

Stormwater Monitoring Coalition Toxicity Intercalibration Study

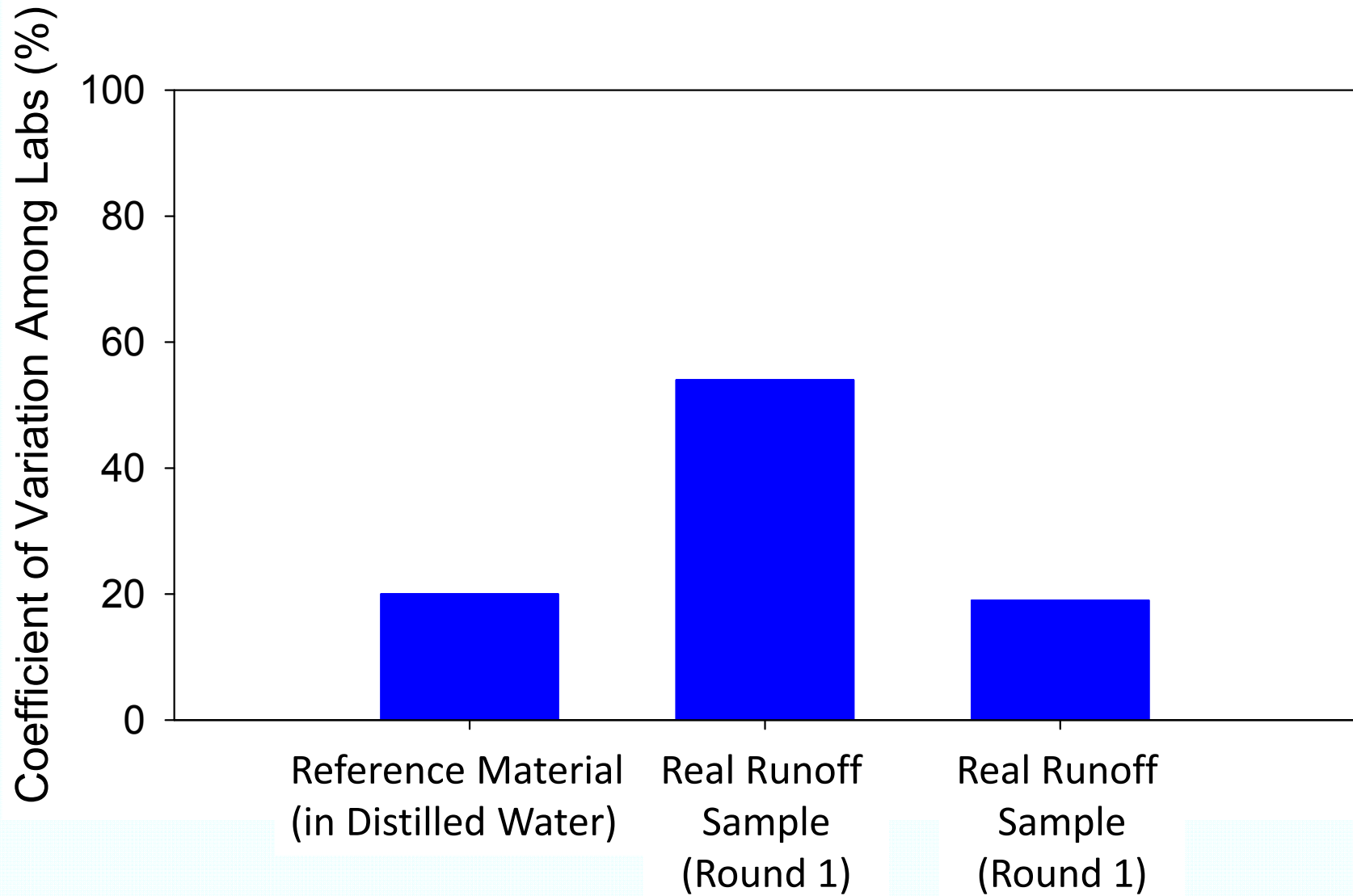
The SMC

- 14 member agencies
 - 7 Municipal stormwater agencies
 - Caltrans
 - 3 RWQCBs
 - SWRCB
 - EPA Office of Research and Development
 - SCCWRP
- Mission is to conduct the science to help support Stormwater Management
- Initiated in 2001 and just signed a new Master Agreement for another 4 years

Why Focus on Laboratory Intercalibrations?

- SMC has a goal of sharing data
 - Regional Stream Monitoring
 - NPDES Data
 - BMP Performance Monitoring
- ELAP focuses on systems quality, not comparability of results
- SMC realized its value when intercalibrating on chemistry
 - 11 largest contractor laboratories, all ELAP certified

Total Kjeldahl Nitrogen (TKN)



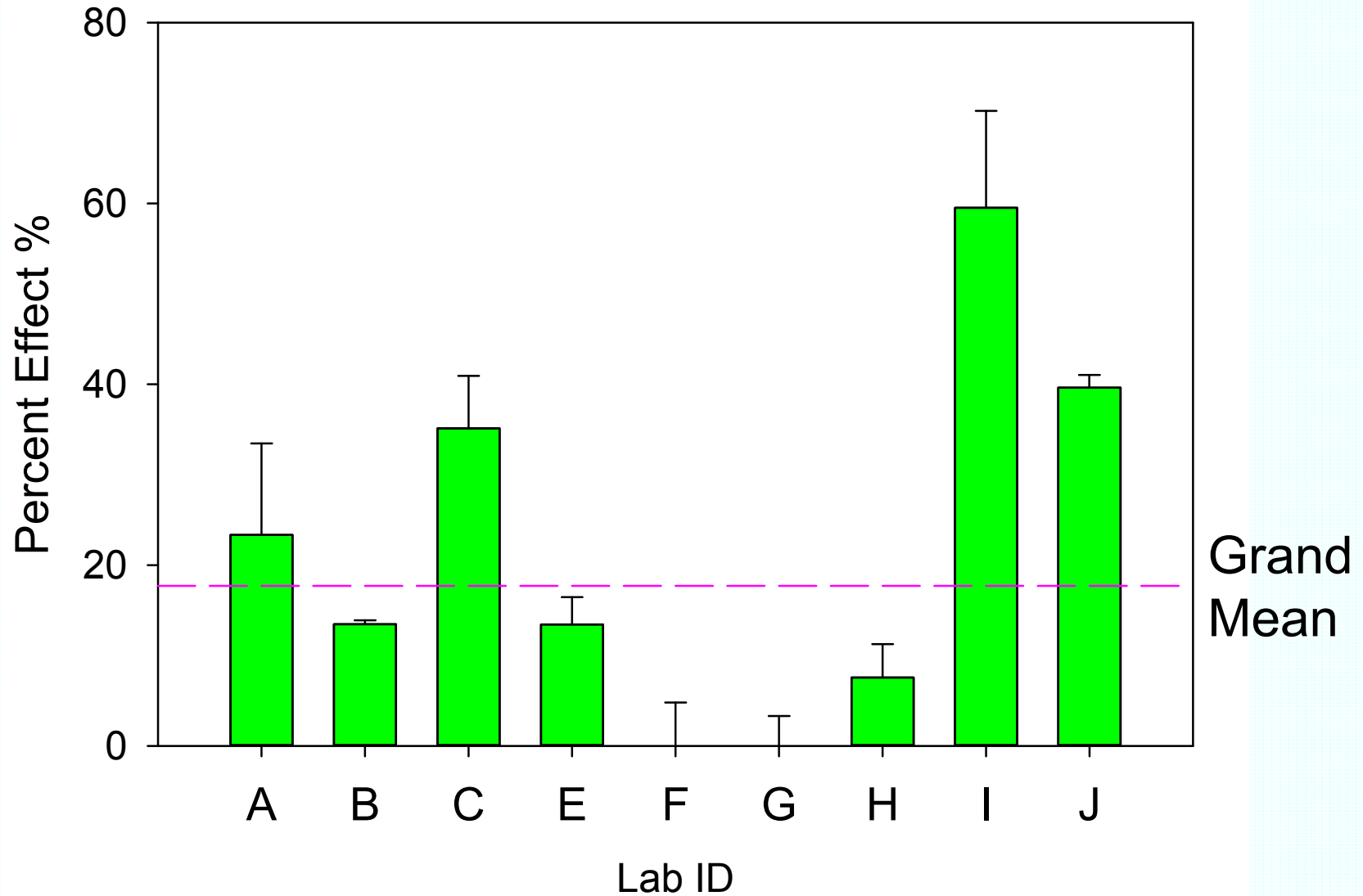
Time For Toxicity Testing

- Three Important Outcomes for the SMC
- Quantify comparability among labs
- Create a performance-based laboratory guidance manual
- Pre-screens for qualified contractor labs

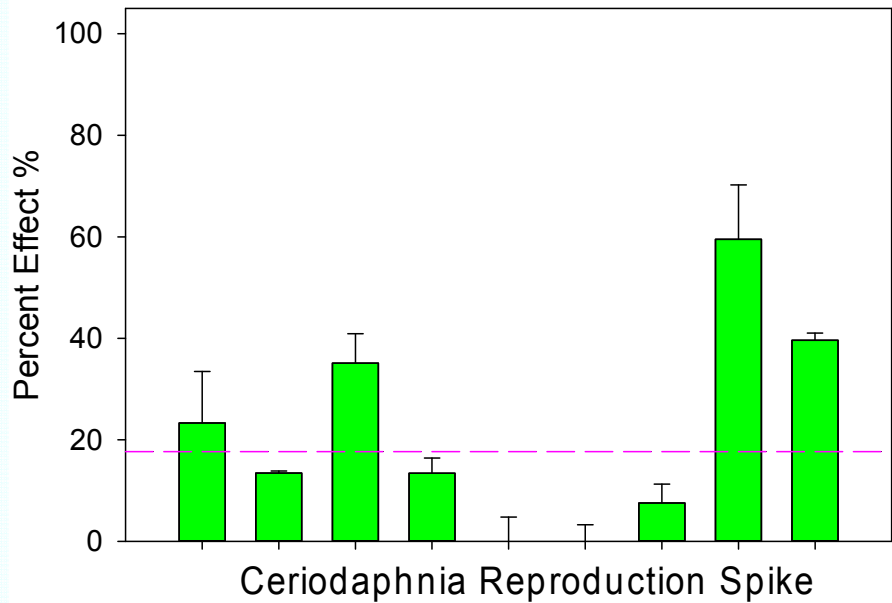
Approach

- Nine laboratories, all ELAP certified
- Four species
 - 2 Freshwater: *Ceriodaphnia*, *Hyaella*
 - 2 Marine: *Strongylocentrotus*, *Mytilus*
- Four sample types, delivered blind
 - Nontoxic, spiked sample, spike duplicate, runoff
- Scoring based on three factors
 - Test acceptability, intra-laboratory precision, inter-laboratory precision

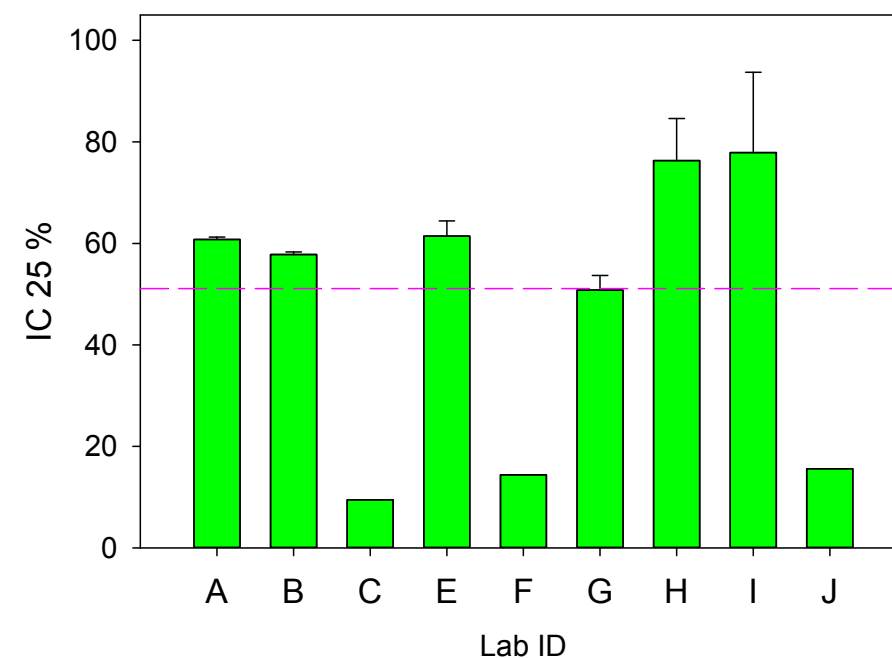
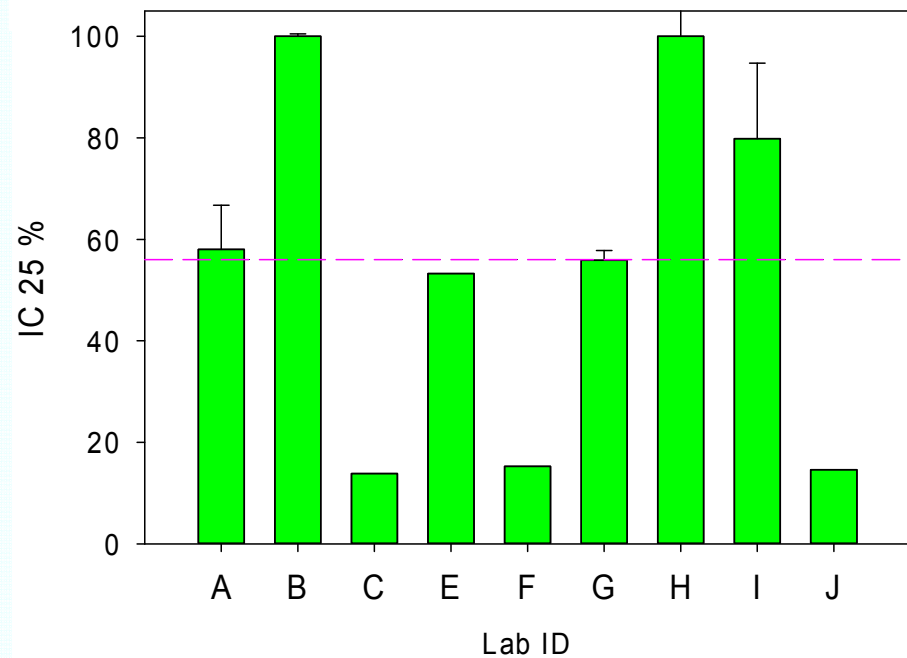
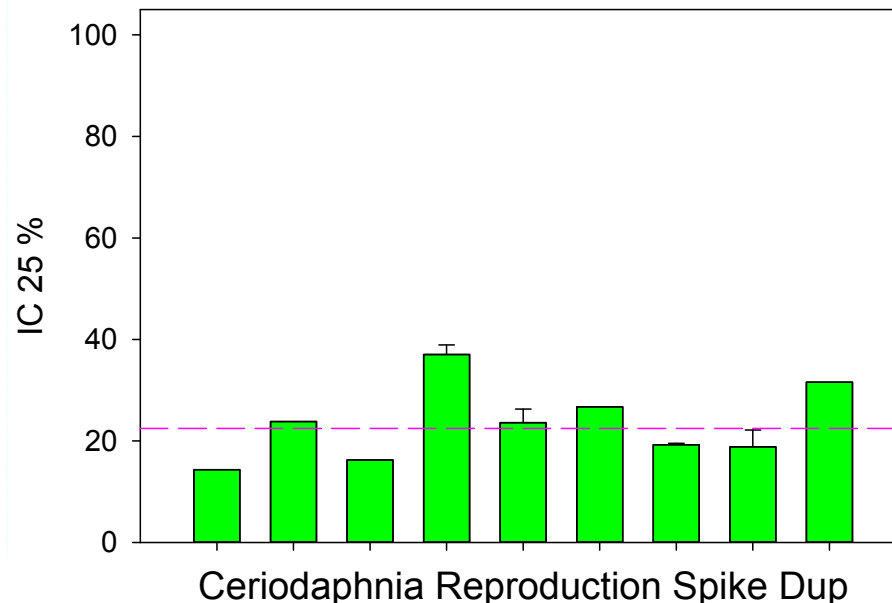
Ceriodaphnia Reproduction Non-Toxic Sample



Ceriodaphnia Reproduction Non-toxic



Ceriodaphnia Reproduction Runoff



Comparability Scores-Round 1

Lab ID	Ceriodaphnia Reproduction	Ceriodaphnia Survival	Amphipod	Mussel	Sea Urchin
A	102	75	36		84
B	83	99	48		
C	54	39	57		
E	83	95		98	
F	75	78	42	66	48
G	90	90			
H	66	72			
I	93	87	77	105	93
J	72	60	87	84	92

Very high comparability	≥ 97
High comparability	≥ 86
Moderate comparability	≥ 75
Low comparability	< 75

Next Steps

- Identified potential sources of variability
 - Standardization of these test procedures
- Conduct second round of testing
 - Begins January 19th
- Write Guidance Manual by spring
 - Incorporate laboratory intercalibration results