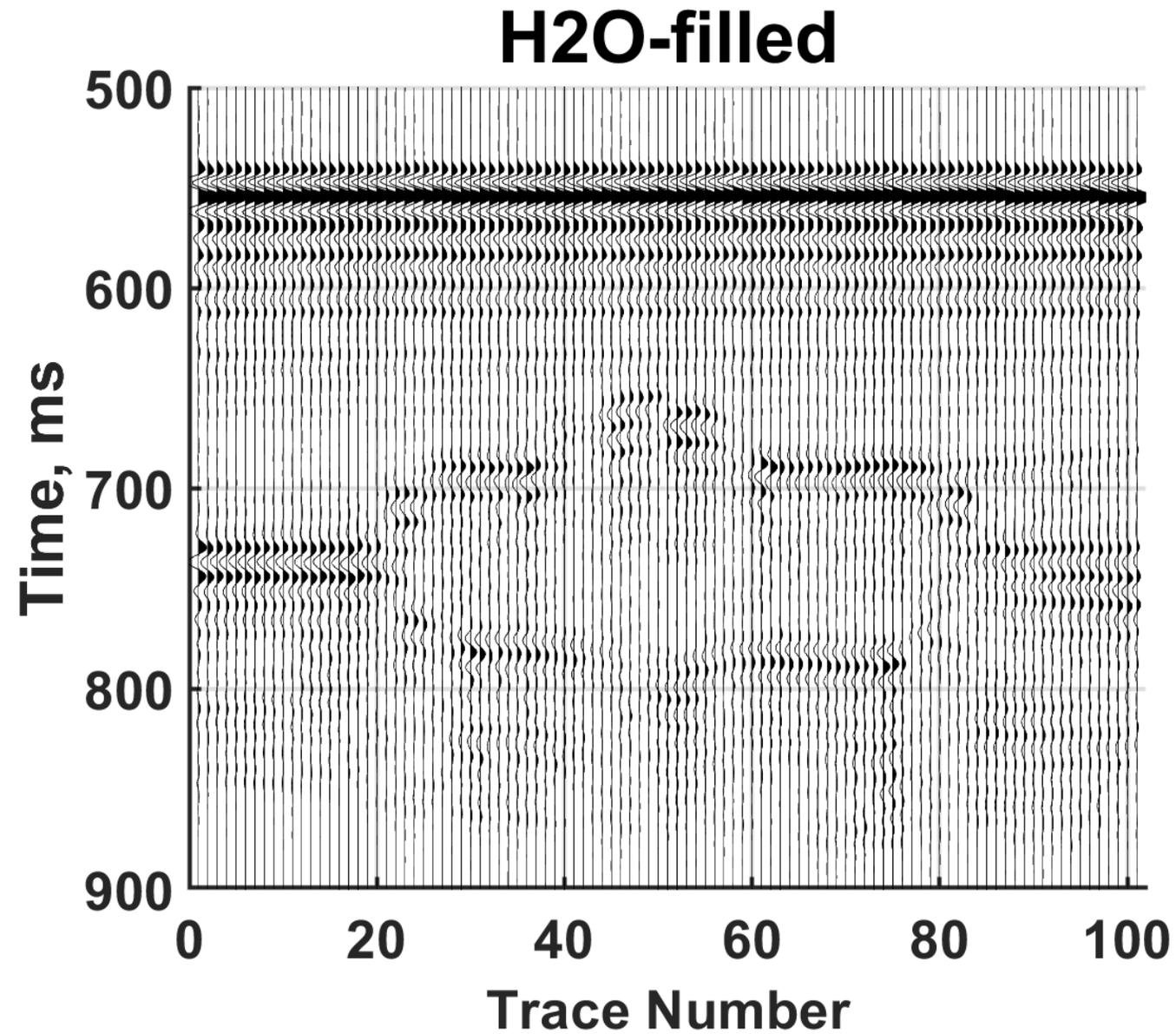
 First fill of porous material





New injection position

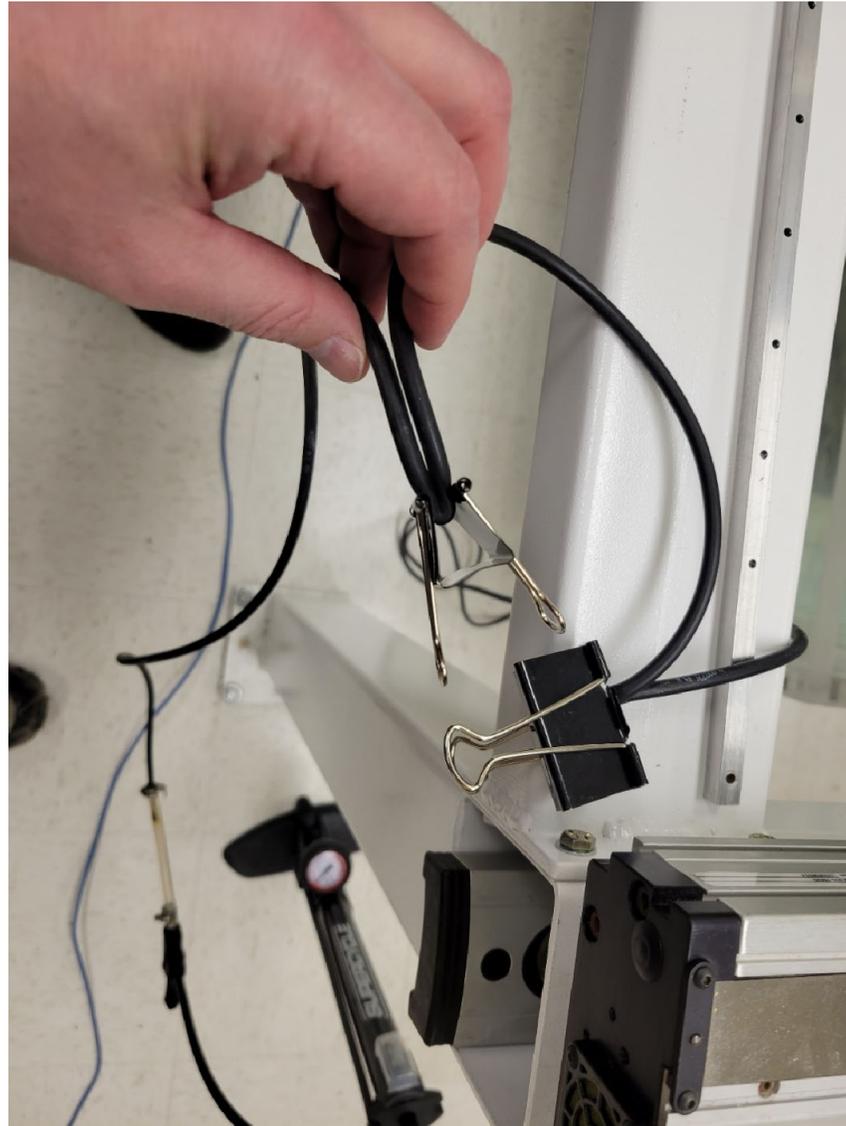


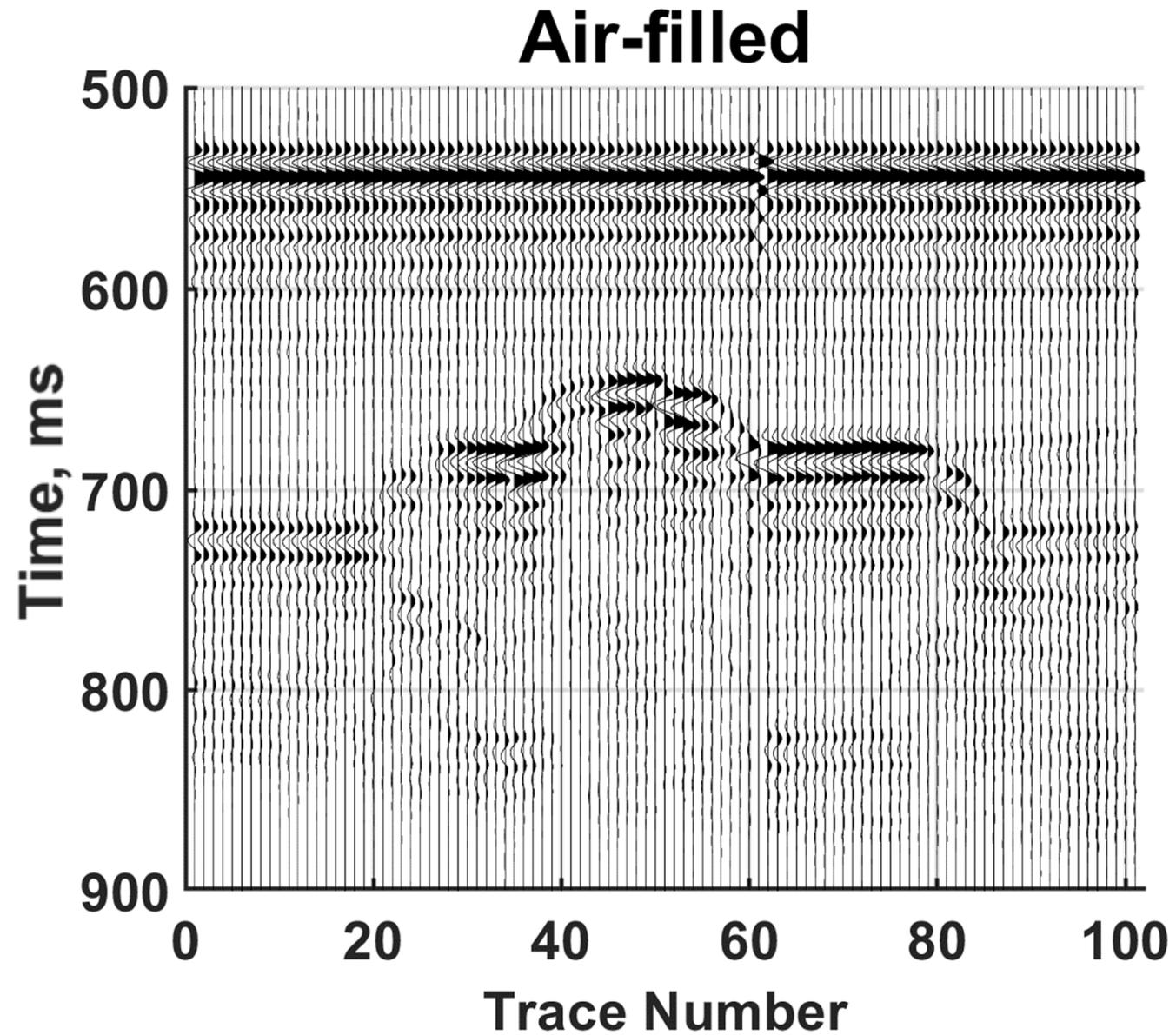




Filling model with air







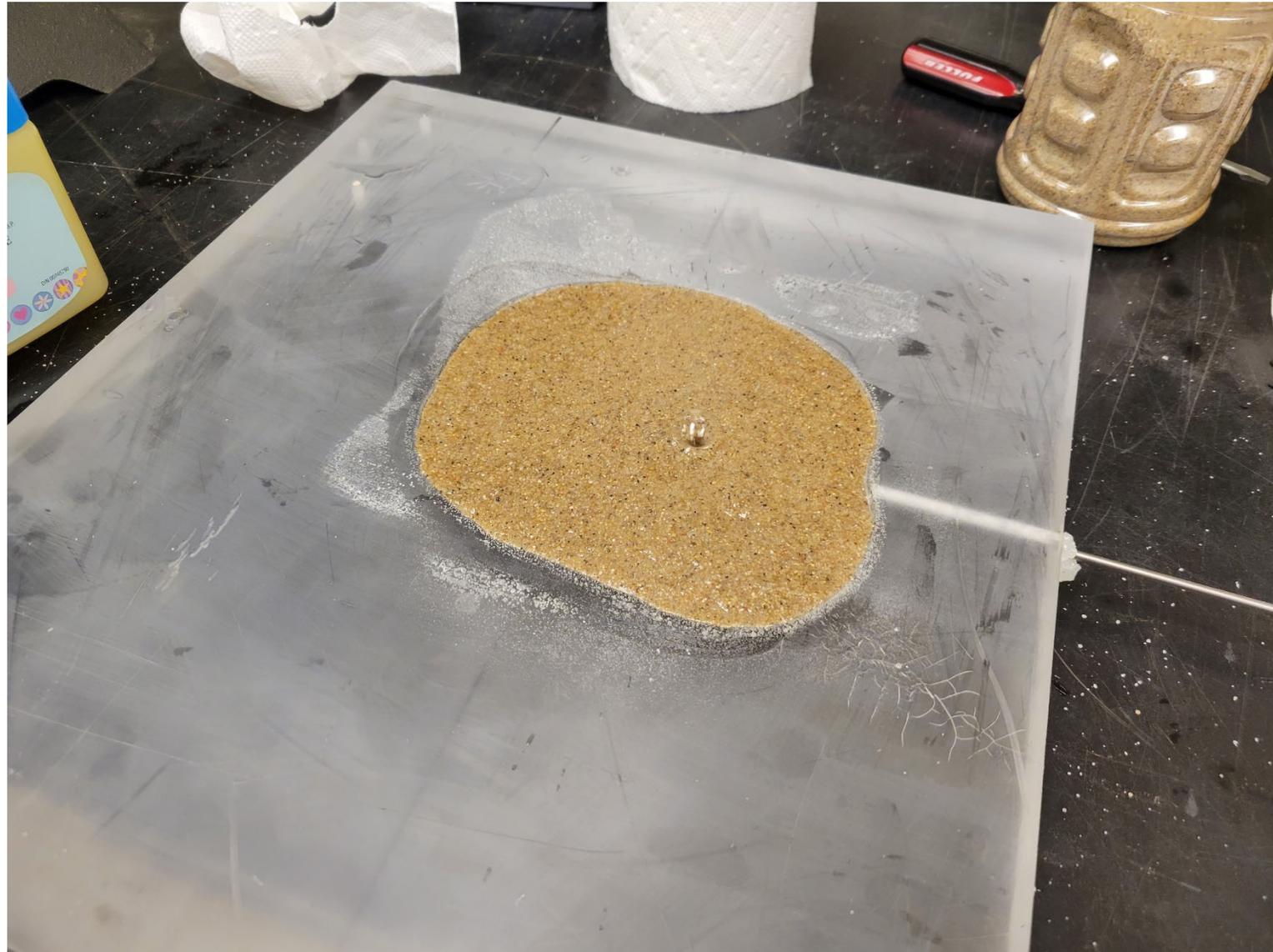


Determining porosity of material in model

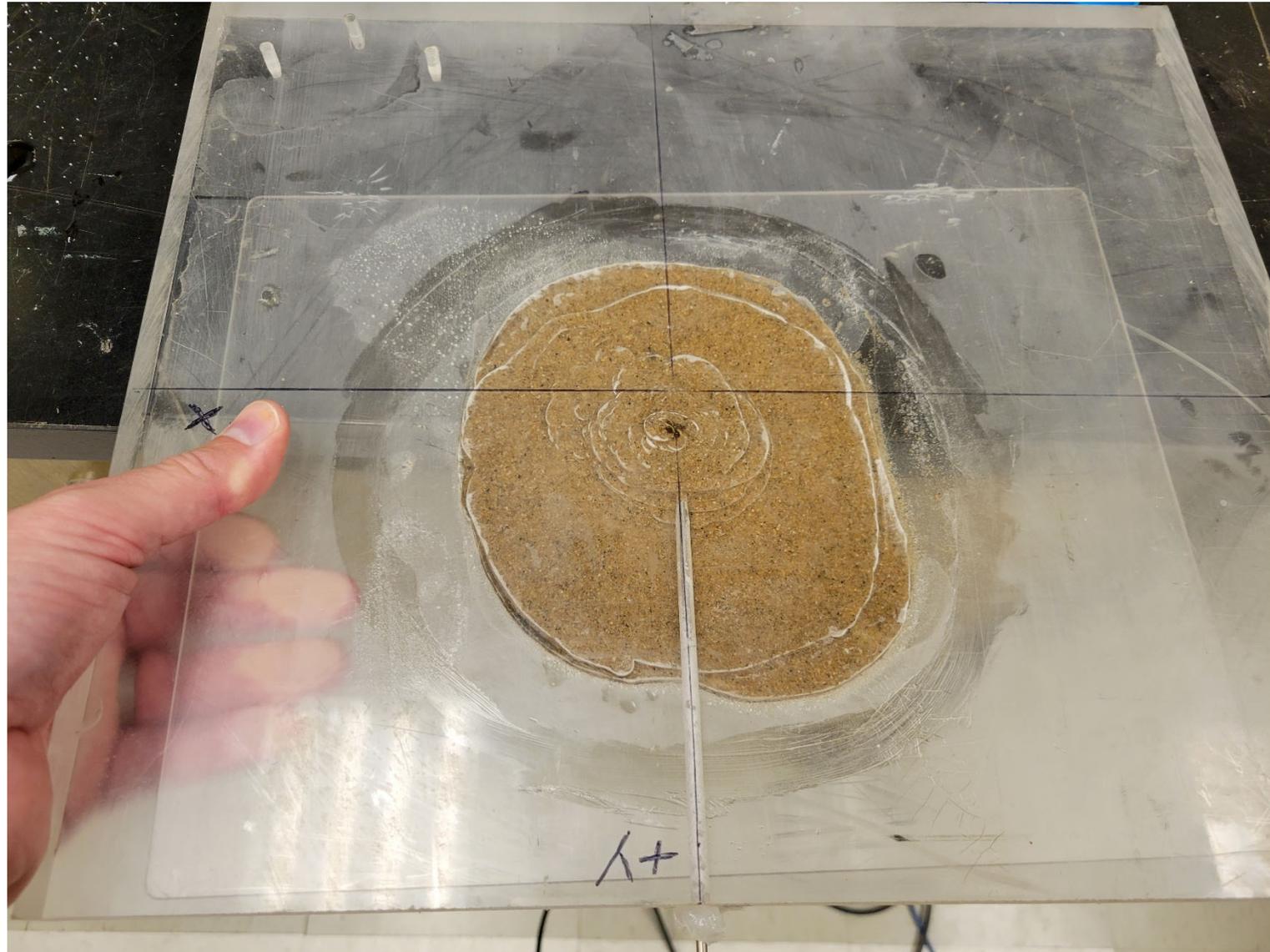




Proof that air can be injected into the model

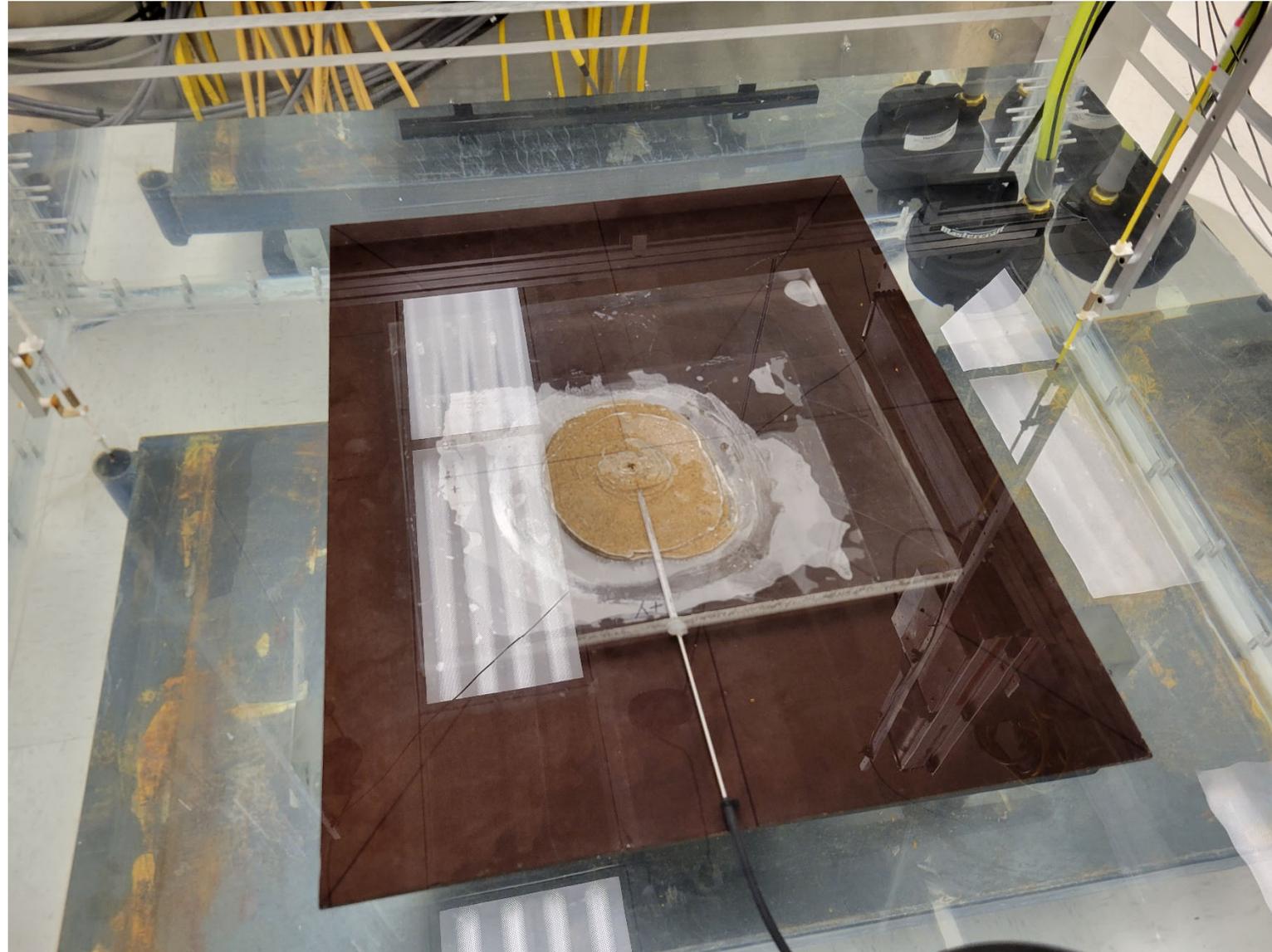


 Model filled with porous material



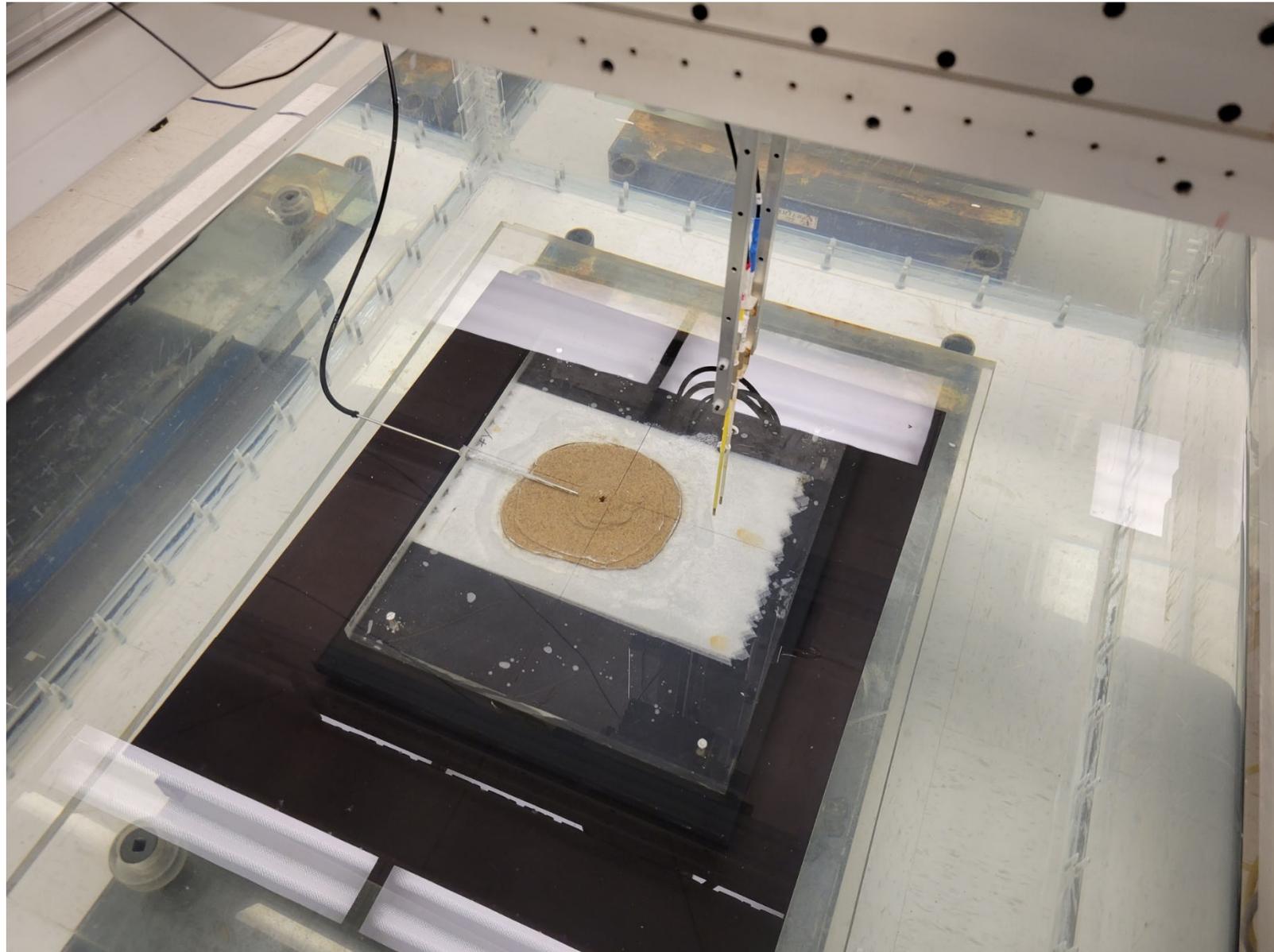


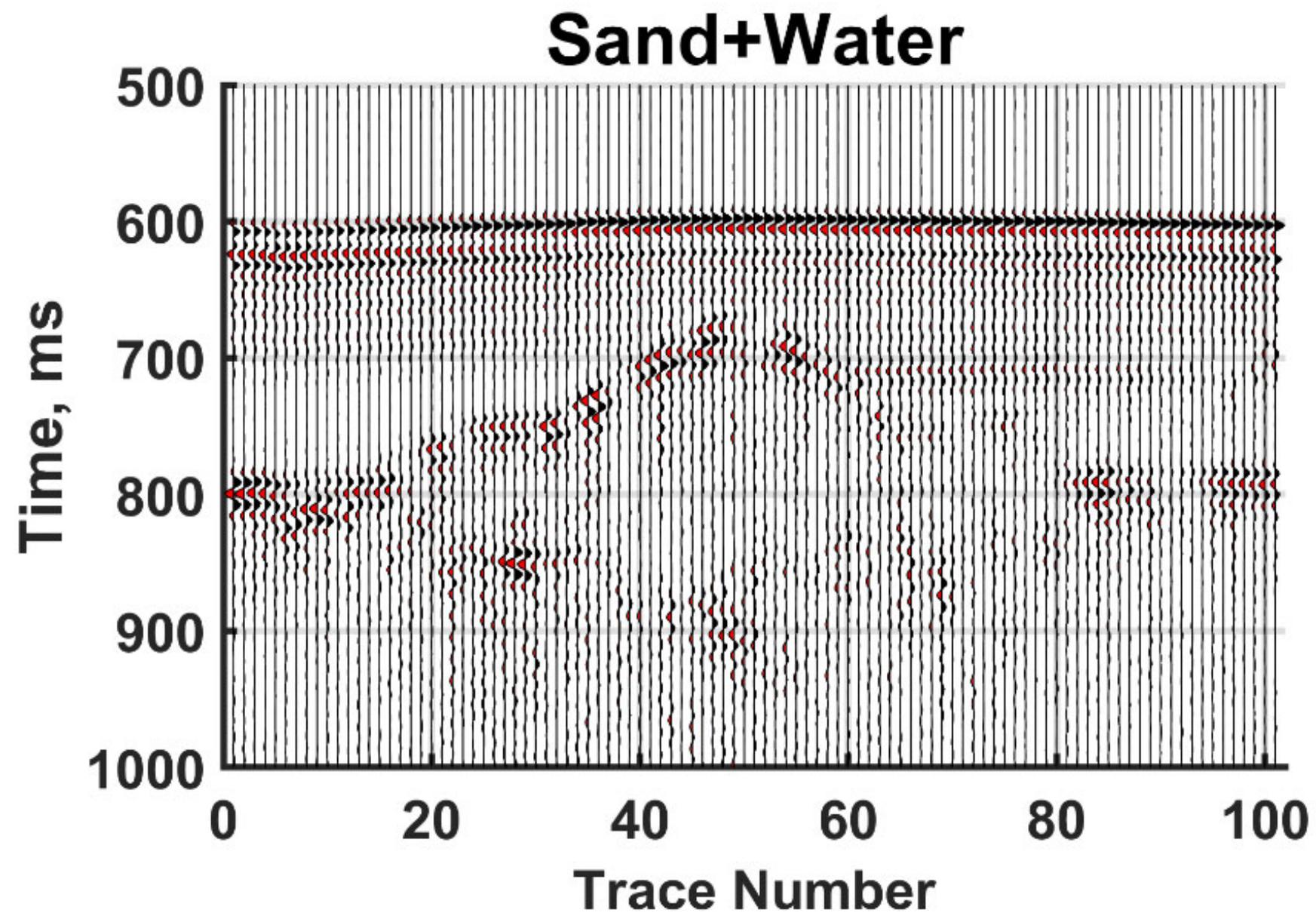
Initial injection attempt





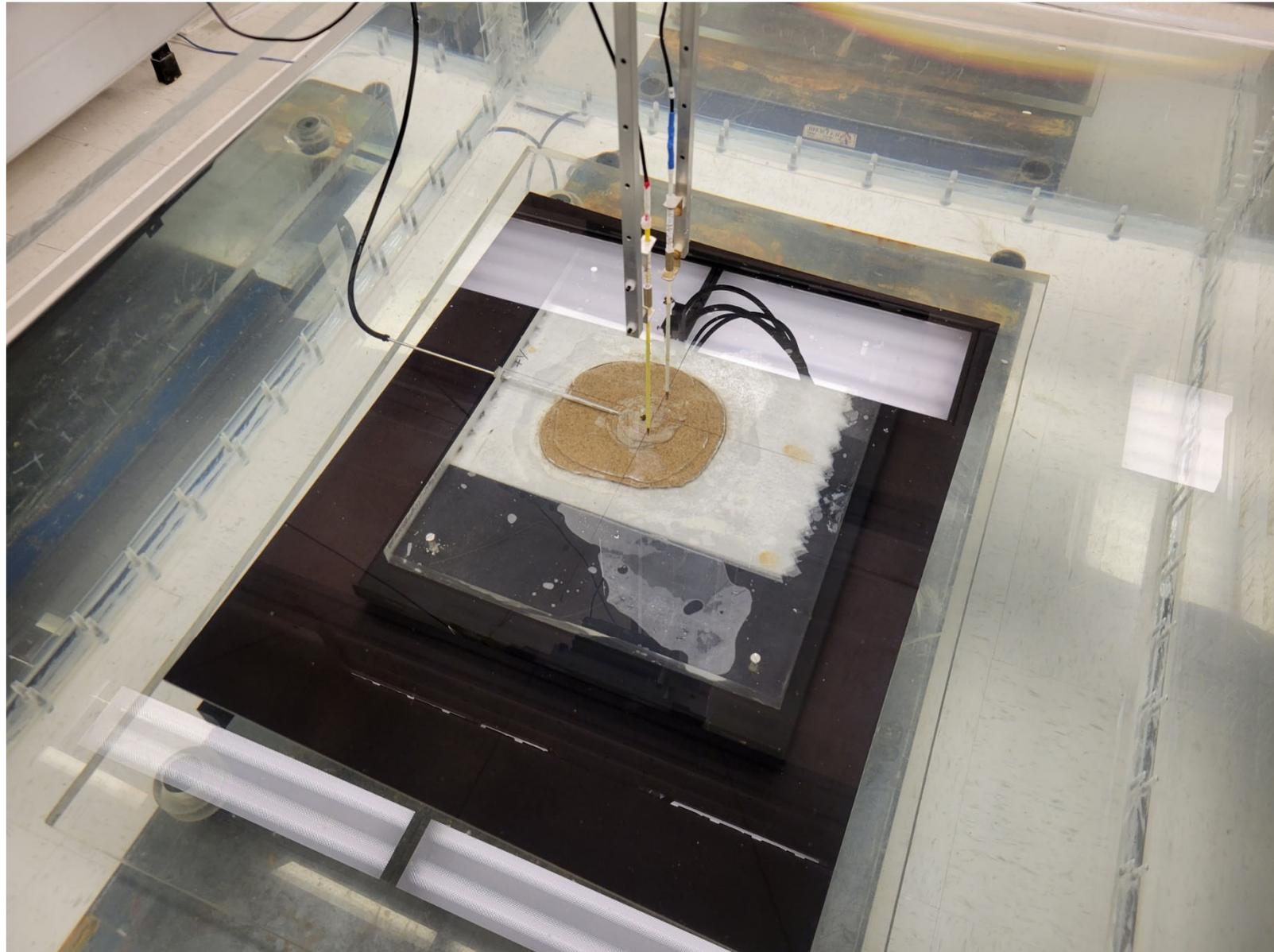
First porous media survey (water filled)

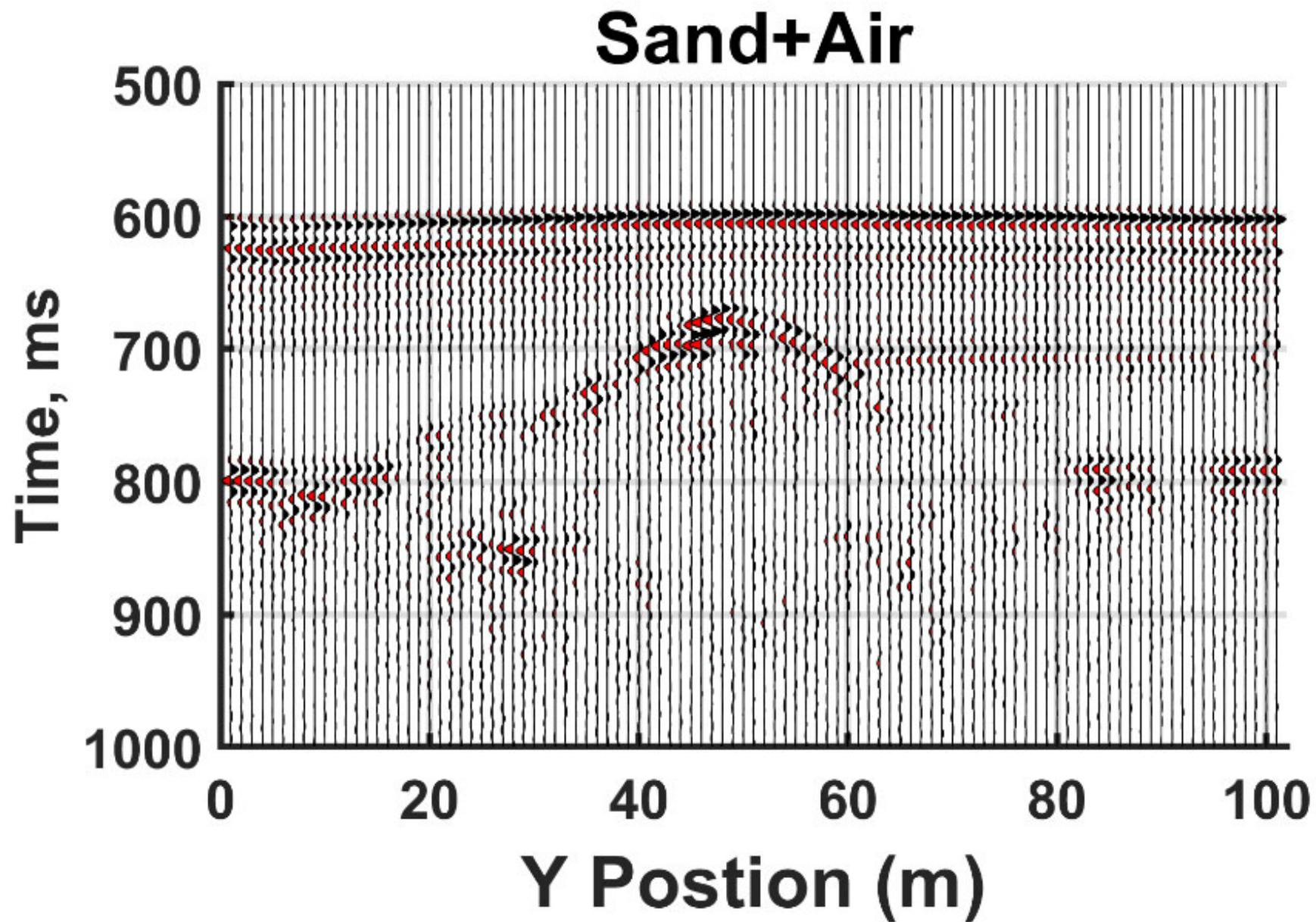


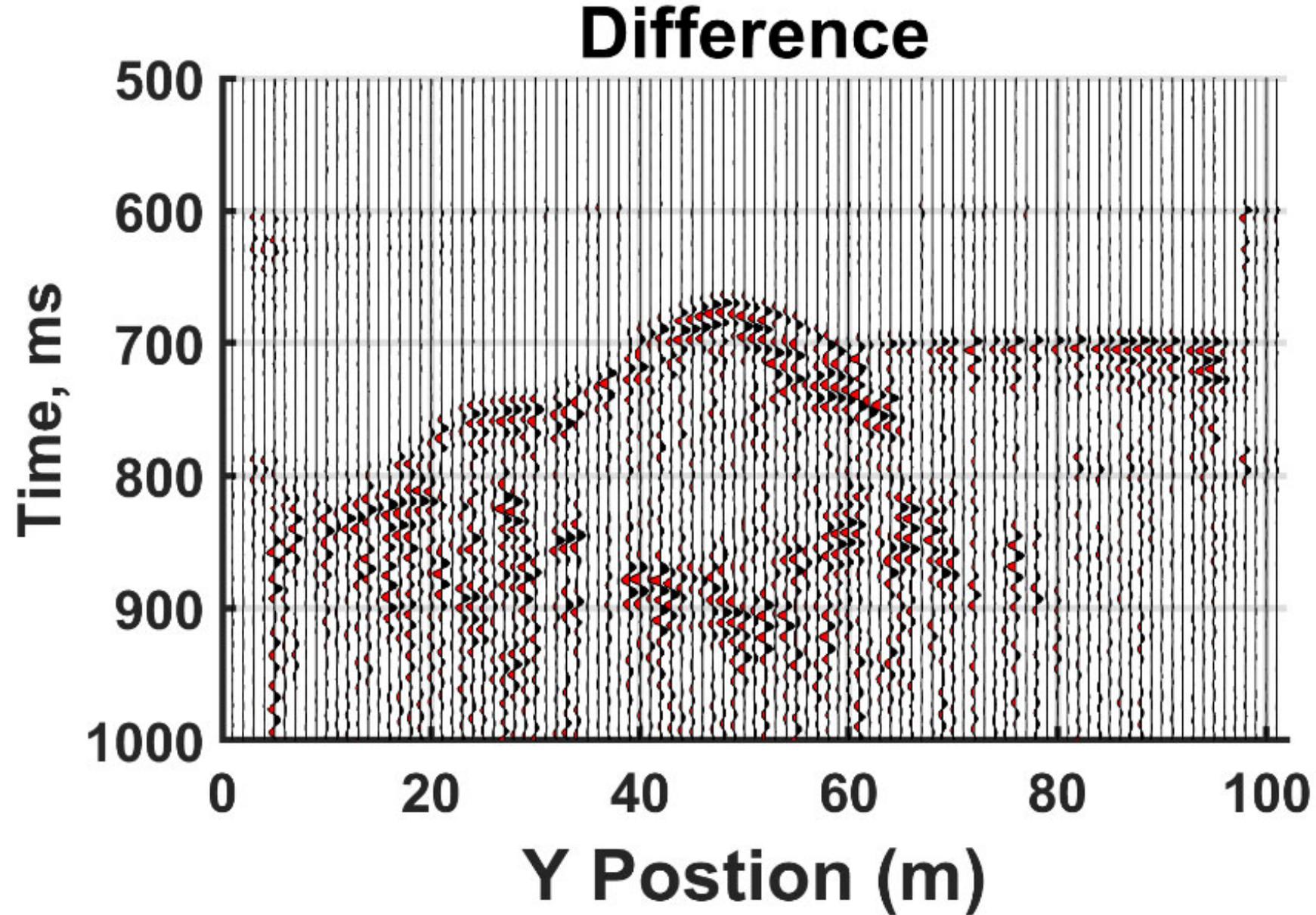


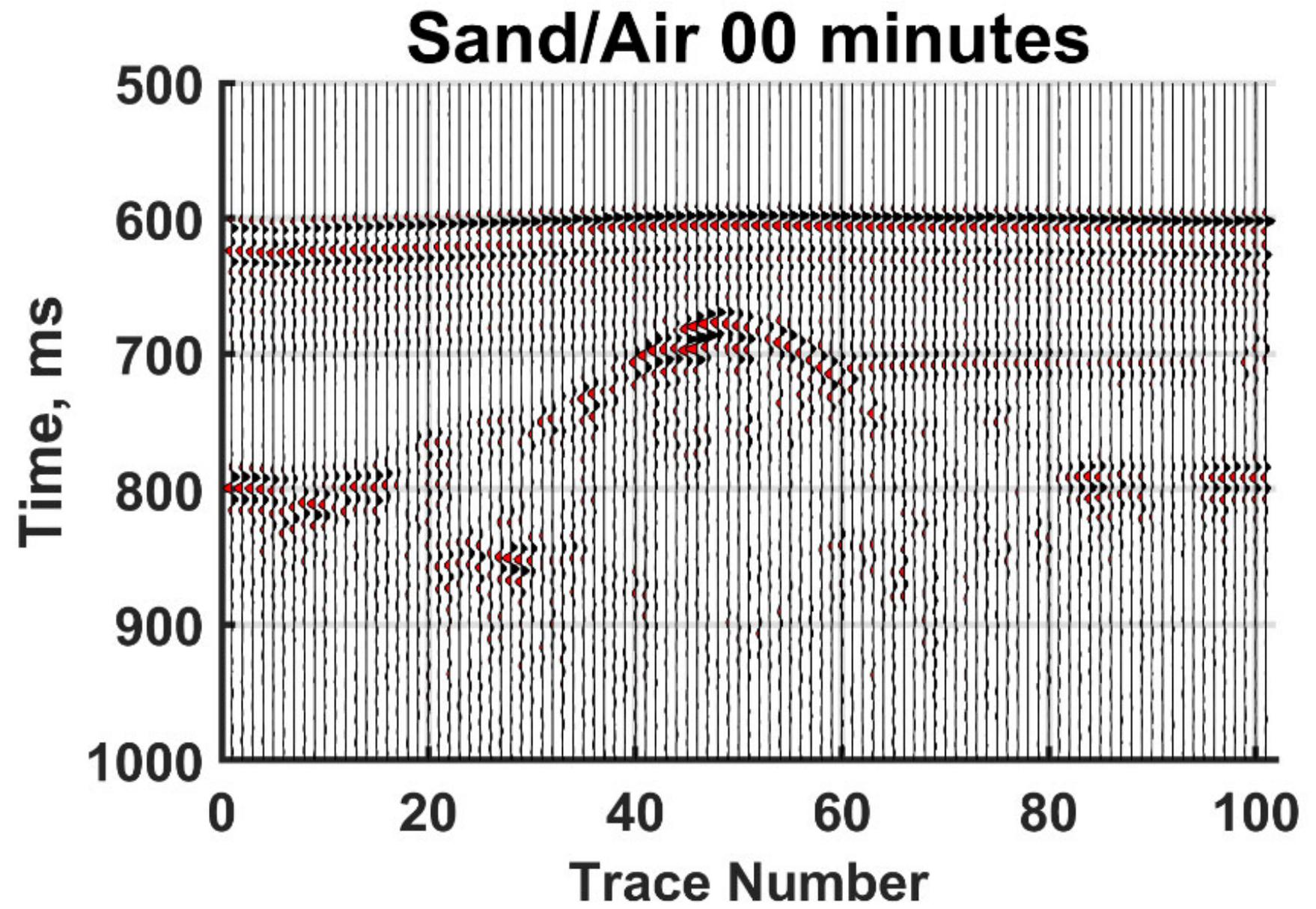


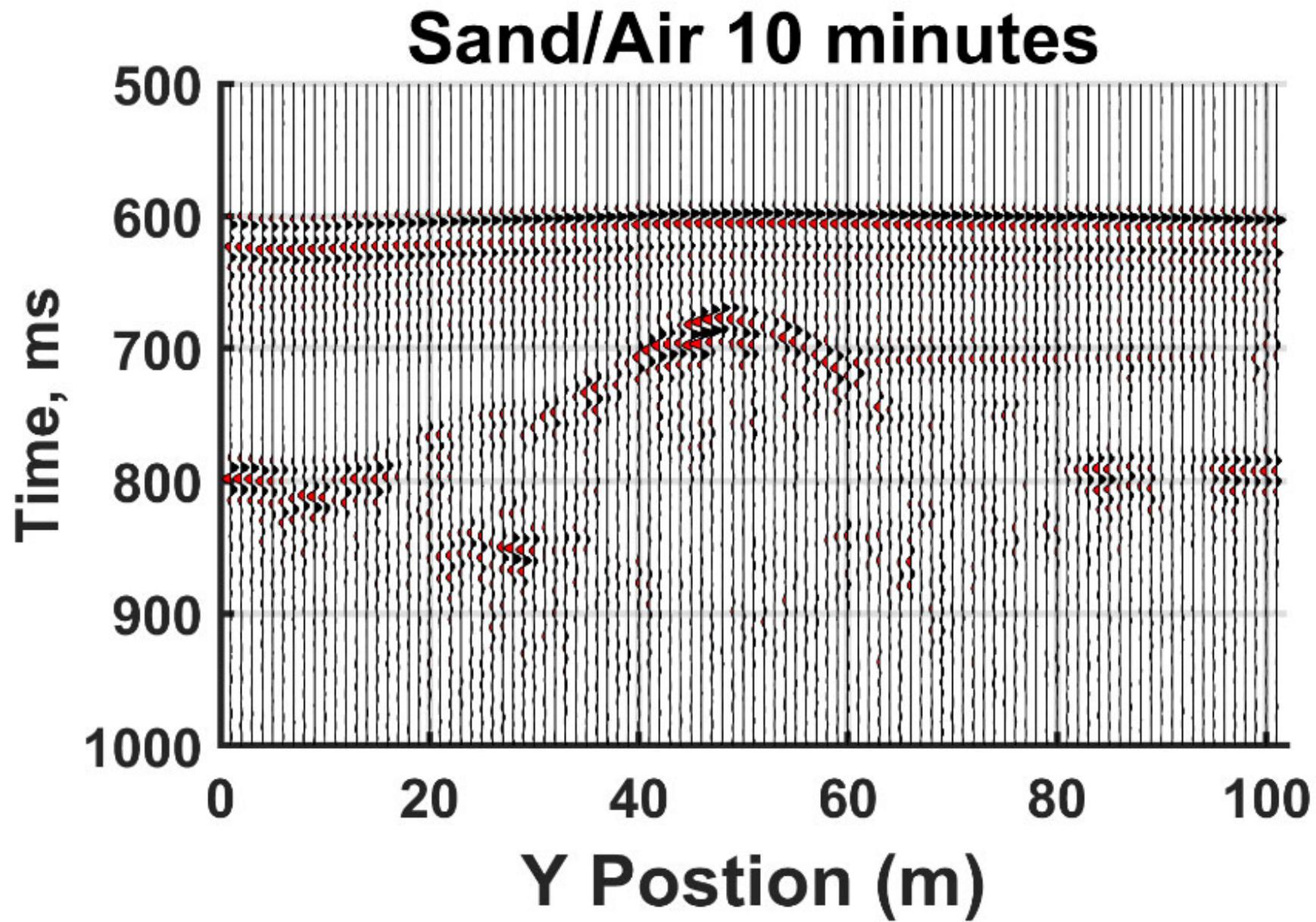
First porous media survey (water with some air)

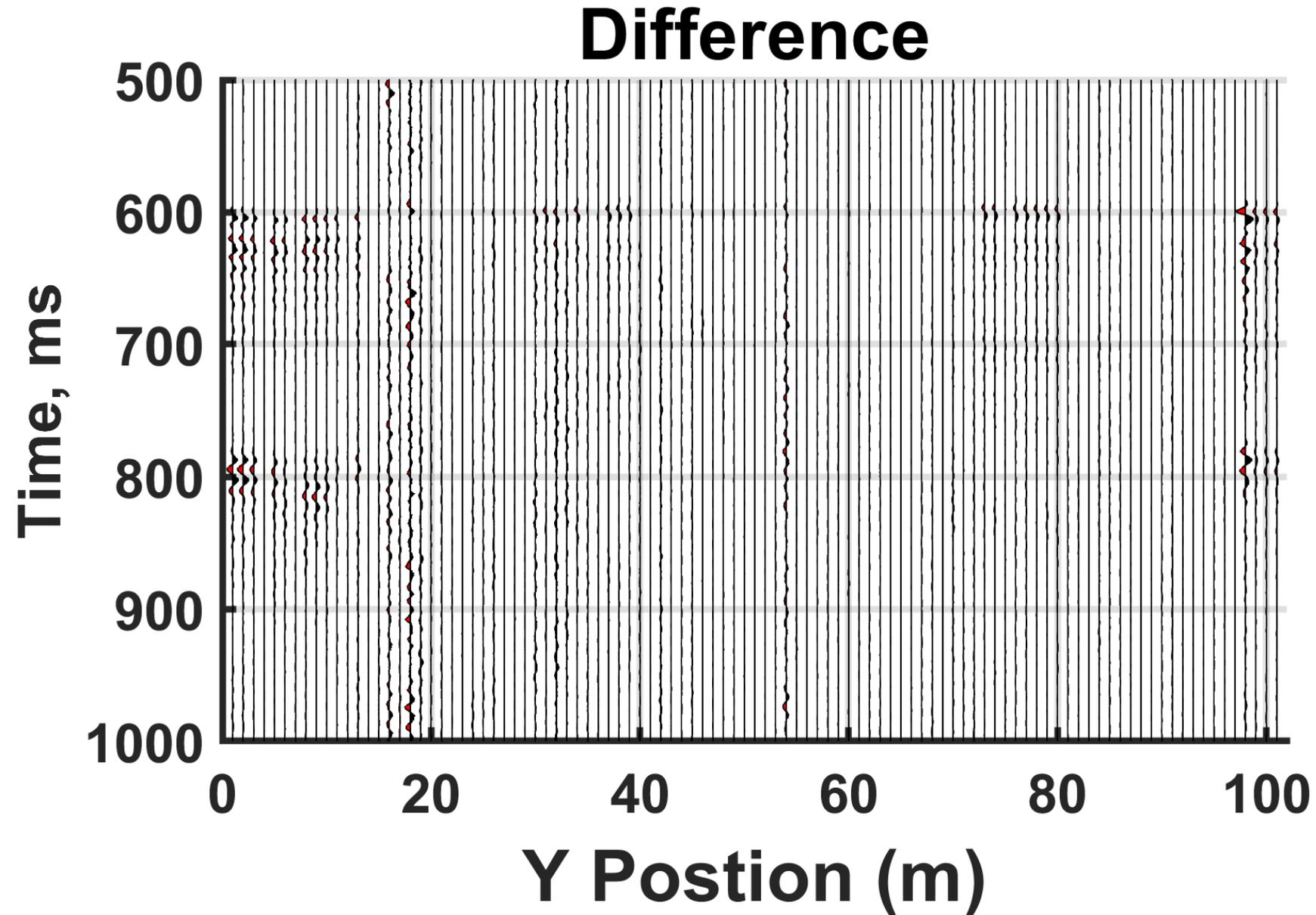














- 3D timelapse surveys
- VSP surveys
- More controlled injection methods
- Different materials in model
- Different injected media
- Models of different shapes



Thanks to:

CREWES Researchers

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