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You may use the back of this form if additional space is required for your written comments.

Comments and thoughts for the new turbidity standards meeting 11/6/19

The statistics used to estimate the 90% or 95% confidence interval at the baseline site are derived from the difference of the minimum and maximal values measure over one tidal cycle. Data must be collected over a minimum of three tidal cycles. One difference is calculated for each tidal cycle. If three tidal cycles are evaluated the statistics are calculated with an N of 3.

Are the measurements at the baseline location, during the prescribed number of tidal cycles, adequate to describe the baseline turbidity variance? Section 2.2 does specify (bottom of pg 10) that "the collected turbidity data are representative of the natural variability in turbidity over a typical tidal cycle." However, there were many concerns that these few data points might not be sufficient.

Is using a tidal cycle as the interval over which the minimum and maximum turbidity values are expected to occur a valid assumption?

Will the baseline measurements truly capture conditions that represent typical meteorological, biological and physical oceanographic conditions at that location? Perhaps it could be specified that the wave field be observed for the days prior to baseline sampling to assure that the wave field had not been particularly large just prior to sampling at the baseline site.

Are the errors associated with sampling turbidity normally distributed? If errors are biased towards higher values, then it is more likely that the confidence interval calculated from the baseline data differences will be biased high as well.

The baseline stations are never revisited during construction. As the baseline station(s) are located above coral or hard-bottom. Is it reasonable to visit these at some interval during construction to assess the turbidity levels. Or perhaps, visit the baseline site if the turbidity criteria is exceeded at the compliance site?

Could protective thresholds for the coral and hard bottom areas be based on time integrated exposure limits rather than instantaneous measurements? If data is collected at the location of corals or hard bottom during construction, could an estimate of the time integrated turbidity loading be given in addition to reporting the instantaneous turbidity values?

The mixing zone is not well described in this document and questions remain regarding how the mixing zone is calculated and how we are assured that no harm occurs inside the mixing zone. Is it possible to take measurements inside the mixing zone?

While turbidity is commonly used to monitor marine construction projects, sedimentation and light attenuation are important parameters for the health of benthic organisms. How best can we assess and monitor a construction effort for these other parameters?

It is possible that turbidity as measured in NTUs is logarithmically distributed? Could this be a source of error in the calculations?