Introduction of Oxygen Bubbles into Saturated Specimen

NSF Project: Liquefaction Mitigation Using Entrapped Air (Award #: CMS-0509894)
Introduction of bubbles into saturated specimen

Injection – Extraction technique under room temperature

Set up picture

Fully Saturated Specimen

Extraction Tube

Injection Tube

Fully Saturated Specimen
Introduction of bubbles into saturated specimen

Injection – Extraction technique under room temperature

**Sketch of the set up**

- **Injection**
- **Extraction**
- **Fabric Filter**
- **Gravel Filter**
- **Collection Jar**

- Specimen Height = 16 cm
- Lateral Gradient = 3.25 cm

Dimensions:
- 40 cm
- 8 cm
Introduction of bubbles into saturated specimen

Injection – Extraction technique under room temperature

During the I-E procedure

Dissolved Efferdent in Injection Tube

Fully Saturated Specimen
Introduction of bubbles into saturated specimen

Close-up image of the specimen

Barely seen bubbles and the influence distance was only 20 cm in lateral direction
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Injection – Extraction technique under 0°C temperature

Set up picture

During the I-E procedure

Efferdent water solution right after the experiment started
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Close-up image of the specimen

Bubble concentration was higher in the specimen.
Introduction of bubbles into saturated specimen

Partially saturated zone, after waiting at least overnight