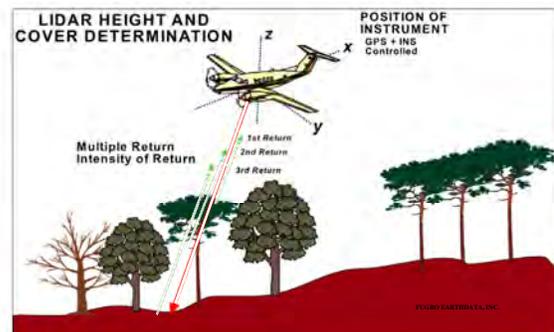
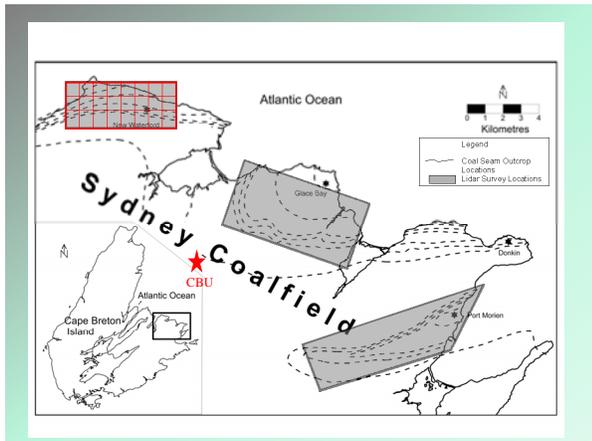
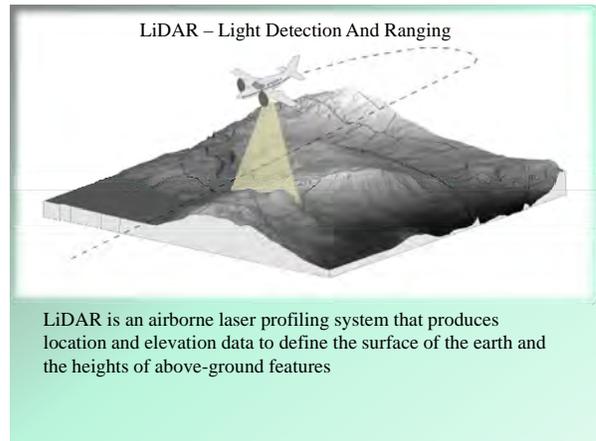
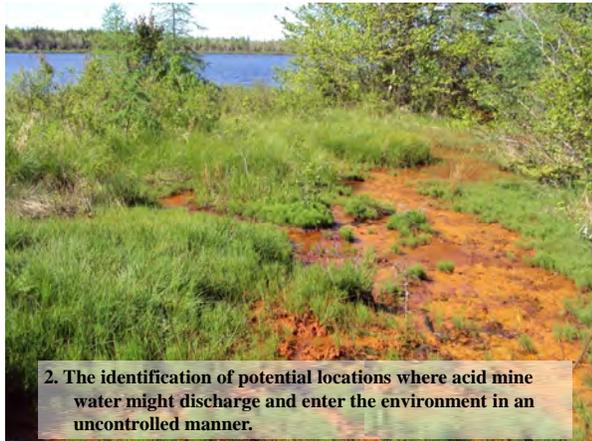


1. The identification of unstable ground and mine openings that could potentially fail during and after site remediation; and



In this example, the first return measurement is a range value of the tree top; the last return is the ground. By acquiring first- and last-pulse data simultaneously, it is possible to measure both tree heights and the topography of the ground.

**Data Validation Method**

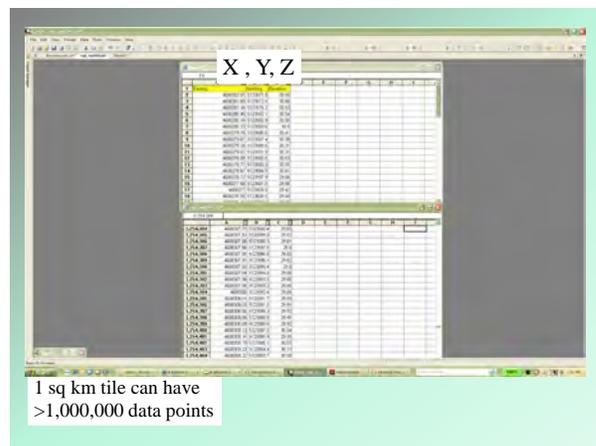


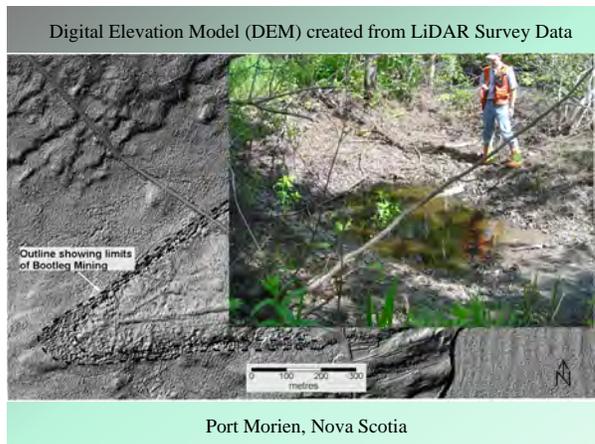
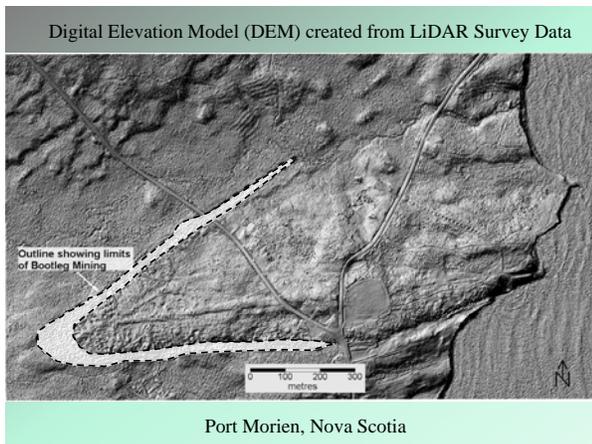
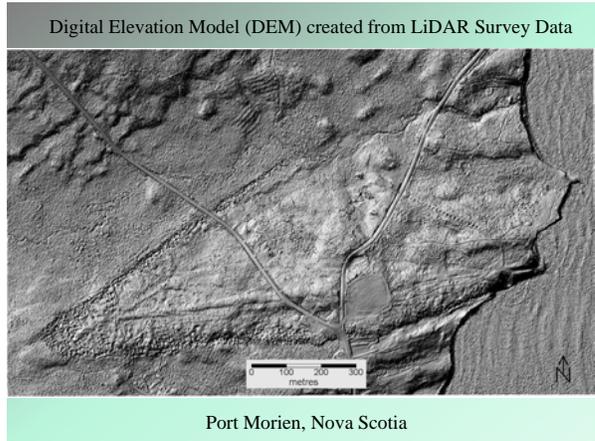
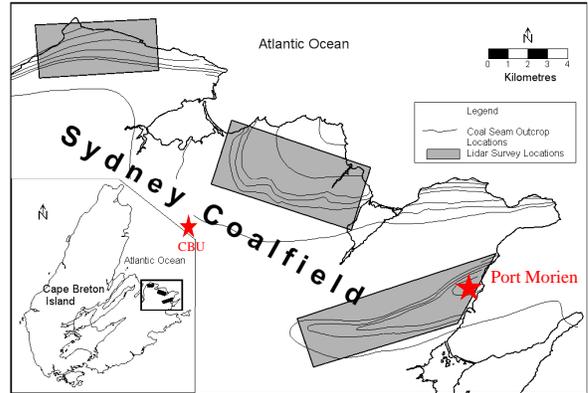
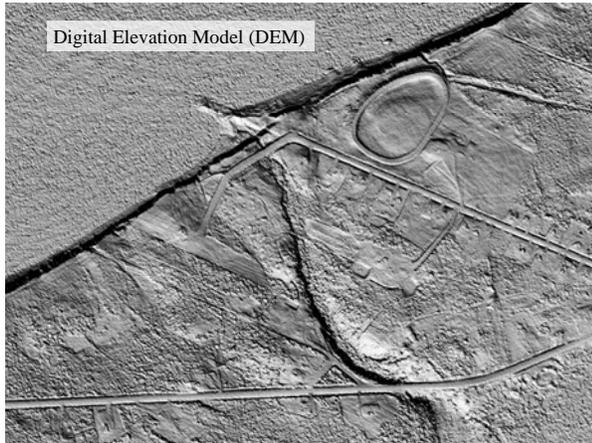
Base station set up at the Sydney Airport (left) and in New Victoria (right)

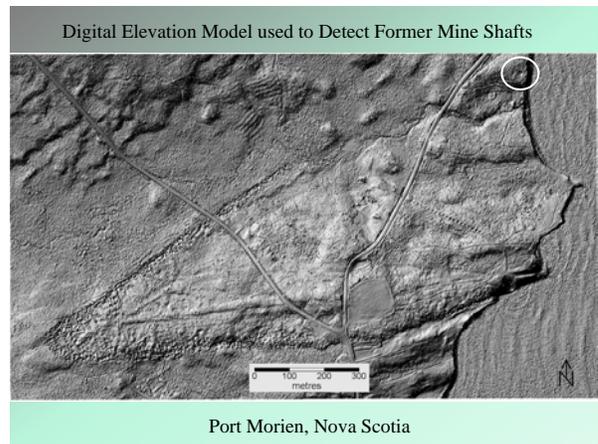
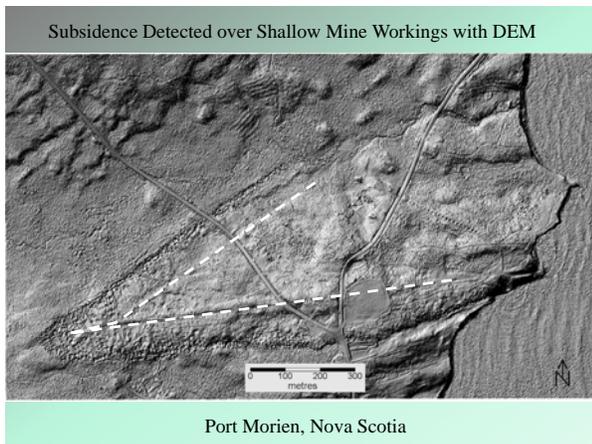
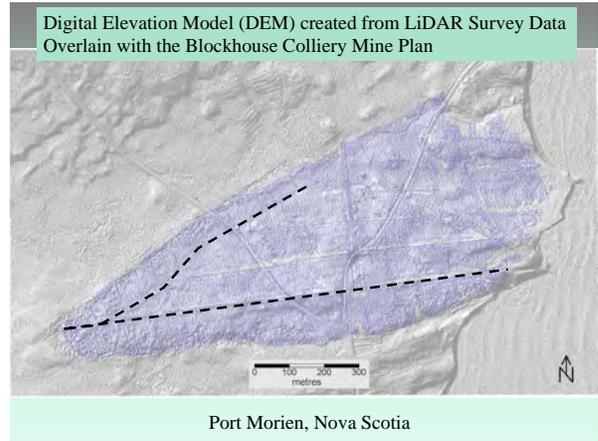
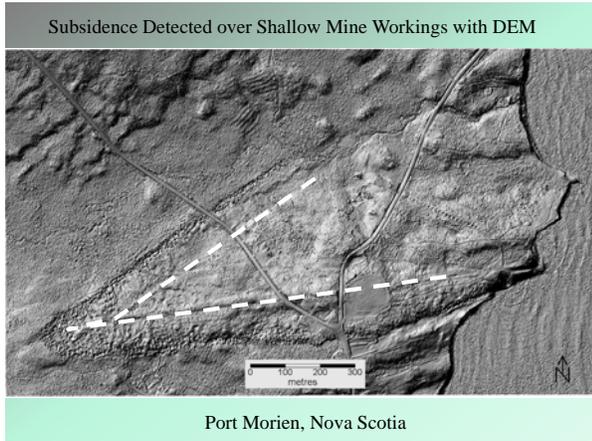
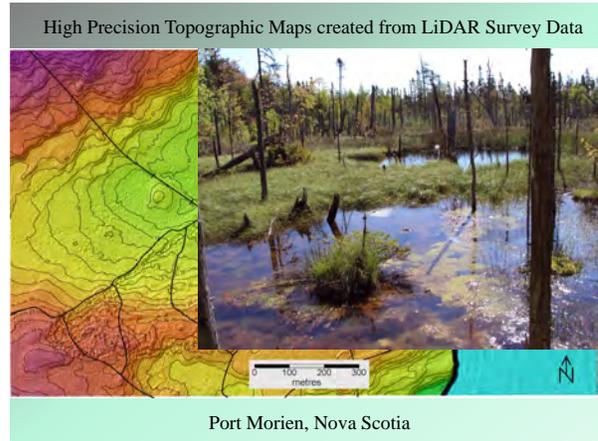
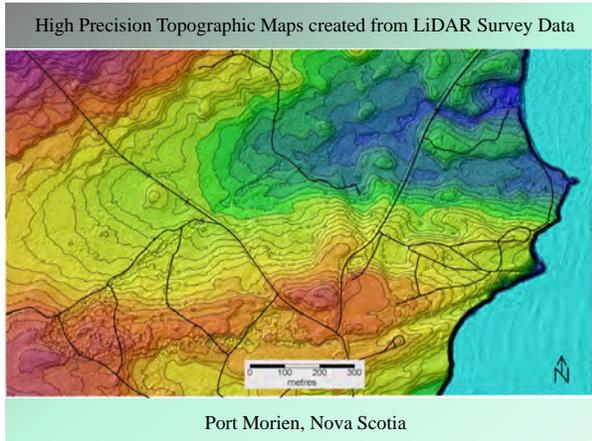


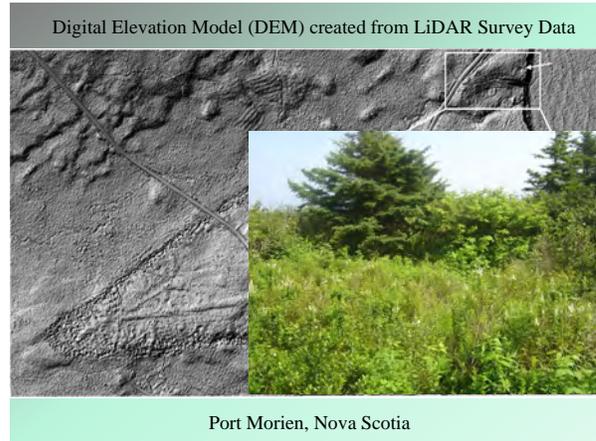
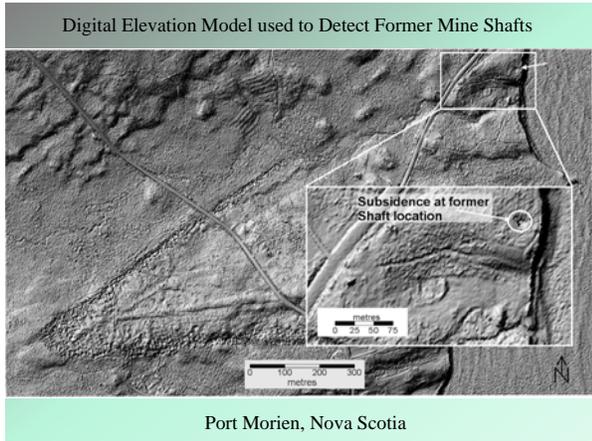
GPS antennae and radio mounted on the vehicle.

Survey showed a mean difference of 0.02m with a standard deviation of 0.04m between the Ground Survey and LiDAR Survey









QUESTOGA-ROVERS & ASSOCIATES

## Questions?

Glenn MacLeod

WORLDWIDE ENGINEERING, ENVIRONMENTAL, CONSTRUCTION & IT SERVICES

## Innovative Uses of LIDAR Technology to Assist in the Remediation of former Coal Mine Sites

Glenn MacLeod

Questions?

QUESTOGA-ROVERS & ASSOCIATES

## Remediation Concerns

Two of the concerns are:

- 1) The identification of unstable ground and mine openings that could potentially fail during and after site remediation; and
- 2) The identification of potential locations where acid mine water might discharge and enter the environment in an uncontrolled manner.

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