

*Quality Assessment Report
for Water Quality
Monitoring*

Delia Ivanoff

Quality Assurance Administrator

Environmental Resource Assessment

February 21, 2006

Field Sampling Quality

- Project monitoring plan finalized 9/14/05
- Technical working group discussions
- 157 equipment blanks collected; all acceptable
- 7 set of replicates collected; all acceptable

Field Audits

- Miami-Dade DERM (ENP, C11D, and NECP Projects)
 - Inadequate mixing of autosampler samples
 - Inconsistent procedure in collecting equipment blank
- USFWS (EVPA Project)
 - Inconsistent procedure in collecting equipment blank
 - Documentation deficiencies
- Action taken: Deficiencies have been corrected.

Laboratory Procedure Changes

- Changed instrument, 11/28/05
 - Segmented flow to state-of-the art flow injection technology
- Changed analytical range limits
 - From dual level (0.002-0.2 and 0.2-2) to single level (0.002-0.400 mg/L)
- QC levels
 - Changed two QC check levels including (e.g. from 0.025 to 0.03 mg/L P)
 - PQL check (0.004) still in place
 - Eliminated organic check (1.8 mg/L)
 - Matrix spikes with organic P still analyzed

Laboratory Quality Assessment

All criteria were met for data pertinent to this report:

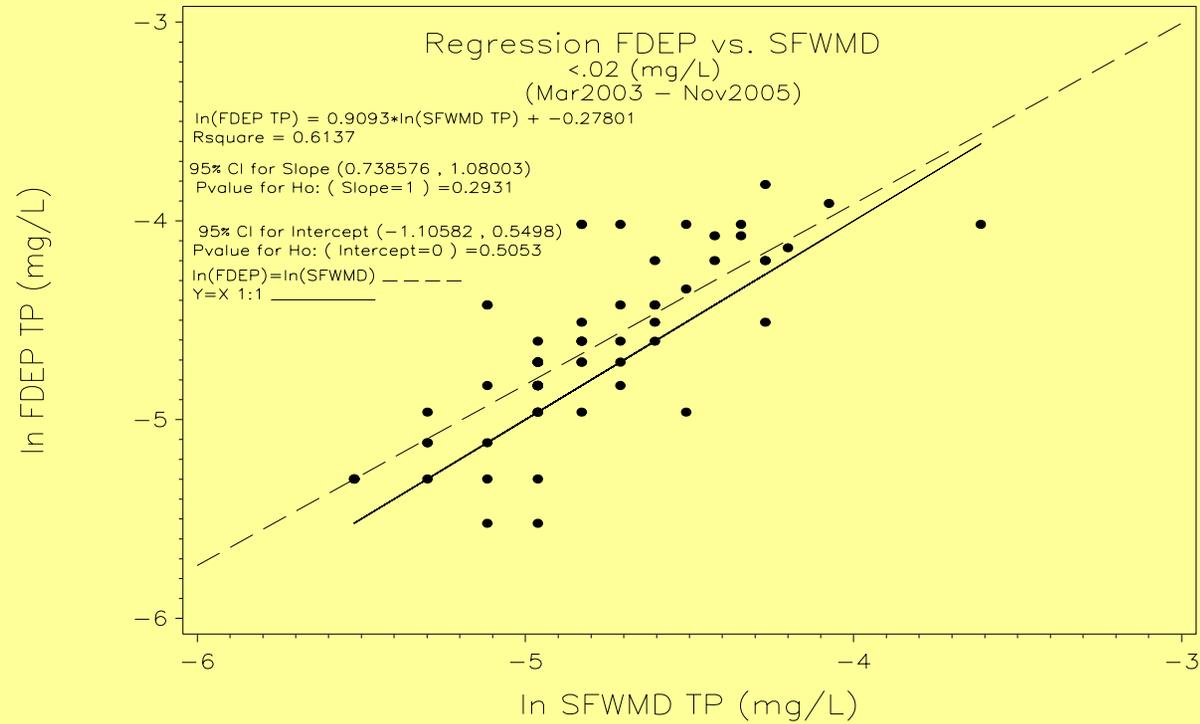
PQL Check (0.004 mg/L) – Mean Recovery: 102%

Matrix spikes recovery – 103%

Precision – <10%

QC check (accuracy) – 93-102%

Interlaboratory Comparison, District and FDEP Laboratories



***Summary Statistics for <0.02 mg/L
Data Set from 3/2003-11/2005; n=73***

Lab	Mean	Median
FDEP	0.010	0.009
District	0.008	0.007

Summary of Differences

Mean	-.002
Median	-.001
Signed Rank Sum Test	
Hypothesis: Median diff=0	pValue = <0.0001

Conclusion

Based on Regression Analysis, <0.02 mg/L

- Slope not significantly different from 1
- Intercept not significantly different from 0
- Data sets from both labs are highly comparable

Based on Non-Parametric Analysis, <0.02 mg/L

- Indicates statistically significant difference
- High variability at these low levels
- Mean and median differences (District-FDEP) are - 0.002 and 0.001 mg/L, which are at or below both laboratories' MDL

ERR-15 Performance***(April-May, 2005)****Overall District Rating=5**Units = $\mu\text{g/L}$*

Sample	Study Mean	SFWMD*	FDEP*
S5A	197	200 (5)	198 (5)
S10C	266	270.7 (5)	266 (5)
WCAE1	29.7	30.5 (5)	34.5 (3)
WCAF3	28.7	29.3 (5)	32.0 (4)
WCAU2	7.33	7.00 (5)	8.00 (5)

* Number in parenthesis indicate ratings (5=highest; 0=lowest)

ERR-16 Performance

(Nov. 2005 - Preliminary Results)

Units = $\mu\text{g/L}$

Sample	Mean*	SFWMD	FDEP
S5A	216 \pm 13.9	212 \pm 1.7	216 \pm 3.1
S10C	62.2 \pm 6.2	55.8 \pm 2.9	66.5 \pm 1.7
WCAU2	8.4 \pm 1.9	7.3 \pm 0.6	9.0 \pm 0.0
WCAF1	26.4 \pm 3.3	26.3 \pm 0.5	28.8 \pm 0.5
WCAF4	8.21 \pm 1.2	7.0 \pm 0.0	8.3 \pm 0.5

*Excludes 1 laboratory-gross outlier