

Run 567 log

Flint #12:OK#1 = 2:1 by mass, mostly the same as 565 except 223 rather than 243 K. First of the new batch of Flint #12. Prep notes on loose sheet. Best dry packing of these very sand grains was to porosity $\phi = 0.251$. Final sample composition $f=0.730$. **P readings are analog Heise unless otherwise specified.**

1/16/09	1400	Loaded and pressurized yesterday p.m., vessel very tight at 60 MPa with only IW closing. Piston friction low.
	1705	Unloaded s gauge at 60.0 MPa: -0.005575/-0.005504/ <u>5540</u> .
	1706	1st contact: <u>1.1846 V</u> .
	1750 (1a)	s setpt 24 mV (30 MPa); 60 MPa, 223 K.
	1750	Record interval to 30 s.
	2039	Record interval to 60 s.
1/17/09	0700	Perfect o'nite pattern of oscillations, nice example of P/I being not quite right. Non-zero low reset limit may have been a contributor too. Incident: just noticed Ts are low and going down hard. Piston T gradient is biggest negative (-10 k/h), now at 218.5 K. Record shows T bath starting down at 0637 hrs, looks like it coincides with HJL TB2 check at 0610-0639 hrs. What happened?
	0752	Ts coming back; s just maxing out now at ~2.5 mV over target, so 33 rather than 30 MPa for a while. No worries.
	1020	Ts now 224 K and rising. Looks like LN is dry... Put limit at V0.01 to prevent over e.
	1115	Put in 100:1 gearing in as we wait for T recovery. HJL discovers leak in LN xfer line.
1/18/09	1130	General update. edot has finally recovered completely after yesterday's 2-3 K down and then up swings. Best way to suppress V oscillation here is not with P/I, which really can't be turned down much lower, but with tight hi and lo limits on current reset; e.g., right now at P/I = 20/10, hi/lo 0.03/0.01, and V is (now) mostly between those two limits.
	1449	Stop. Put in 10:1 gearing. Unload.
	1450	Retouch 71 ± 5 s after unload: 1.5169 V. some self-loading.
	1453	Retouch 235 ± 5 s after unload: 1.5202 V more self-loading.
	1459	Retouch 628 ± 5 s after unload: 1.5141 V. more self-loading.
	1503	Unloaded s gauge at 60.0 MPa: -0.011786/-0.011762/ <u>11774</u> .
	1520	Retouch 1831 ± 5 s after unload: 1.5003 V. more self-loading.
	1604	Retouch 4503 ± 5 s after unload: 1.5037 V. more self-loading.
	1612	Rezero. Unloaded s gauge at 60.0 MPa: -0.004935/-0.004997/ <u>4966</u> .
	1628 (1b)	s setpt 24 mV (30 MPa); 60 MPa, 223 K.

	1628	Record interval to 30 s.
	1742	Put in 100:1 gearing.
1/19/09	0640	Regular pyramids o'nite between V0 and V0.10. Change P/I and hi/lo limits from 50/30 and 0.10/0.01 to 50/10 and 0.07/0.03. Note that record interval is 30 s. Best to keep it here for balance of def step.
	1649	Stop. Put in 10:1 gearing.
	1720	Unload.
	1724	Retouch 60 $\pm$ 5 s after unload: 1.5630 V. some self-loading.
	1728	Retouch 308 $\pm$ 5 s after unload: 1.5627 V more self-loading.
	1734	Unloaded s gauge at 60.0 MPa: -0.005511/-0.005481/ <u>5496</u> .
	1744	Retouch 975 $\pm$ 5 s after unload: 1.5546 V. more self-loading.
	1823	Retouch 3600 $\pm$ 5 s after unload: 1.5536 V. negl. self-loading.
	1828	Back off and let vessel warm overnight (LN xfer line leaks).
1/20/09	0940	LN line xfer line replaced and [mostly] improved. Start blasting with LN. Ts max out at 251-252 K.
	1412	Rezero. Unloaded s gauge at 60.0 MPa: -0.005075/-0.005060/ <u>5068</u> .
	1418	1st contact: <u>1.4606 V</u> . Thermal expansion of 1.5536 V - 1.4606 V = 0.093 V (subtract from initial 1st contact)
	1438 (2)	s setpt 20 mV (24 MPa); 60 MPa, 243 K.
	1438	Record interval to 30 s.
	1605	Put in 100:1 gearing.
1/22/09	0918	Stop, end step (2), continue recording for a few mins because of pist disp noise issue (which has really not been that bad during this step).
	0923	Stop recording. No unload; proceed directly to next step.
	0930 (3)	s setpt 24 mV (30 MPa); 60 MPa, 243 K.
	0930	Record interval to 30 s.
1/23/09	1030	Stop. Put in 10:1 gearing.
	1044	Unload.
	1045	Retouch 50 $\pm$ 5 s after unload: 1.8797 V. some self-loading.
	1050	Retouch 308 $\pm$ 5 s after unload: 1.8544 V more self-loading.
	1054	Unloaded s gauge at 60.0 MPa: -0.005405/-0.005396/ <u>5401</u> .
	1100	Retouch 925 $\pm$ 5 s after unload: 1.8527 V. more self-loading.
	1135	Retouch 3063 $\pm$ 5 s after unload: 1.8395 V. negl. self-loading.
	1230	Out of vessel, into gas over LN in storage deward for ~5 min, then all the way in.
1/16/09	1934 hrs	0.032907"/0.014401 (1a) #581
1/16/09	2035 hrs	0.037055"/0.016217 #923
1/16/09	2209 hrs	0.041419"/0.018158 #1509

1/17/09 0054 hrs	0.046168"/0.020205	#2526
1/17/09 0657 hrs	0.052335"/0.022904	#4779
1/17/09 1137 hrs	0.054550"/0.023873	#6432
1/17/09 1804 hrs	0.057949"/0.025361	#8848
1/17/09 2352 hrs	0.057398"/0.025120	#11017
1/18/09 0814 hrs	0.058141"/0.025445	#14147
1/18/09 1635 hrs	0.061061"/0.026724 (1b)	#40
1/18/09 1843 hrs	0.063805"/0.027923	#775 (noisy; reading is min val)
1/18/09 2122 hrs	0.065316"/0.028585	#1611
1/19/09 0649 hrs	0.068905"/0.029801	#4738 (min val of ~10 readings)
1/19/09 1450 hrs	0.069833"/0.030561	#7441 " "
1/19/09 1708 hrs	0.069957"/0.030614	#8374 (motor stopped)
1/20/09 1521 hrs	0.090680"/0.039685 (2)	#244
1/20/09 1719 hrs	0.100255"/0.043875	#835
1/20/09 2110 hrs	0.105209"/0.046043	#2134
1/21/09 0827 hrs	0.114183"/0.049972	#5949
1/21/09 1219 hrs	0.116119"/0.050818	#7232
1/21/09 2140 hrs	0.119050"/0.052101	#10330
1/22/09 0902 hrs	0.121609"/0.053220	#14180
1/22/09 1029 hrs	0.126116"/0.055193 (3)	#352
1/22/09 1148 hrs	0.127937"/0.055990	#806
1/22/09 1834 hrs	0.132965"/0.058190	#3118
1/23/09 0647 hrs	0.139393"/0.061004	#7282
1/23/09 1030 hrs	0.142976"/0.062571	#8548

Monday 1220 hrs. Looks a-ok. If the LN will hold out for another 24 hrs, then let's just let this step continue and do the unload/rebound tomorrow a.m. (before the inauguration). I'm guessing the intensifier will not last another 24 hrs (limit is +5 V). If so, please restroke it today. You should be able to do it with minimal hiccup in P. The sample won't even notice it.

pist disp reading is noisy again. My solution is to watch it for a while and grab the minimum value for the purposes of the yellow stickie.

1500 hrs -- restroked intensifier, changed LN

1936 hrs -- i give up. it can do whatever it wants.

2105 (pt #2100) 500/300 was way too high; turned it down to 100/30.

i tried that earlier but it spat in my face.

it had to work. This step is kind of important--it's not slowing down like the others; can't wait to see it in 12 hrs.

got it
k