

## Baseline Water Quality as of July 1, 2011 Decision Tree

Baseline water quality is that which is permitted to occur as of July 1, 2011, but may not actually be observable on July 1, 2011 because permitted sources are not discharging at permit limits.

- 1) There is water quality data for pollutant(s) of interest (i.e. an existing source with appropriate discharge monitoring report (DMR) data) upstream of discharge.
  - A. There are no sources of pollutant(s) of interest upstream

Instream data above source being evaluated will be characteristic of water quality (WQ) on July 1, 2011 whether collected before or after that date.

Use ambient upstream WQ measurements to characterize baseline; e.g. the 95<sup>th</sup> percentile, or other statistic appropriate to the pollutant of concern, based on at least a year of monthly data, closest to or including to July 1, 2011 if possible.
  - B. There are other sources of pollutant(s) of interest upstream
    - I. If there have been no changes in discharge between time of WQ measurements and July 1, 2011, then data will be characteristic of July 1, 2011.

Use ambient upstream WQ measurements, as in 1-A above (e.g. 95<sup>th</sup> percentile) AND take into account changes in load, e.g. due to existing upstream sources as if they were discharging at their permitted maximum. Determining changes in loading should be a matter of consulting the permitting records.
    - II. Or else there have been new or increased discharges between time of WQ measurements and July 1, 2011 and so data is not characteristic of WQ on July 1, 2011.

It will be necessary to estimate baseline WQ taking into account changes in load due to new or increased upstream sources, as if they were not discharging, AND any existing sources as if they were discharging at their permitted maximum. Determining changes in loading should be a matter of consulting the permitting and DMR records.
- 2) There is not water quality data for pollutant(s) of interest as of July 1, 2011 (i.e. working with a new source or inadequate data from an existing source).
  - A. Ask discharge applicant to acquire a year of monthly data for pollutant(s) of interest, and then proceed as above.

For conservative pollutants taking into account changes in loading that have been permitted to occur but may not yet be realized may entail simply subtracting out the changes in pollutant loading that has occurred since July 1, 2011, i.e. assume no loss of mass in transport. Non-conservative pollutants (e.g. ammonia DO, nutrients, and temperature) will require modeling of pollutant fate and transport.