DTSC Laboratory Update

Myrto Petreas, PhD, MPH
Environmental Chemistry Laboratory DTSC

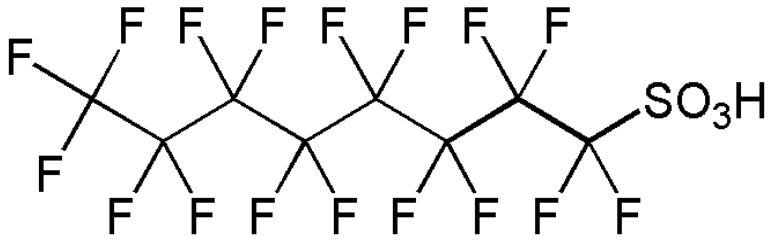
Report to Scientific Guidance Panel
Oakland
May 24, 2010

Status of Method Validation

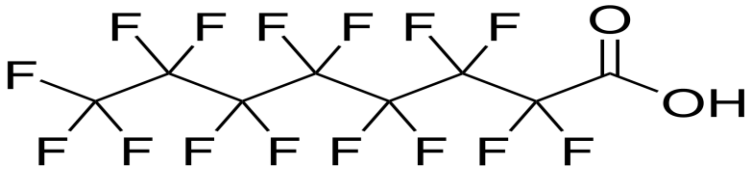
- **Polybrominated Diphenyl Ethers (PBDEs)**
  - **Transitioned to CDC methodology**
  - **Continue sample analysis**

- **Perfluorinated Chemicals (PFCs)**
  - **Adapted CDC methodology**
  - **Validation criteria met**
  - **Standard Operating Procedure in review**

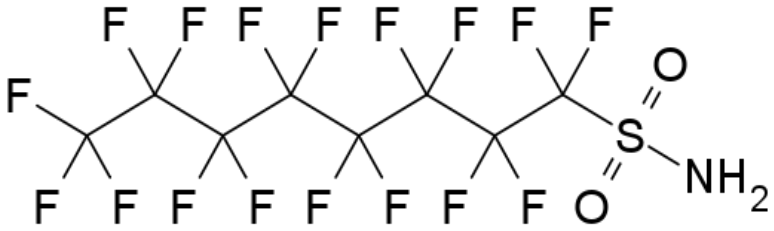
Perfluorinated Chemicals (PFCs)



PFOS



PFOA

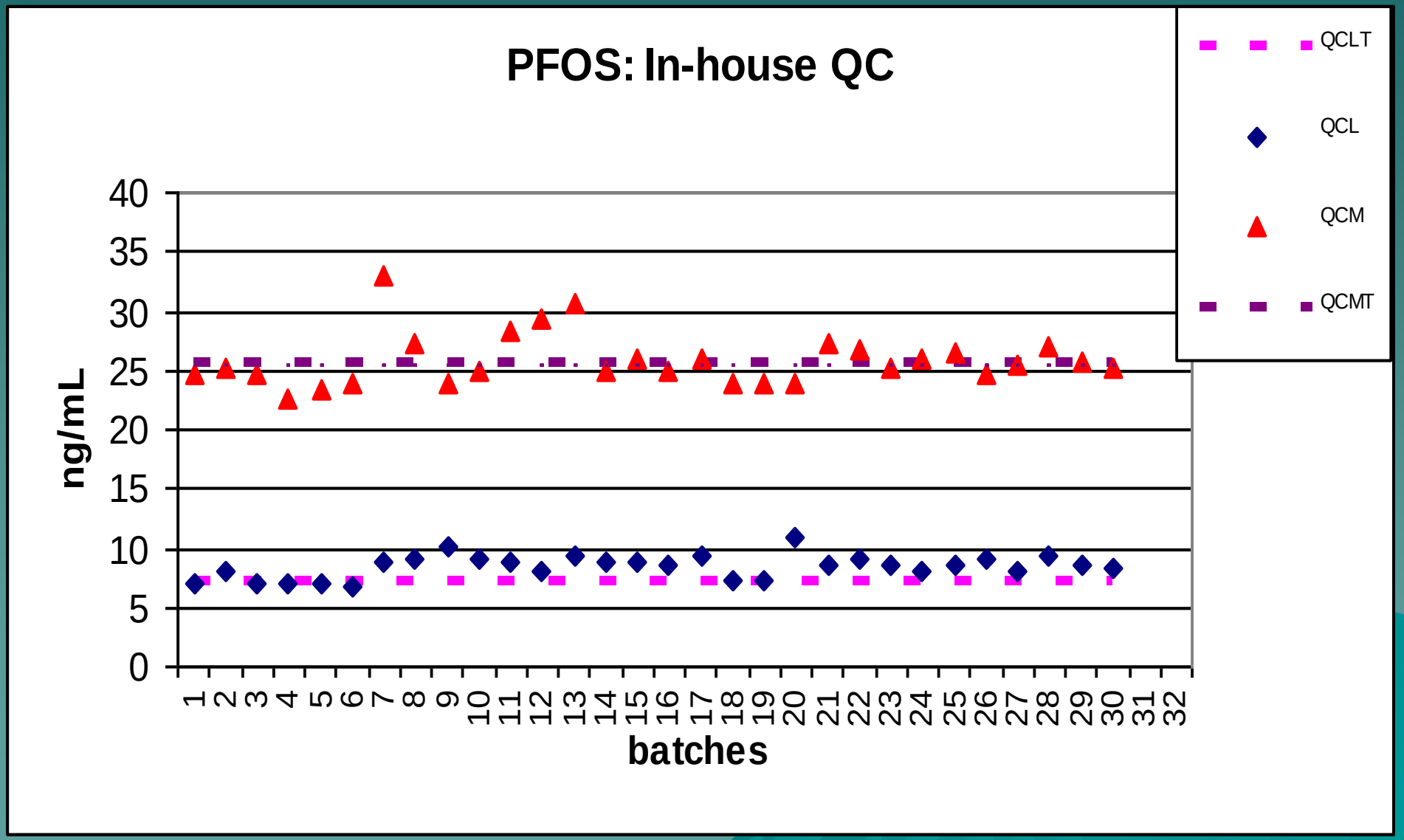


PFOSA

PFCs in Human Serum (ng/mL)

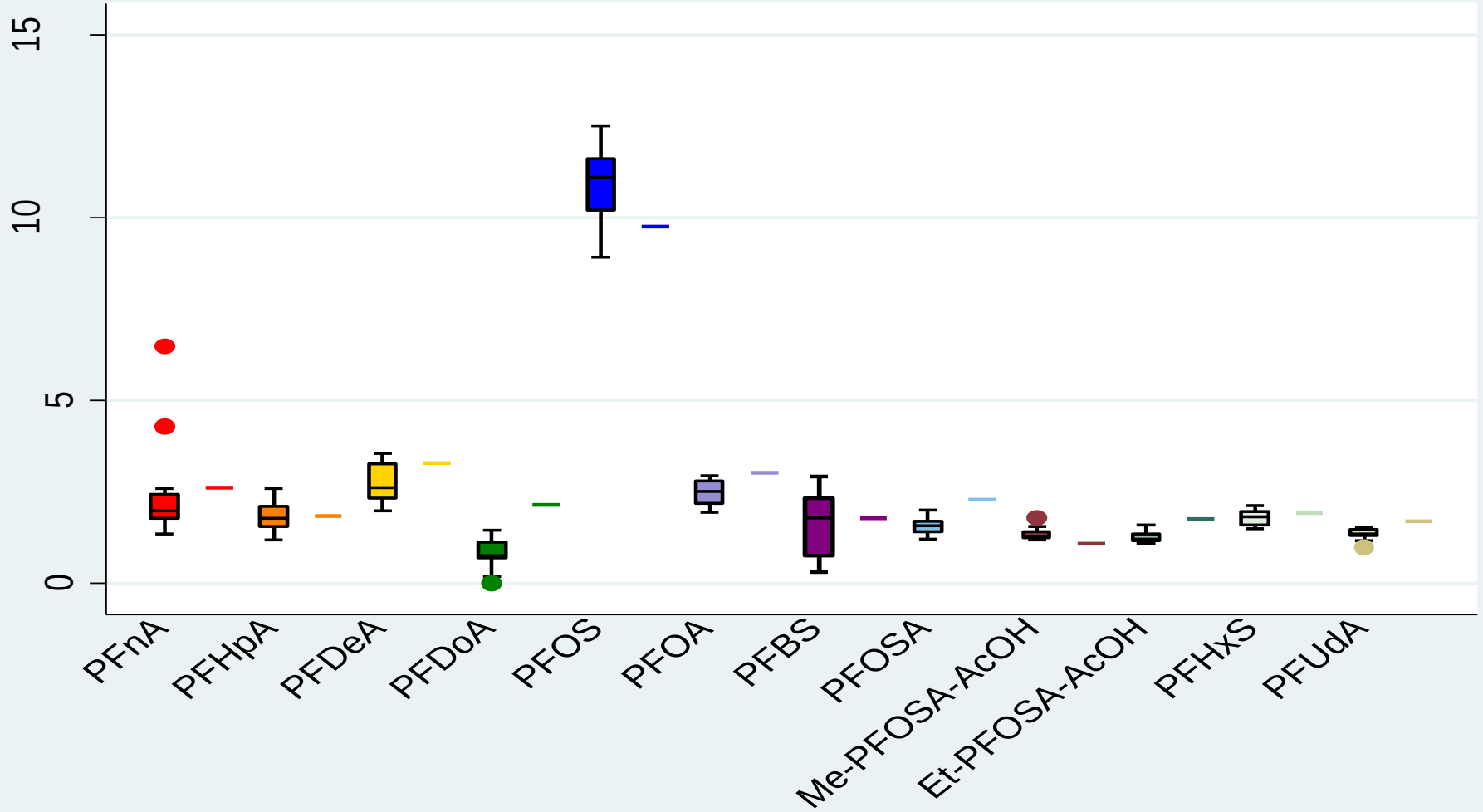
Full Name	Abbr.	NHANES (99-00) median	NHANES (03-04) median
perfluoroheptanoate	PFHpA*	NR	<LOD
perfluorooctanoate	PFOA	5.10	4
perfluorononanoate	PFNA	0.60	1
perfluorodecanoate	PFDeA	<LOD	<LOD
perfluoroundecanoate	PFUdA	NR	<LOD
perfluorododecanoate	PFDoA	NR	<LOD
perfluorobutane sulfonate	PFBS	NA	<LOD
perfluorohexane sulfonate	PFHxS	2.10	1.9
perfluorooctane sulfonate	PFOS	30.40	20.7
perfluorooctane sulfonamide	PFOSA	0.30	<LOD
N-methyl-perfluorooctane sulfonamide	Me-PFOSA-AcOH	0.90	<LOD
N-ethyl-perfluorooctane sulfonamide	Et-PFOSA-AcOH	0.50	<LOD

PFC Method Validation

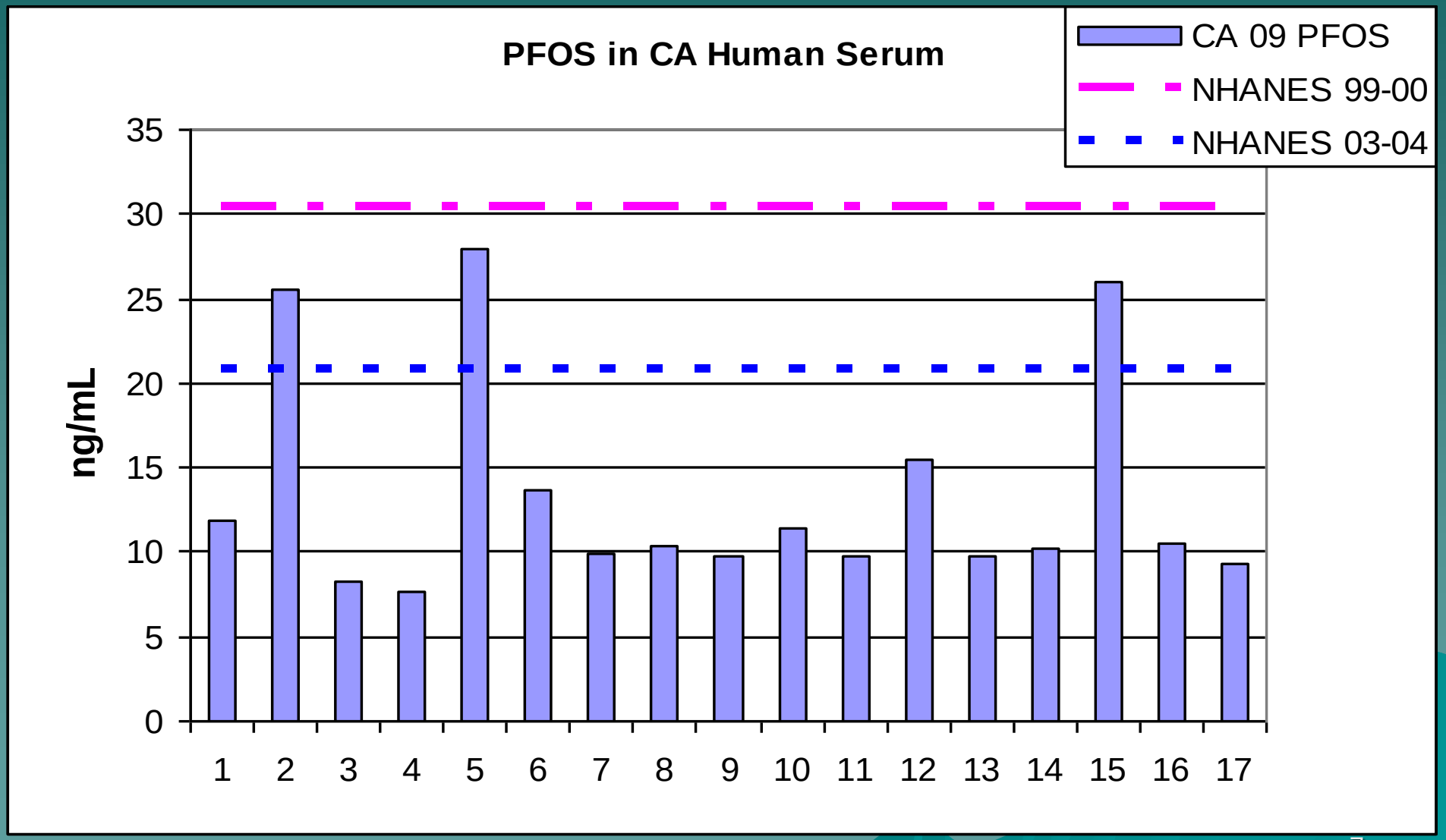


PFC Method Validation
Comparison to CDC

CDC values shown as dashes

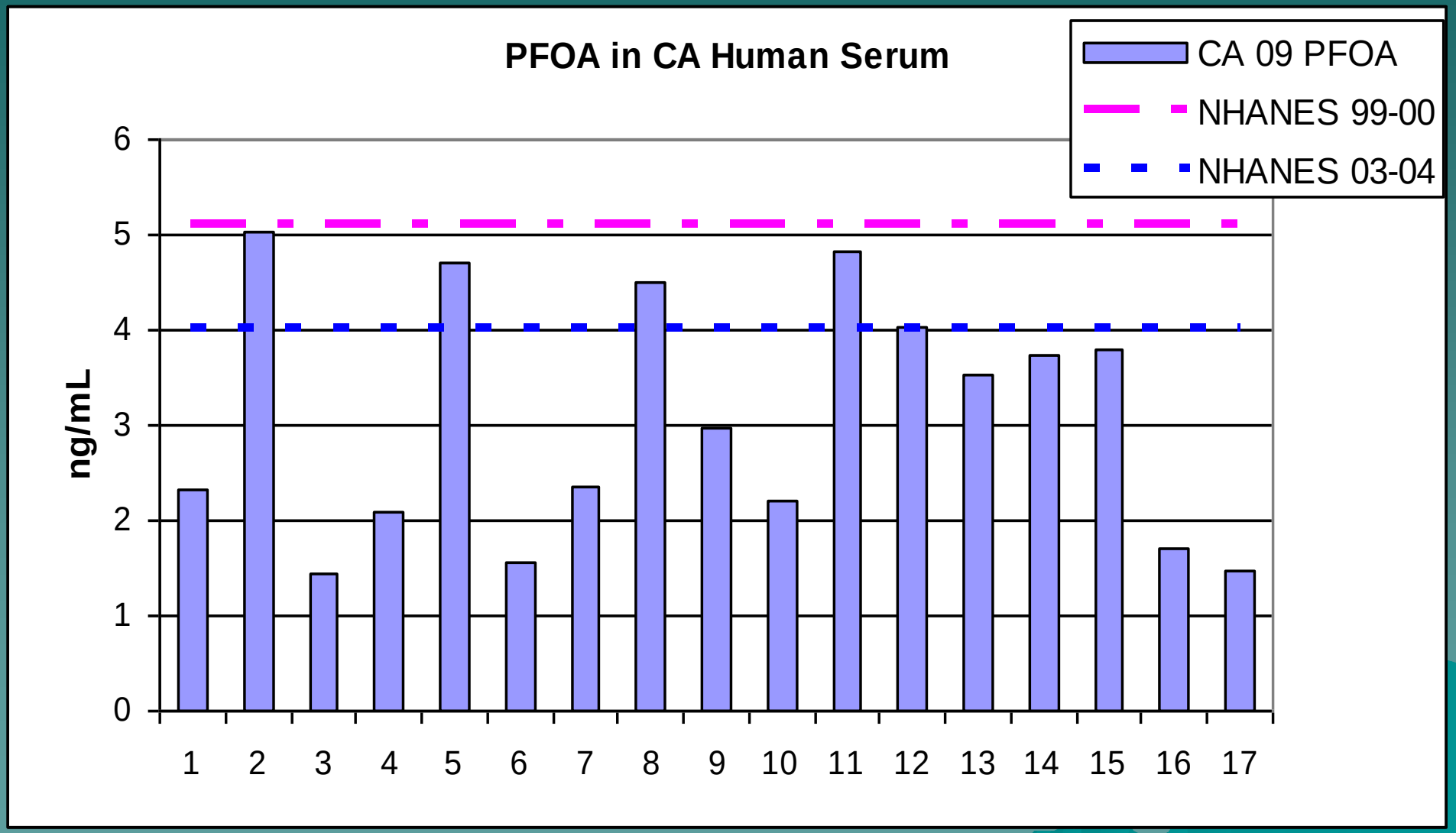


PFCs in Contemporary CA Serum



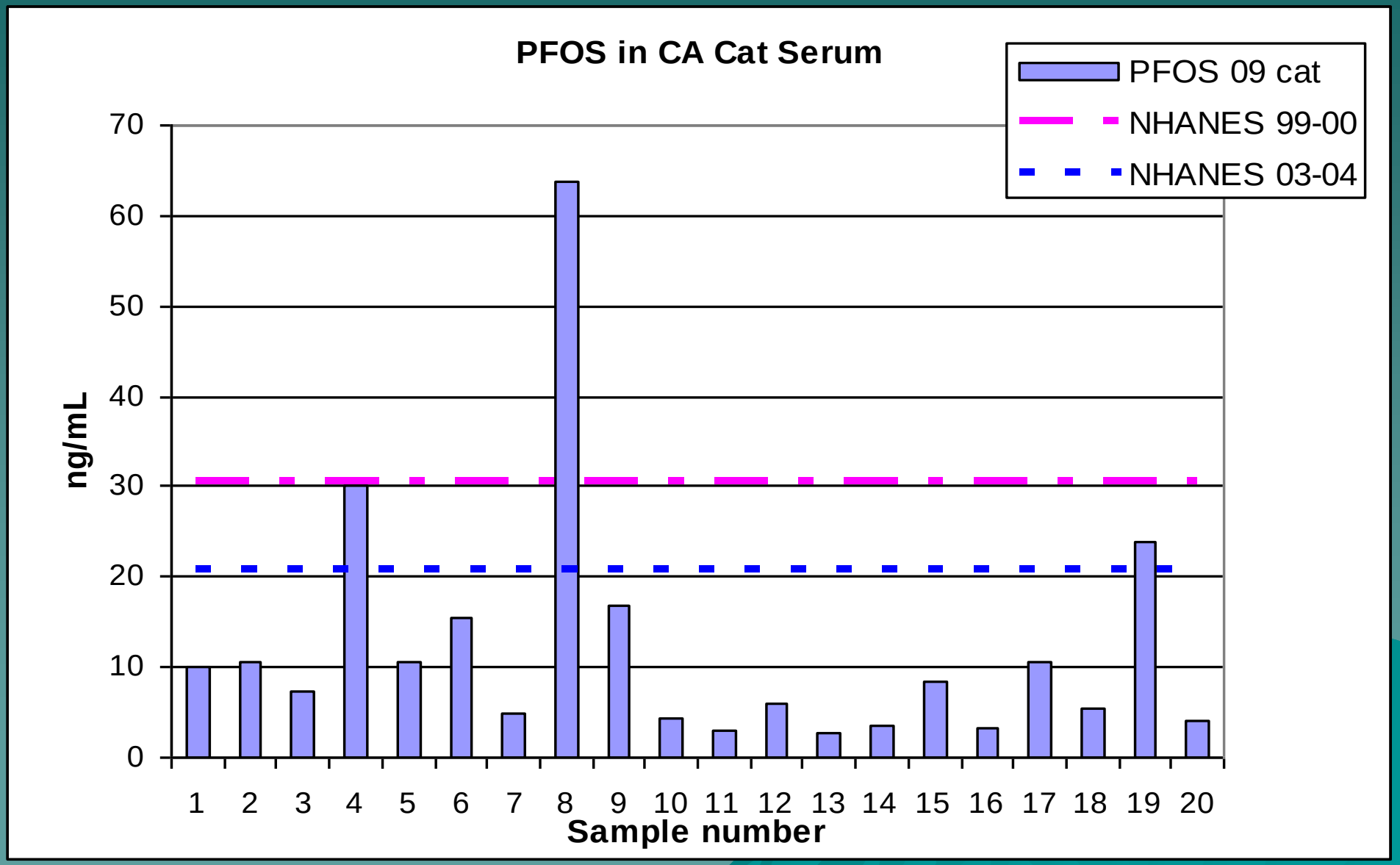
Wang et al, 2010

PFCs in Contemporary CA Serum

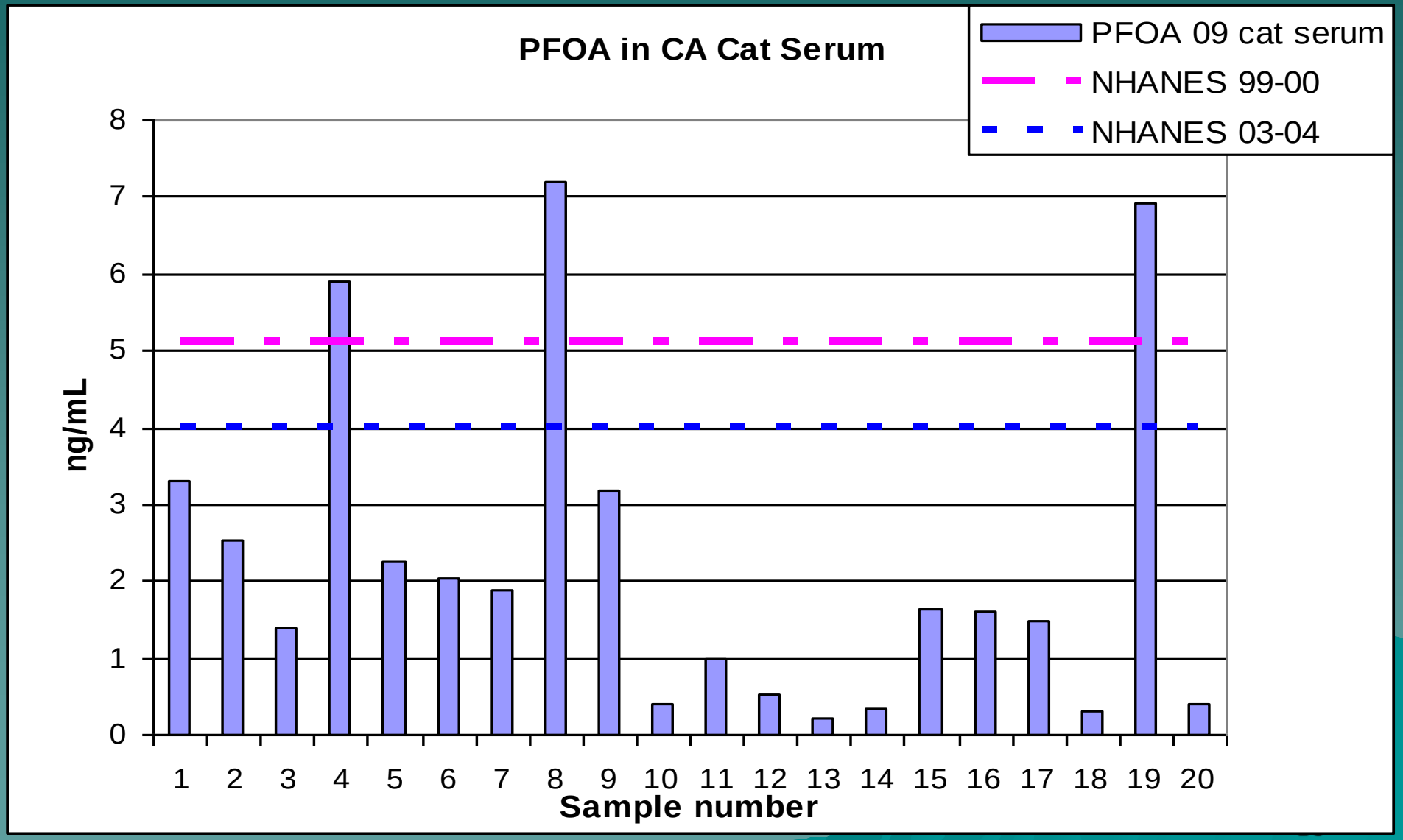


Wang et al, 2010

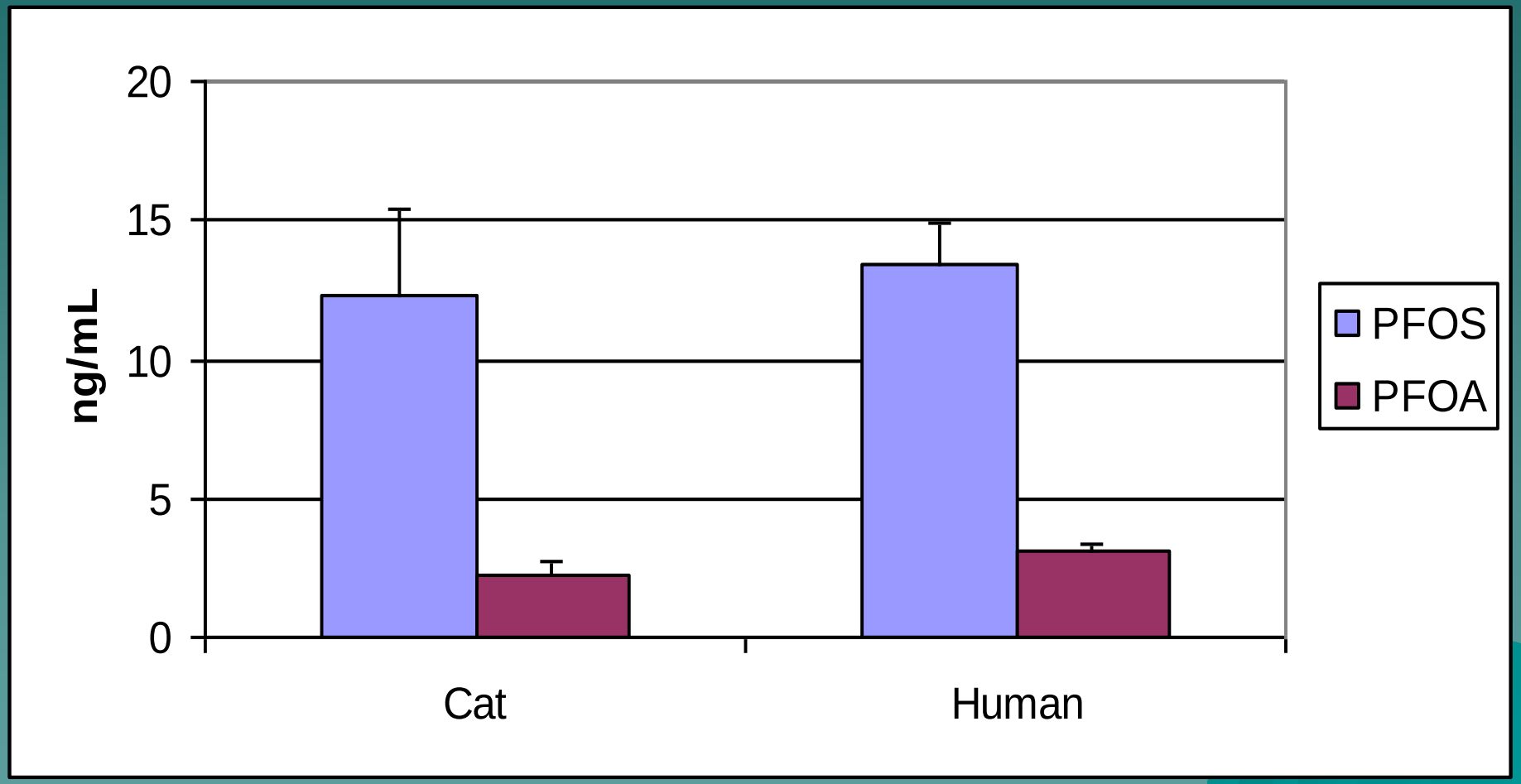
PFCs in CA Cat Serum



PFCs in CA Cat Serum

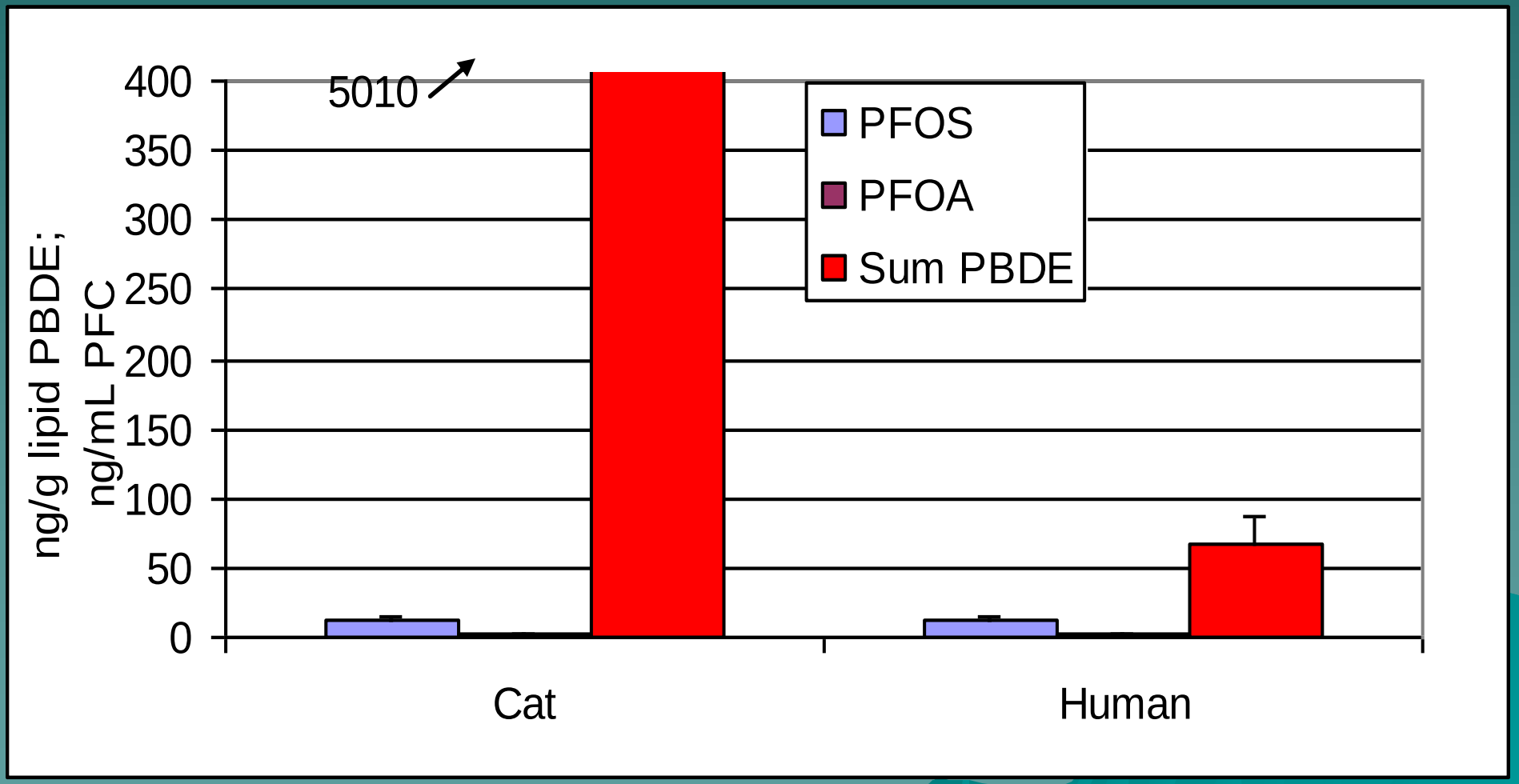


PFCs in CA Human & Cat Serum



Wang et al, 2010

PFCs, PBDEs in CA Human & Cat Serum



PFC Summary

- **Methods are validated**
- **CA human serum (2008-09) within expected NHANES ranges**
- **CA cat serum PFC levels very similar to human PFC levels in contrast to levels of PBDEs**

Soon to come….

- **Method development for new brominated flame retardants by LCMS**
  - **HBCD, TBBPA**