

# CREWES in the field: 2019 overview

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## ABSTRACT

Simulated data is useful for testing various processing methods, but there is still a huge advantage to using data acquired in the “real world”. CREWES has a long history of acquiring and processing field data. With access to several different acquisition tools and instruments several different experiments can be carried out. This year fieldwork acquisition was exclusively done at the CaMI FRS.

Projects that CREWES has been involved with this year include: a) the setup of several passive monitoring three component recording stations; b) an acquisition experiment with a repeatable source location before, during, and after carbon dioxide injection into an underground reservoir; c) the 2019 Geophysics Undergraduate Field School with the University of Calgary’s Geoscience Department; d) the setup of repeatable source locations for a walk-away/walk-around VSP.

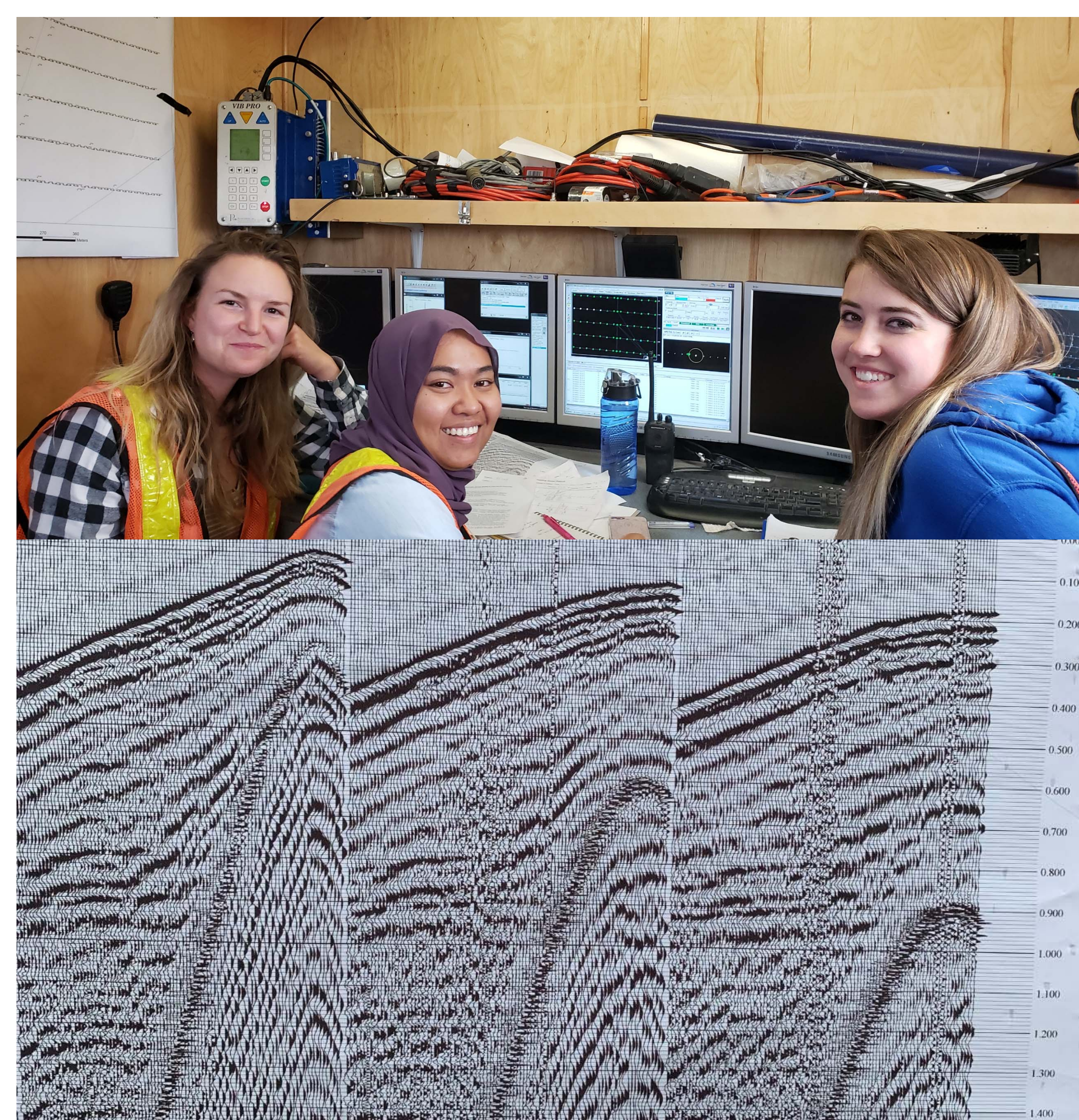
## EARTH SCIENCE FOR SOCIETY



Each year CREWES brings a line truck filled with some of the tools used in acquisition. There is a ground penetrating radar cart, a seismometer, a three component geophone and a beam with sixty geophones connected to Geodes with a live display on a laptop.

## FIELD SCHOOL

The University of Calgary remains one of the few, if not only, post secondary education facility with access to industry grade geophysics acquisition equipment. This offers a tremendous advantage for graduates of the geophysics program in that they have exposure and experience with how data is acquired. This provides them with an understanding of how real world situations can affect the data that they are looking at.



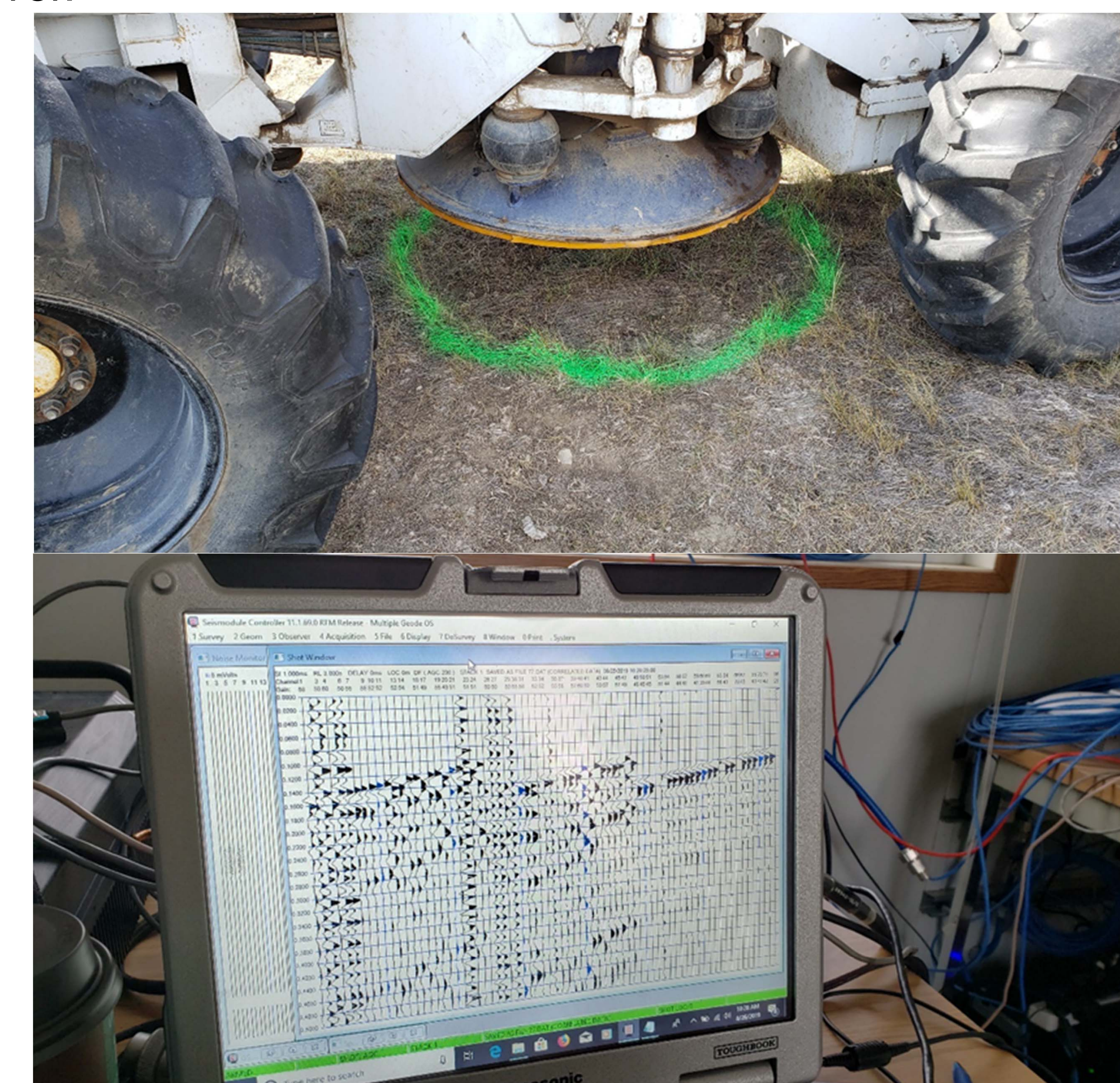
## PASSIVE MONITORING AT FRS

CREWES aided in the setup, transport, deployment, and data collection of three component receivers at FRS. The receivers used were analog geophones connect to the Inova Hawk nodal system.



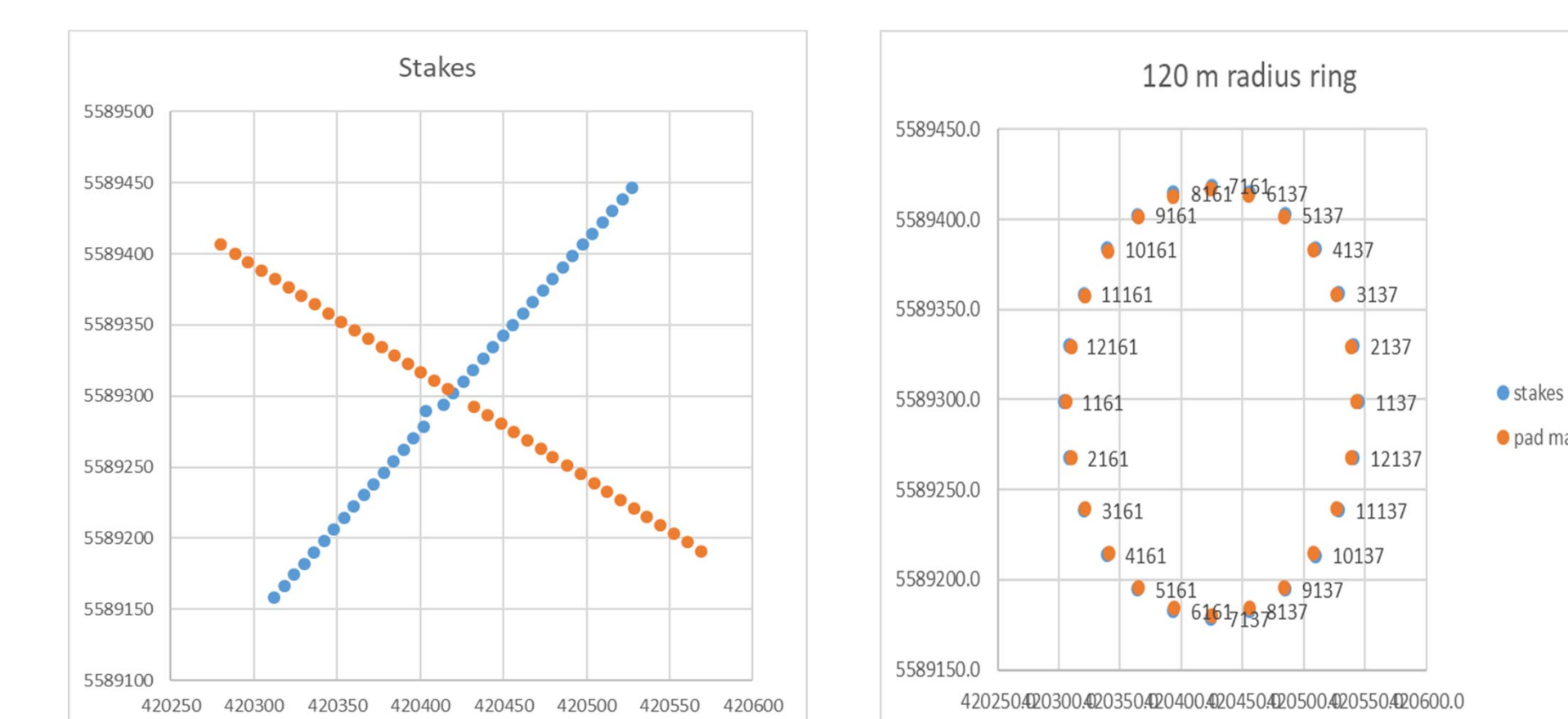
## TIMELAPSE DURING CO<sub>2</sub> INJECTION

Based on a previous experiment where microbubbles in water affected seismic data an experiment nick named “Tiny Bubbles” was carried out (Innanen et. al. 2019). This experiment required that the source and receivers be stationary throughout. A location was picked for the source and the Envirovibe was parked over it. Once the pad was lowered it wasn’t raised again until the experiment was over.



## SETUP OF A REPEATABLE VSP SURVEY

With the permanent installation of a geophysics test well there is a desire to be able to run a repeatable walk away/walk around VSP. This would allow tests to be carried out to compare different DAS interrogators using the fibre down the well. Two source lines that intersect on the well were flagged by pounding lath into the ground. A circle around the well at a distance of 120 metres with ten degree spacing was also marked out.



## ACKNOWLEDGMENTS

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