

Biax Experiment (rev. 21 July 2015)

Exp. Name: P4581 GBS 5020802 Date/Time: 4/8/16

Operator: lv / Jack

Example name: PXXXXBttMatNN

Sample Block Thickness w/ no gouge:

- Steel 5x5 cm, \_\_\_\_\_ mm
- Titanium 5x5 cm, \_\_\_\_\_ mm
- Steel 10x10 cm, \_\_\_\_\_ mm
- Titanium 10x10 cm, \_\_\_\_\_ mm

- \_\_\_\_ Vessel (Small Single Direct)-Frits: \_\_\_\_\_
- \_\_\_\_ Vessel (Large Single Direct)
- \_\_\_\_ Vessel (5x5 Grooved)-Frits: \_\_\_\_\_
- Vessel Side Blocks: \_\_\_\_\_ Empty Block + frits: \_\_\_\_\_

For Current Calibrations see: ~barrels0\data/calibrations/MasterCalibrationsFile.xlsx

Vertical Load Cell:

- \_\_\_\_ 62mm hollow (18.363 mV/kN)
- 44mm solid "V" (10.786 mV/kN)
- \_\_\_\_ 22mm Vert. (0.7321 V/kN)

Horizontal Load Cell:

- \_\_\_\_ 62mm hollow (Low Gain: 18.722 mV/kN; High Gain: 184.014 mV/kN)
- 44mm solid "H" (Low Gain: 11.743 mV/kN; High Gain: 119.423w mV/kN)
- \_\_\_\_ 22mm Horiz. (0.7736 V/kN)

Layer Thickness (total on bench): 80.24 mm Under Load: \_\_\_\_\_ mm@sample

Material (Qtz, Granite, ?): Glass Beads

Particle Size, Size Distribution: 104 um - 148 um

Vert. Load Initial Voltage \_\_\_\_\_

Horz. Load Initial Voltage 4.8620

DPM readouts (kN)

Normal Stress(es): 2-8-2 (MPa)

Vertical @ Zero Load: 112

Voltage(s) at load: see additional paper.

Horizontal @ Zero Load: 4.8

Calibration(V/MPa): 1.1942363

Vessel Pressure:

Pore Fluid: \_\_\_\_\_

\*(0.1461 V/MPa) Pore Pressure A: \_\_\_\_\_ Initial Voltage: \_\_\_\_\_ Voltage at load: \_\_\_\_\_

High gain: 1.4702 V/MPa Gain: High/Low

\*(0.1460 V/MPa) Pore Pressure B: \_\_\_\_\_ Initial Voltage: \_\_\_\_\_ Voltage at load: \_\_\_\_\_

High gain: 1.4743 V/MPa Gain: High/Low

(0.1471 V/MPa) Confining Pressure: \_\_\_\_\_ Initial Voltage: \_\_\_\_\_ Voltage at load: \_\_\_\_\_

\*Calibration reflects current location of pressure transducer (A is on B and vice versa)

(0.412 V/kPa) Differential Press: \_\_\_\_\_ Initial Voltage: \_\_\_\_\_ Voltage at load: \_\_\_\_\_

Data Logger Used: Schannel \_\_\_\_\_ Control File Attached

Horz. DCDT:  Long rod  Short rod Vert. DCDT:  Transtek 2" Gain:  High  Low

Transtek 1" Gain:  High  Low

Purpose/Description: Reproduce p 2394  
Run Vert 10mm/s for ~~300s~~ then change to 5 mm/s for normal stress 2-8-2

Temperature (°C): 21.3

Relative Humidity (%): 21.6

④ @ Hyd. Power Supply

Tank Temp (°C): \_\_\_\_\_

Temp In (°F): \_\_\_\_\_

Pres. In (psi): \_\_\_\_\_

Temp Out (°F): \_\_\_\_\_

Pres. Out (psi): \_\_\_\_\_

Flow (lpm): \_\_\_\_\_

@ Chiller

Panel Temp (°F): \_\_\_\_\_ Temp In (°F): \_\_\_\_\_

Panel Pres. (psi): \_\_\_\_\_ Pres. In (psi): \_\_\_\_\_

Near Pres. In (psi): \_\_\_\_\_ Out Temp (°F): \_\_\_\_\_

Near Pres. Out (psi): \_\_\_\_\_ Out Pres. (psi): \_\_\_\_\_

Rec

~~0-360 Horiz Load DAC offset~~

150 reset Horiz DAC

260 Horiz Load to 2MPa.

4612 change to 100 Hz

70612 Run DAC @ 10  $\mu\text{m/s}$

310612 stop ~~vert~~ vert running

385612 start DAC @ 5  $\mu\text{m/s}$ .

3428612 stop DAC / 3478612 change to 1 Hz

3478735 pull back Vert piston

Mass

LAYER 2:

$$543.91 - 454.33 = 89.58 \text{ g}$$

LAYER 1:

$$454.33 - 364.90 = 89.43 \text{ g}$$

Acoustic Emission  
Similar to p4579  
and p4580

P4581

	$\Delta V$	Target	$\sigma$ (Mpa)	Rec # Start changing.	Rec # (finish change)
J min.	2.38846726	-2.47733	2		
J min	1.19423363	-1.283094	3	678612	708612
J min.		-0.08886	4	918612	948612
J min		1.1053735	5	1278612	1308612
J min		2.299607	6	1578612	1608612
J min		3.4938408	7	1878612	1908612
J min.		4.6880744	8	2178612	2208612
200s.		3.4938408	7	2478612	2508612
200s.		2.299607	6	2678612	2708612
200s		1.1053735	5	2878612	2908612
150s		-0.08886	4	3078612	3108612
		-1.283094	3	3228612	3258612
600s.				<del>3178612</del>	<del>3208612</del>
100s		-2.47733	2	<del>3128612</del>	<del>3158</del>
				3328612	3358612