

CREWES in the field

Malcolm B. Bertram, Kevin L. Bertram, Kevin W. Hall, Eric V. Gallant

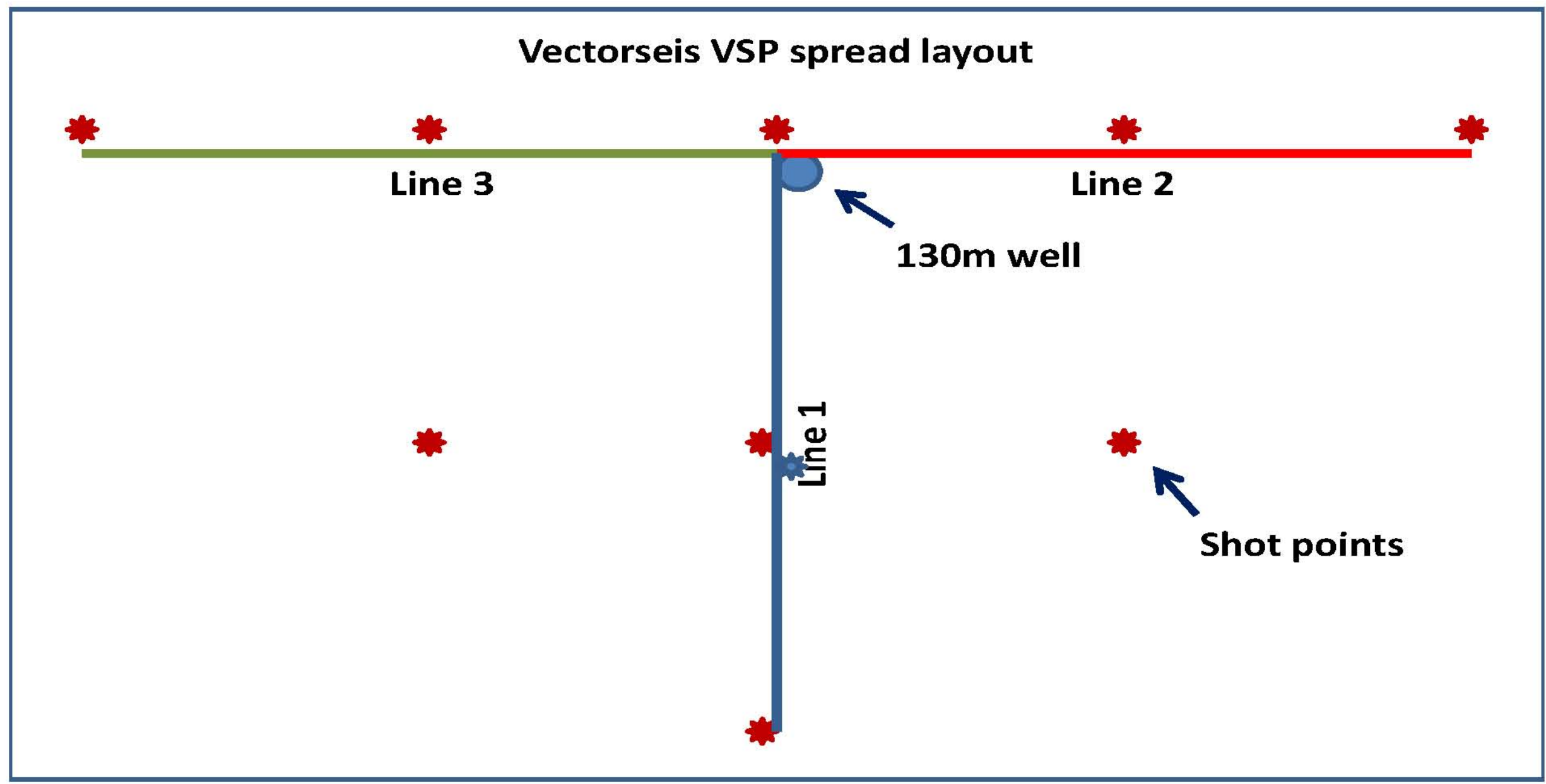
ABSTRACT

In 2010 CRFEWES was involved in a number of field projects. Covered here are four of them.

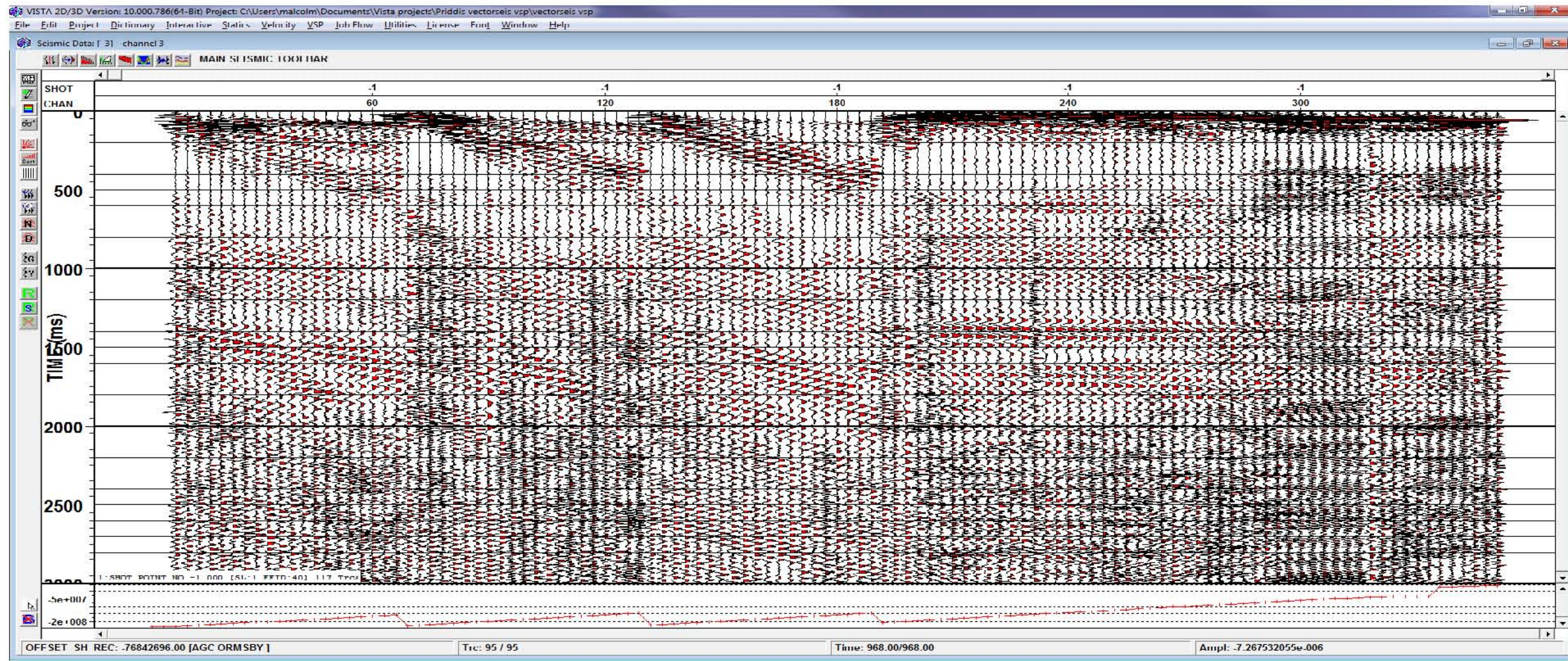
VECTORSEIS VSP TOOL TESTS

This was shot in December 2009, and was the first field test of a VSP tool developed by High-Definition Seismic Corporation. This tool uses Vectorseis MEMS devices as the sensors, so requires a dry hole. The sensor spacing can be set to any desired distance – in this survey the spacing was 2m.

The tool was deployed in the 130m deep well at the University of Calgary Rothney Astrophysical Observatory near Priddis, Alberta. As well as the down hole array, a surface spread was also set up to provide some comparison and control for data analysis. The layout of the project is shown below



Layout of the survey at Priddis

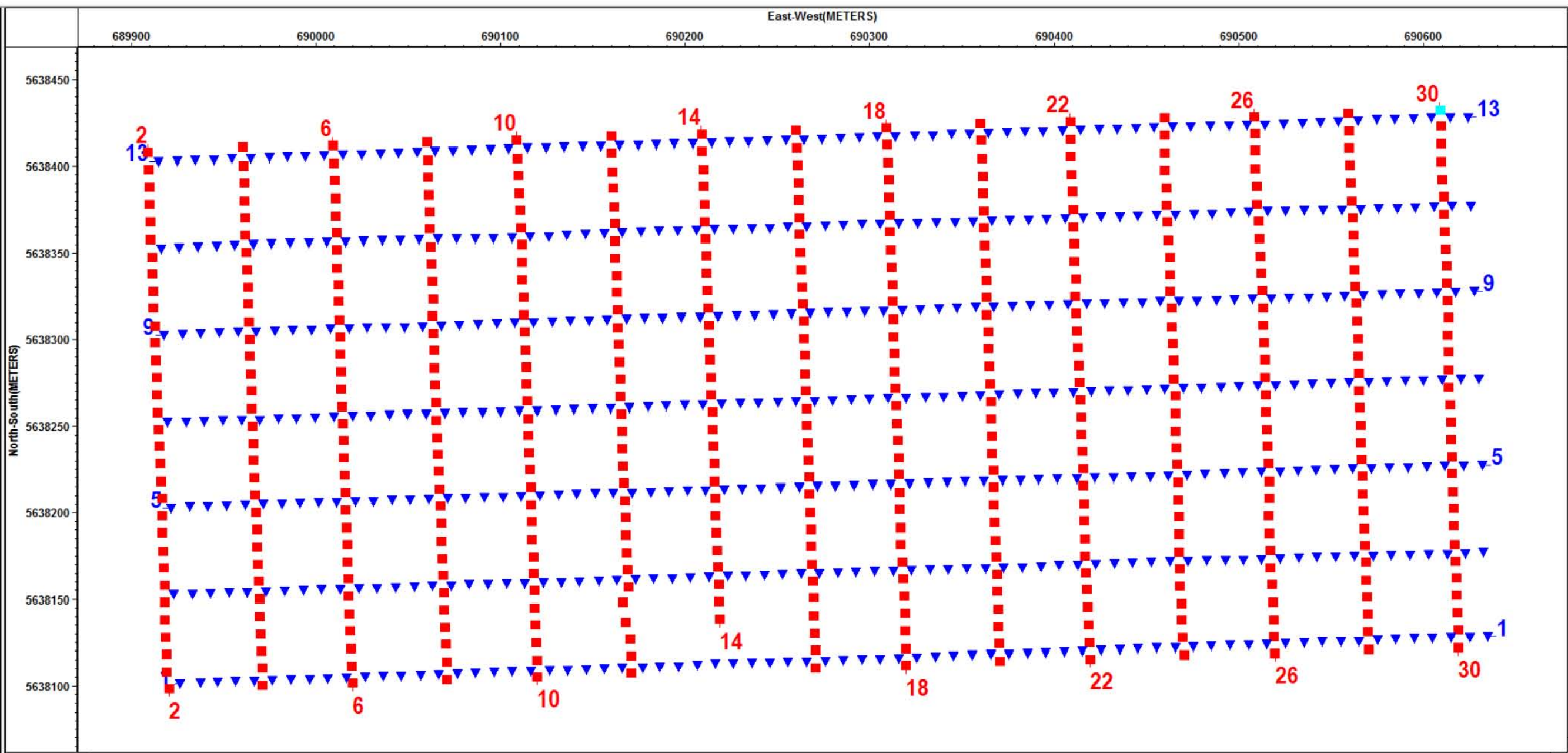


Shot gather from the survey

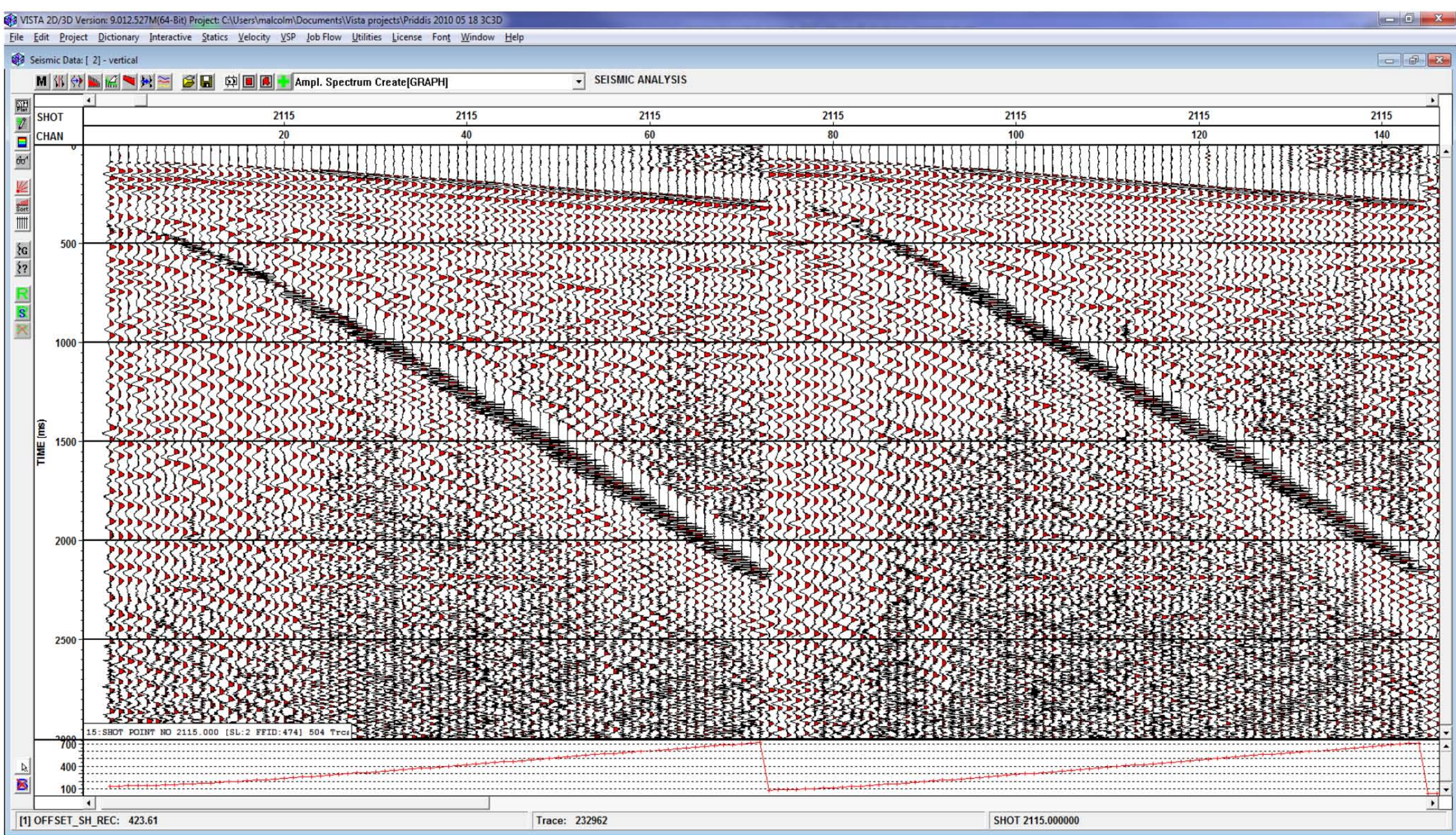


3D 3C PRIDDIS SURVEY, MARCH 2010

In March 2010, CREWES undertook a 3D 3C project at the Priddis test site. Seven lines each with 72 SM7 3C geophones were laid out, and 15 shot lines were run perpendicular to these. On both shot and receiver lines the flag spacing was 10m with 50m between lines. The U of C EnviroVibe was the source for the survey, with 4 20 second linear sweeps from 10 to 200 Hz. The purpose of the survey was to better define the shallow structure at this location for future development as a CO2 sequestration project.



The layout of the survey. Receivers blue, shots red

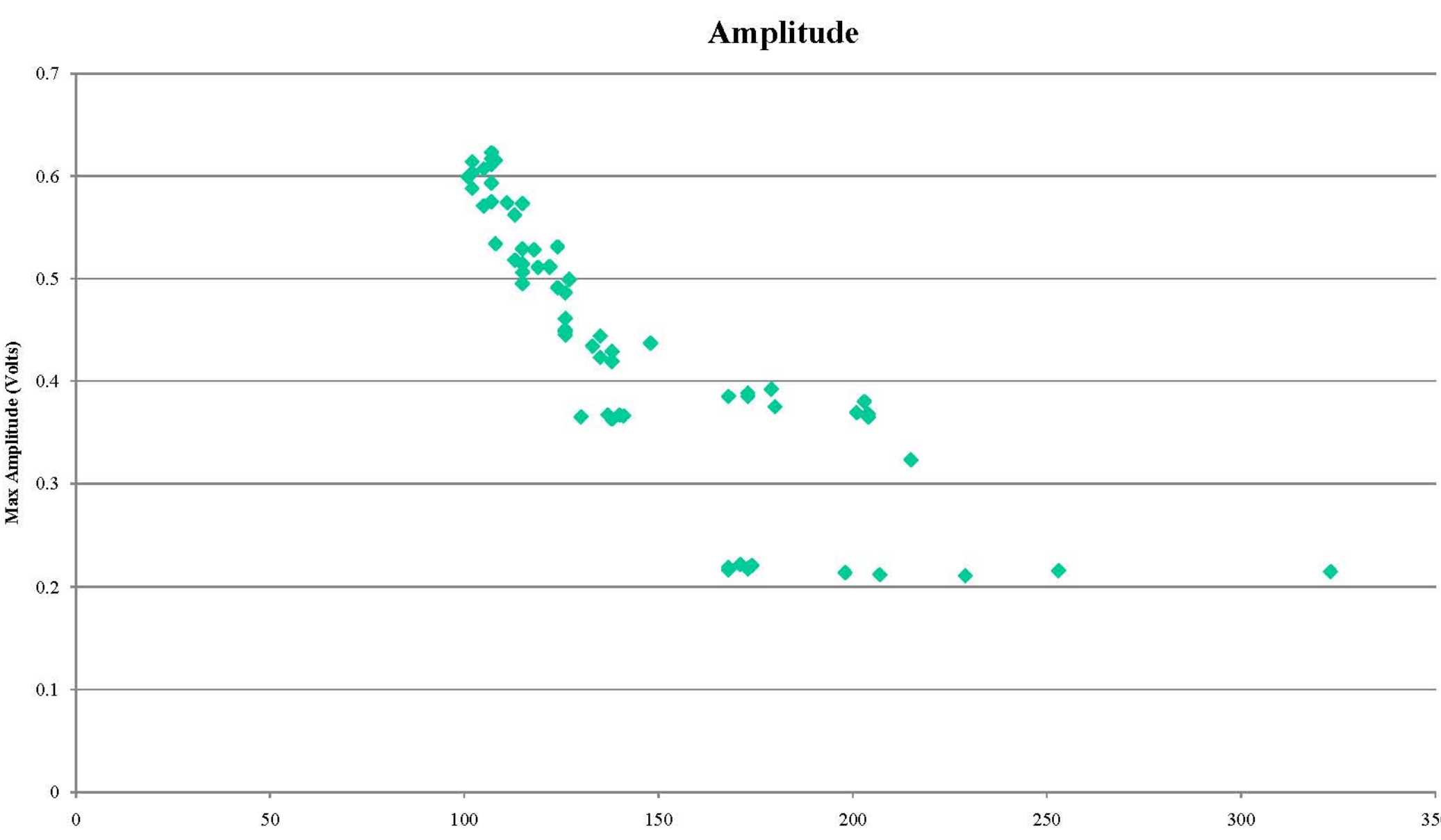


Some data from the survey

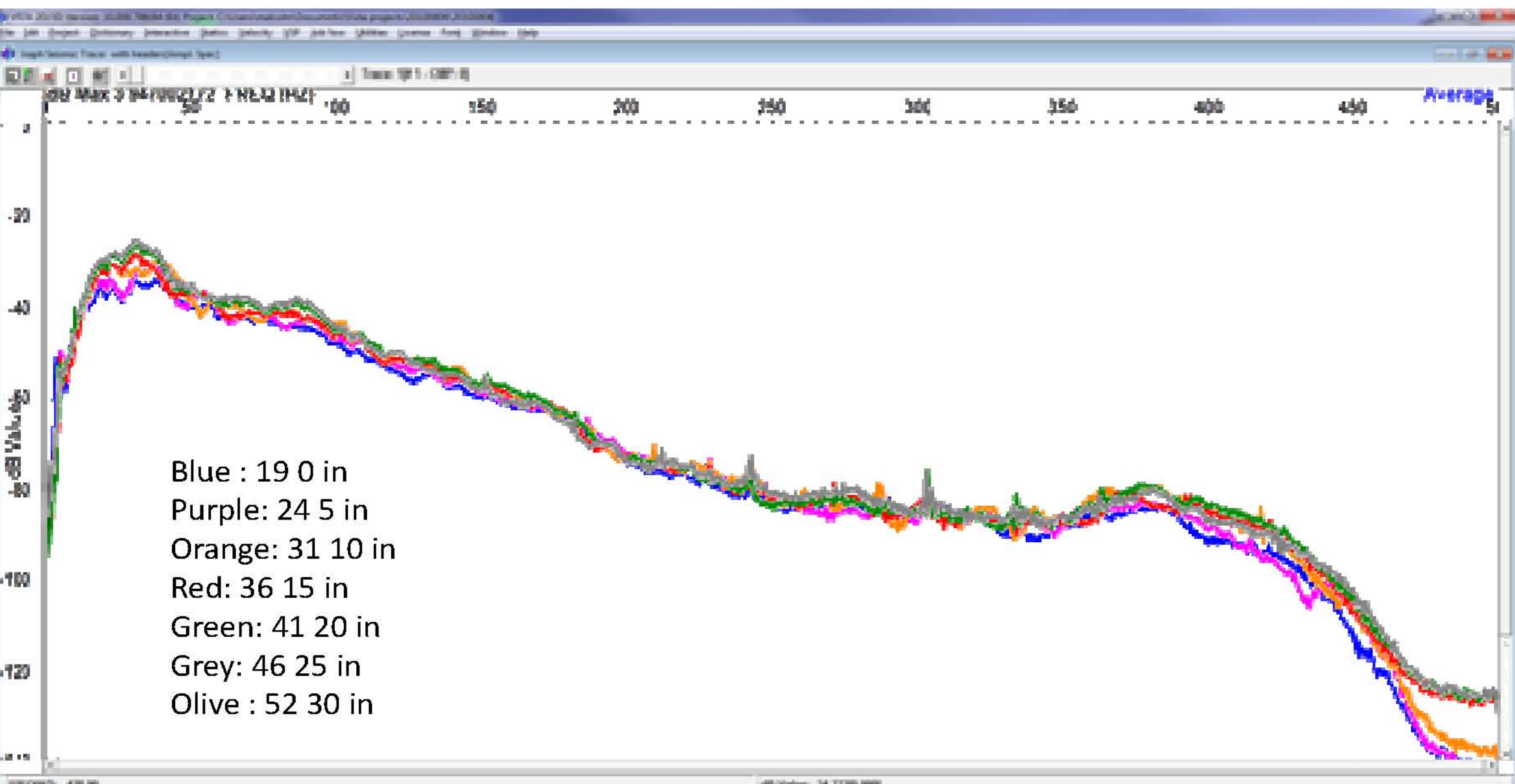


THUMPER TESTS, AUGUST 2010

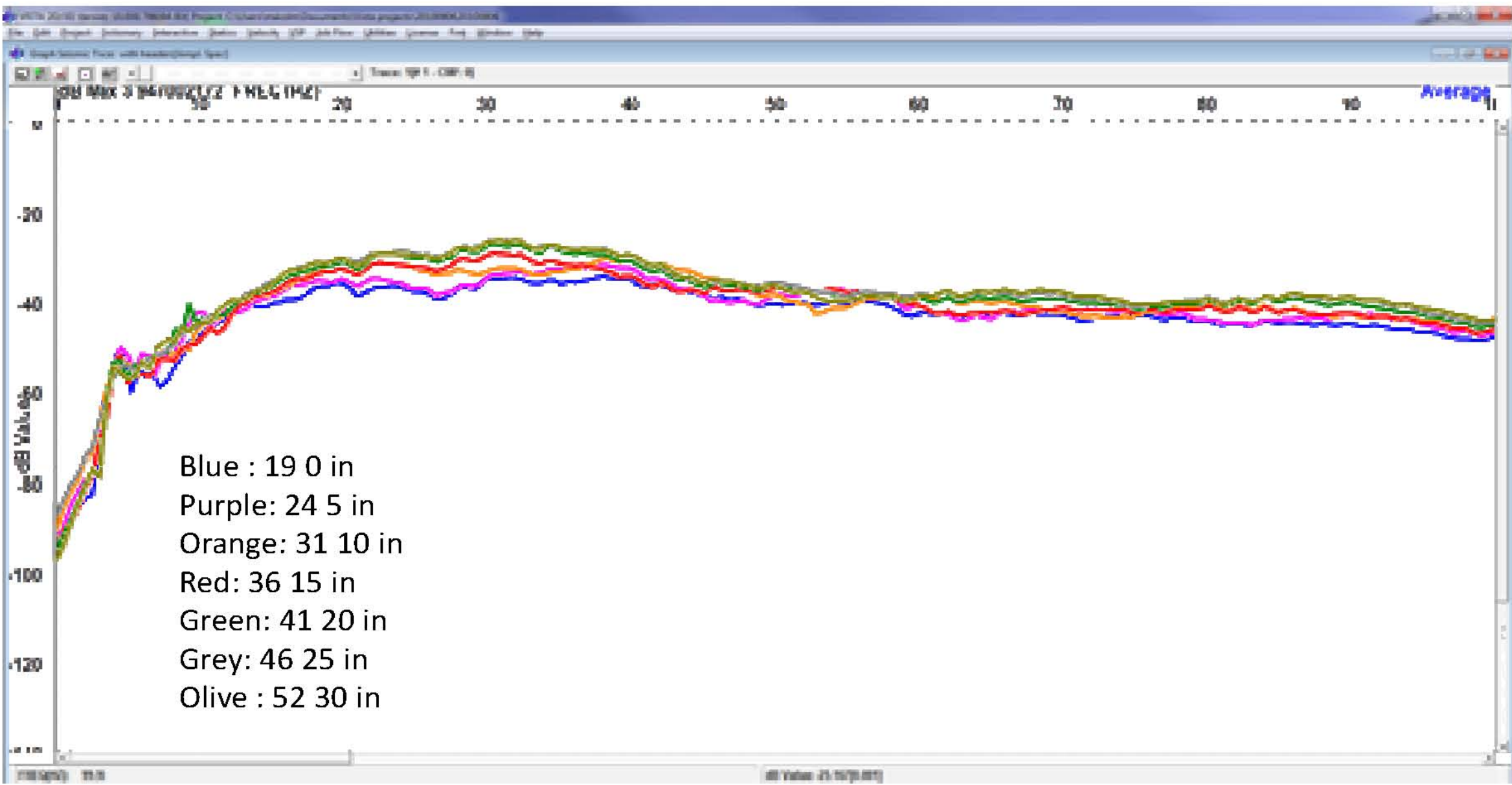
A quick test run was performed on the University of Calgary campus to try to determine the changes in spectral output from the thumper as the elastic band tension was increased. Results were disappointing, with hardly any change at all.



Cross plot of drop time vs amplitude



Spectra for different tensions

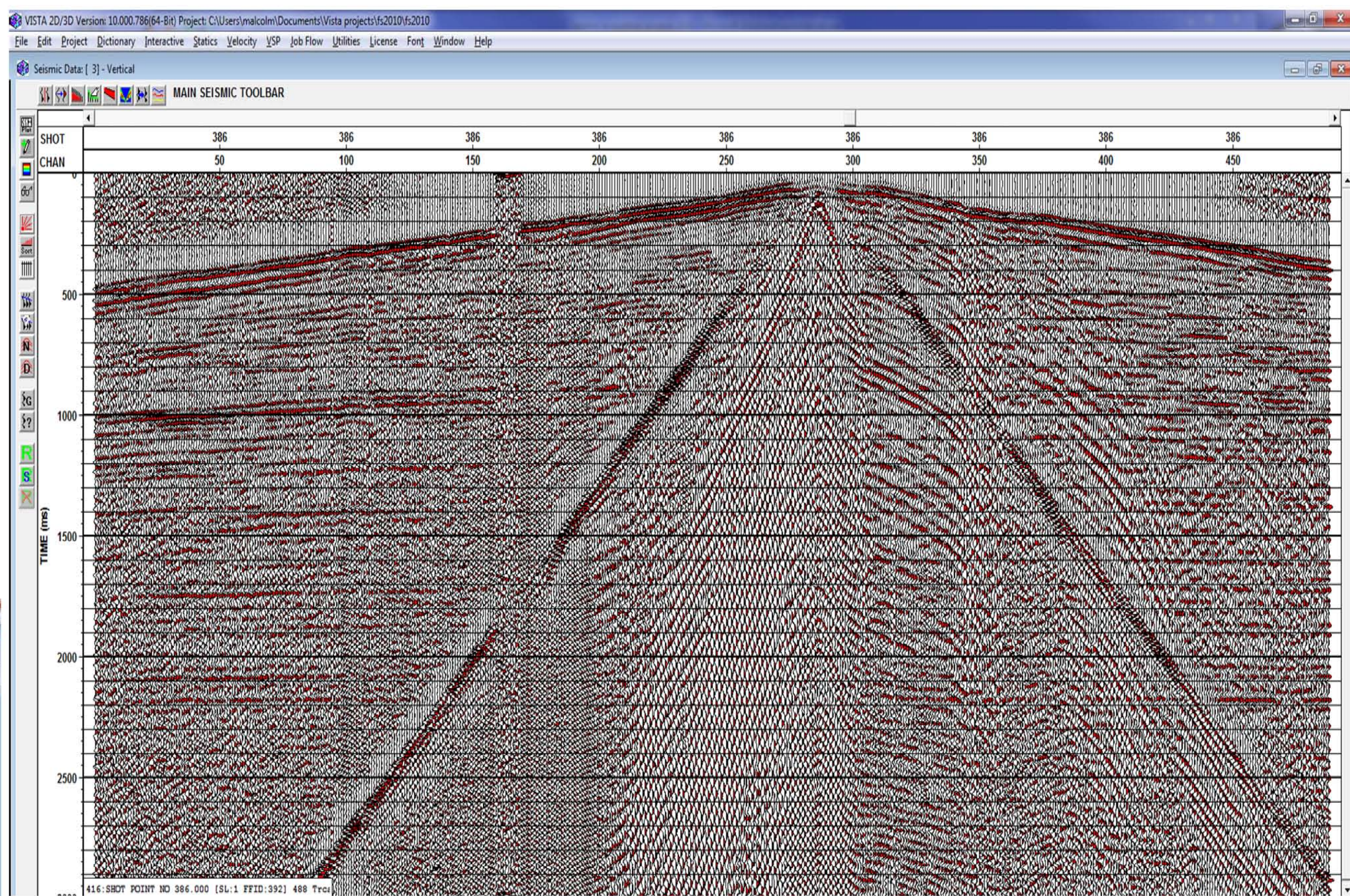


Spectra for different tensions zoomed

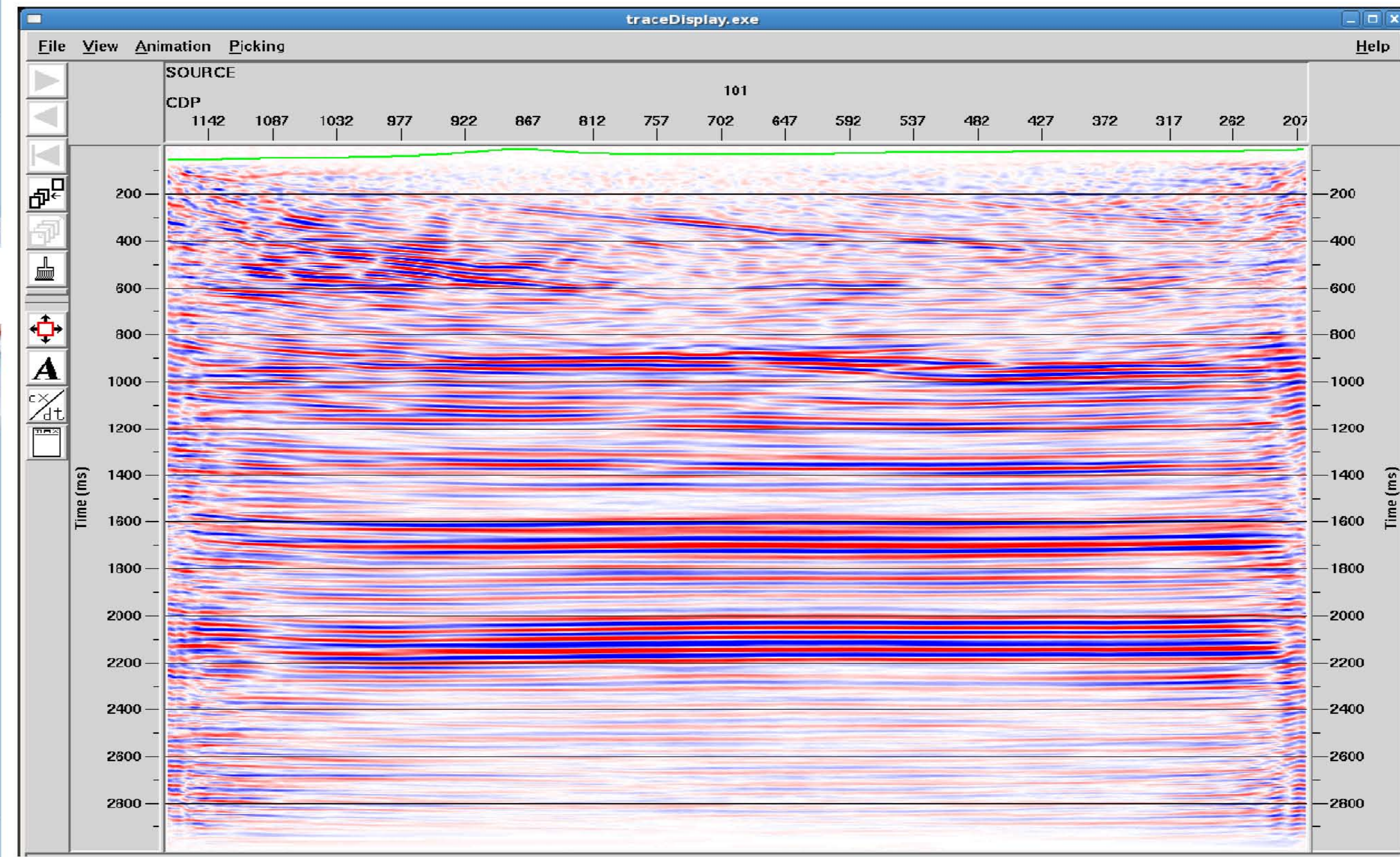


FIELD SCHOOL, SEPTEMBER 2010

Field school for the undergraduate GOPH549 course was carried out along a road allowance just south of the Priddis observatory property. The line was shot as a 3 component line, with group spacing of 5m and shots between flags. The U of C EnviroVibe was again the source for this survey, with 4 20 second linear sweeps of 10-200Hz.



A shot gather from the Field School line



Processed section from the Field School line

