# **CaMI MONITORING FIELD RESEARCH STATION**





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# FIELD RESEARCH STATION (FRS)

The Field Research Station (FRS) is a collaborative platform between CaMI and the University of Calgary for the development and performance validation of technologies intended for measurement, monitoring and containment verification of subsurface fluids, including carbon dioxide.





# **CANADA'S GHG EMISSIONS REDUCTION WEDGES**



# **REGULATORY REVIEW**

### **Regulatory review recommendation is that**



## **CaMI FIELD RESEARCH STATION OBJECTIVES**

- Undertake controlled CO<sub>2</sub> release at 300 m & 500 m depth; ~1000 t/yr.
- **Develop improved monitoring** technologies.



Measurement, Monitoring and Verification for CO<sub>2</sub> storage closure plans be based on a projectspecific risk assessments, and use the best available technologies.









- **Determine CO<sub>2</sub> detection thresholds.**
- Understand fate of methane in aquifers.
- **Provide quantitative monitoring** protocols to regulators & industry.
- **Accelerate public outreach &** education about CCS.
- **Provide on-site fuel cell for CO<sub>2</sub> and** natural gas; energy storage.





P-wave and S-wave seismic volumes from the FRS

## CaMI-FRS LAYOUT & MONITORING TECHNOLOGIES/SURVEYS

- **3D-3C surface and VSP seismic surveys.**
- Well construction technologies.
- **Microseismic surveys.**
- Full logging suites & core analysis.
- Fiber-optic monitoring technologies.
- Geomechanics analysis.
- **Geochemical sampling/tracers.**
- Groundwater monitoring surveys.
- Environmental geophysical surveys.
- Casing gas, soil & atmospheric surveys.
- Tiltmeters & DGPS surveys.
- InSAR imaging and interpretation.
- Fuel Cell for a CO<sub>2</sub> supply and clean



## **Results will have other containment & monitoring applications, including:**

- Steam chamber growth and containment in oils sands production.
- Tertiary/enhanced petroleum recovery.
- Characterization of induced hydraulic and natural fractures.
- Groundwater protection.
- New or legacy well construction/abandonment issues.
- Fugitive emissions and shallow gas migration.
- Acid gas or other fluid disposal.
- Induced seismicity risk analysis and mitigation.

# HQP AND TRAINING OPPORTUNITIES



The FRS will provide hands-on field training in monitoring and measurement technologies for:

- University students
- Technical institute students
- Industry professionals

#### power demonstration.



For subscription information to join the CaMI Field Research Station project, please contact Dr. Don Lawton, don.lawton@cmcghg.com or 403-861-3065

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