HPLC Pigment Analysis at HPL

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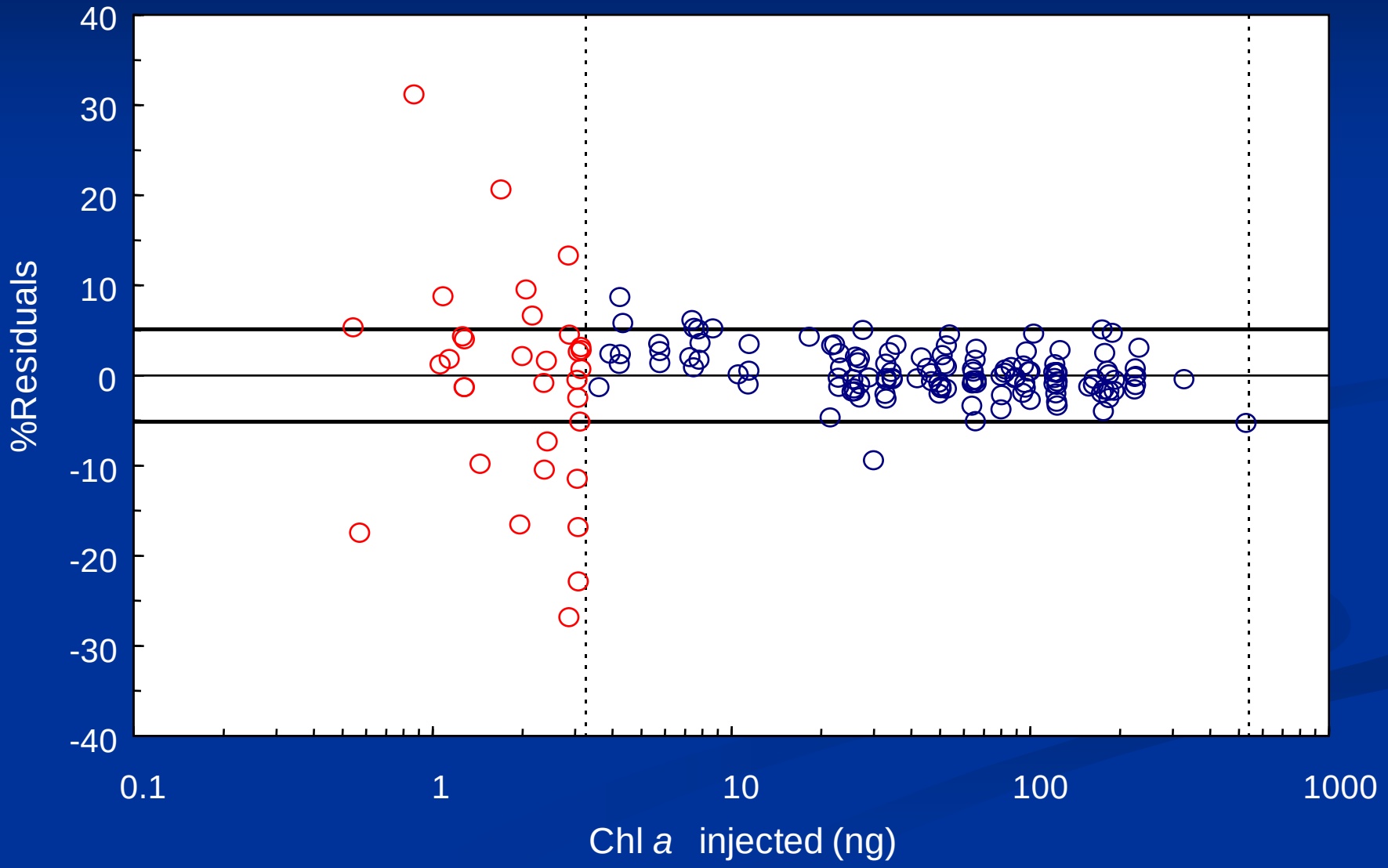
Outline

- QA/QC
- Progress report
- What I need from PIs

Chl *a* calibration 1999-2007



Calculation Equation for Pigment Concentration

$$C_{P_i} = \frac{V_s \hat{A}_{c_2} / \hat{A}_{s_2}}{V_f} \frac{\hat{A}_{P_i} R_{P_i}}{V_c}$$

- Our QC measurements check every variable in our calculation equation

Examples of Daily QC Measurements

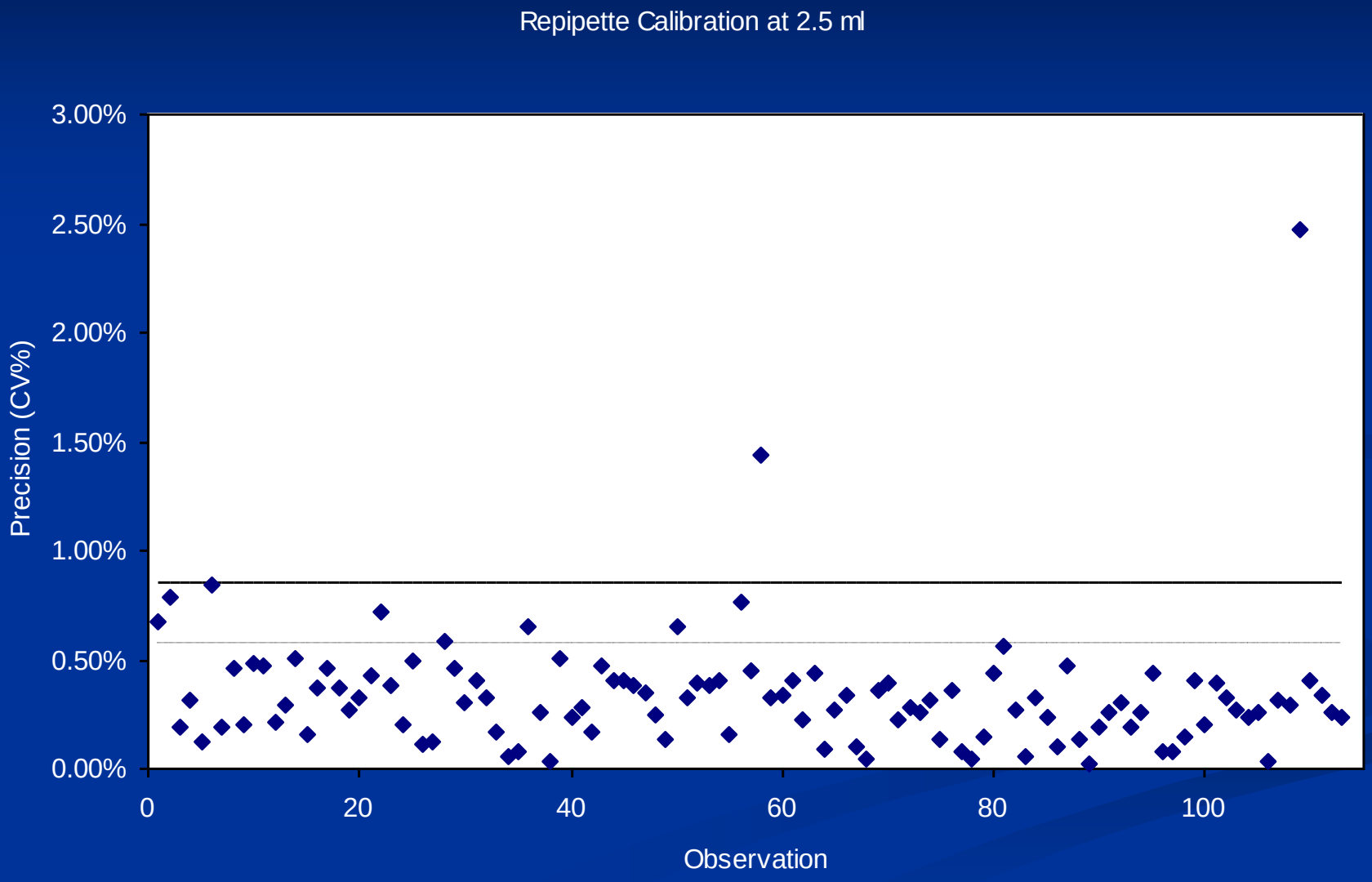
- Injector precision
  Avg CV%=0.4%, WL=0.8%, CL=1.3%
- Accuracy of chl *a* standard
  Avg=-0.75%,WL=4.1%, CL=5.3%
- Calibration of solvent delivery device
  Avg CV%=0.34%, WL=0.57%, CL=0.83%
- Retention time variability (on average no more than 0.07% within a sequence)
- Peak resolution documentation (Rs> 1.0)
- Carryover (no more than 0.1%)

Analysis precision v. method precision

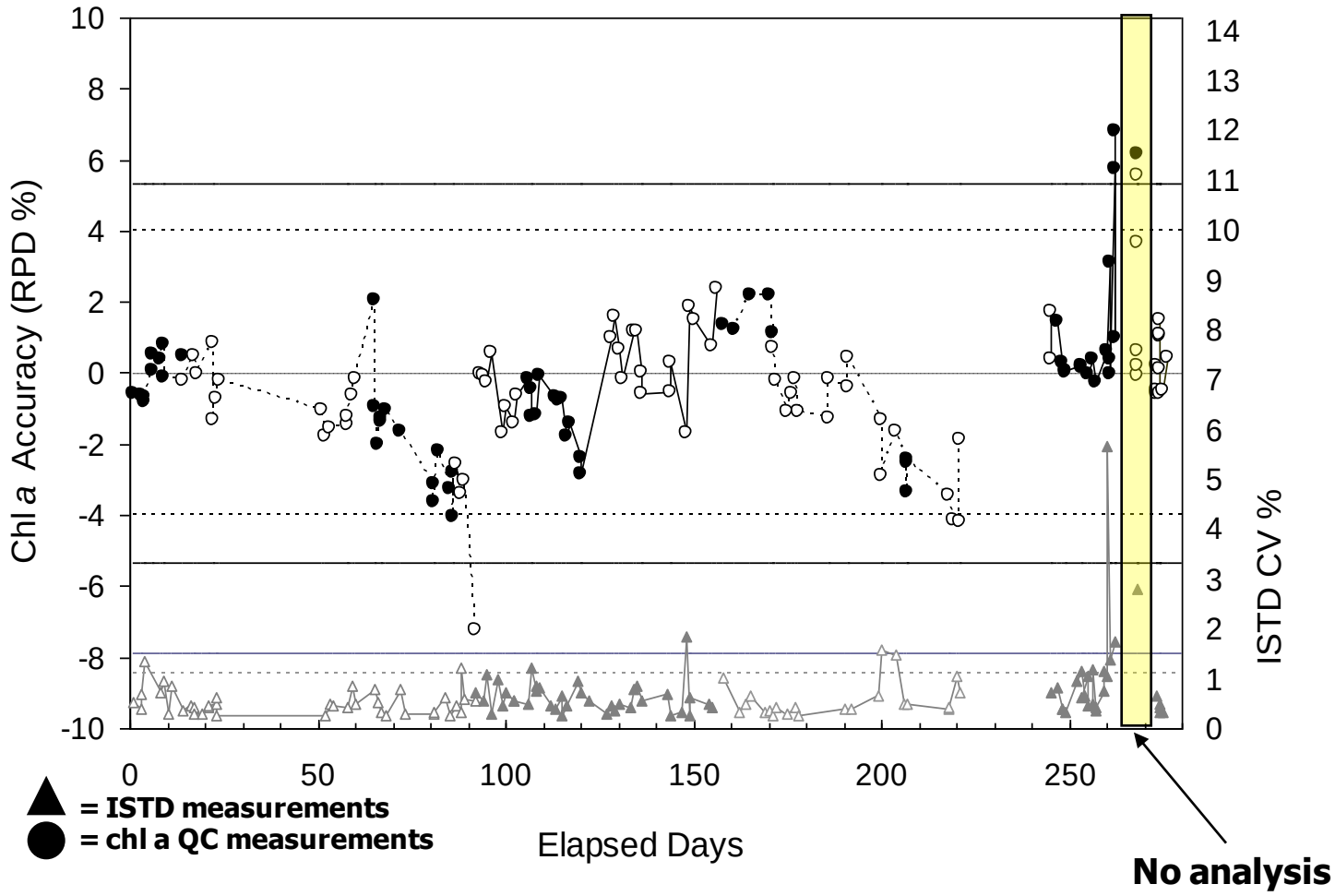
- Daily analysis precision: Replicate injections of sample extracts (min and max residence time)
- Daily method precision: Duplicate filters

	Analysis precision (CV%)	Method filter precision for HPL clients (CV%)
TChl *a*	0.4 (WL=1.6%,CL=2.2%)	4 (1-10)
PPig	1.8 (WL=4.7%,CL=6.2%)	7 (2-11)

Control Charts



Looking at QC Measurements in Context



Progress Report

- This year we will analyze 3700 pigment samples for NASA
- So far:
  - Received 1205 samples
  - Analyzed 575 samples
  - Have 630 samples still in the queue
  - Know of ~300 more samples to be shipped soon

What I need from PIs submitting pigment samples

- Duplicate filters-at least 5%
- Completed, correct sample information forms
- Communication, please contact me!