	New Method	Current Method	EPA Method
1. *Title and Description* *List & attach SOPs for new and current.*	Lachat 31-114-27-2-A ODU SIF_L_0 SOP Adaptation of EPA 366.0	Skalar 563-051-041294 ODU SI-8 SOP Adaptation of EPA 366.0	**EPA 366.0**
2. *Procedural differences*	Flow injection technology measuring at same wavelength as EPA method (660 nm); analysis heated to 37°C	Segmented flow measuring at alternate wavelength (810 nm)	**Segmented flow method**
3. *Concentrations of calibration standards*	0.0234 – 2.337 mg Si/L 8 point calibration prepared by autodilutor	0.0234 – 1.1686 mg Si/L 5 point calibration	**0.03 – 6.0 mg Si/L Minimum of 5 point calibration**
4. *Initial Precision & Recovery*	100 ± 10% allowed	100 ± 10% allowed	**100 ± 10% allowed**
5. *Calibration Verification* *-Initial Cal Verification Result -Ongoing Cal Verification Res*	Initially and then every 10 – 20 samples with recovery 100 ± 10%	Initially and then every 10 – 20 samples with recovery 100 ± 10%	**100 ± 10% allowed**
6. *Method Detection Limit*	0.0014 mg/L	0.0007 mg/L	**0.0012 mg/L**
7. *Reporting Limit (Practical Quantitation Limit)*	0.0234 mg/L	0.0234 mg/L	**0.03 mg/L (lowest std.)**
8. *Correlation coefficient of calibration curve*	≥ 0.9980	≥ 0.9980	**≥ 0.995**
9. *Sample matrix and concentration range for each* *(fresh and saline waters are separate matrices)*	Instrument performs at full range whether fresh or saline (0 – 35 ppt)	Sample matrix is matched to average salinity of cruise	**Designed for estuarine and coastal waters with recommendation to match matrix salinity to samples**
10. *Paired t-test results* *(per each matrix) A two-sided t-test with p-value of 0.01*	Not applicable		**Not quoted in method.**
11. *Wilcoxin Signed-Rank test* *(if paired differences are not normally distributed)*	For this comparison study between the two methods: S=-1969;P<0.0001		**Not quoted in method.**
12. *Other Statistics*	Shapario –Wilk's: W=0.76 P<0.0001 Kolmogorov-Smirnov: D=0.22,P<0.01	Shapario –Wilk's: W=0.73 P<0.0001 Kolmogorov-Smirnov: D=0.22,P<0.01	**N/A**
13. *Certified reference material results* *with certified values*	No CRM available but QCS 98.63% recovery in Type I H_2O and 99.55% in ASW	No CRM available but QCS 101.94% recovery in ASW	**Not Quoted but must be in range of 90 – 110 %**
14. *PT sample and results* *(USGS, ERA, CBP blind audit, etc.)*	PT sample WP12-4-128 from RT Corp. November 2012: Acceptable Result. TV=62.9 mgSIO_2/L IV=63.58 mgSIO_2/L	Currently running RT Corp. PT semiannually. PT sample WP12-4-128 from RT Corp. November 2012: Acceptable Result. TV=62.9 mgSIO_2/L IV=61.93 mgSIO_2/L	**N/A**

15. Method blank results	Required ≤ 0.0234 mg Si/L	Required ≤ 0.0234 mg Si/L	**Required ≤ 0.0012 mg/L (MDL)**
16. Instrument blank *(if comparing instruments)*	Mean -0.0031 mg/L Std. Dev. 0.0041	Mean 0.0018 mg/L Std. Dev. 0.0005	**N/A**
17. Spiked sample results *(Sample conc. and % recovery of each spike)*	CBP Required 100 ± 20% Study recoveries mean 99.85% 12 spikes	CBP Required 100 ± 20% Study recoveries mean 99.84% 12 spikes	**100 ± 10%**
18. Duplicate sample results *(Rep 1, Rep 2 values and RPDs)*	RPD ≤ 20% Study mean 0.41% 12 sets of dups	RPD ≤ 20% Study mean 2.82% 12 sets of dups	**Not specified.**
19. Raw Data sample pairs *(Submit Excel file or equivalent)*	See file SIF Comparison.xlsx	See file SIF Comparison.xlsx	**N/A**
20. Analyte carry-over	Demonstrated in study that there is no carry-over.	Can experience carry-over when samples are high	**Carry-over should be less than 2%.**