Georgia Environmental Protection Division
NPDES Reasonable Potential Procedures
January 2003

40 CFR 122.44(d) requires delegated States to develop procedures for determining whether a discharge causes, has the reasonable potential to cause, or contributes to an instream excursion above a narrative or numeric criteria within a State water. If such reasonable potential is determined to exist, the NPDES permit must contain pollutant effluent limits and/or effluent limits for whole effluent toxicity. Georgia's Reasonable Potential Procedures are based on Georgia's Rules and Regulations for Water Quality Control (Rules), Chapter 391-3-6-.06(4)(d)5. The chemical specific and biomonitoring data and other pertinent information in EPD's files will be considered in accordance with the review procedures specified in the Rules in the evaluation of a permit application and in the evaluation of the reasonable potential for an effluent to cause an exceedence in the numeric or narrative criteria.

Numeric Water Quality Criteria

Priority pollutant scans are required to be submitted as specified in 40 CFR 122.21(g)(7). Publicly Owned Treatment Works will be required to submit the information required by the EPA Application (Form 2A) in accordance with 40 CFR 122.21(j). EPD will review the priority pollutant data in accordance with the procedures specified below and in the Rules to determine the potential that a chemical constituent may exceed its instream criteria.

For the chemical constituents listed in 391-3-6-.03(5)(e)(i)-(vi), the requirements outlined in the Rules under 391-3-6-.06(4)(d)5(ii) will be followed to develop numeric effluent limits. These requirements are summarized below:

I. EPD will review available data for reported concentrations of any of the chemical constituents for which numeric criteria have been established that are measured above detection limits using analytical methods specified in Federal Regulations 40 CFR 136, which establishes guidelines on test procedures for the analysis of pollutants, or that have EPA concurrence.

II. For the chemical constituents identified after completion of (I) above, and/or if other site-specific information available to EPD indicates the presence of one or more of the chemical constituents at levels of concern to EPD (generally above detection limits which are at least as stringent as EPD detection limits), EPD will calculate the instream concentration of the chemical constituents. The instream concentration of a chemical constituent is calculated by dividing the effluent concentration by the appropriate dilution factor. The dilution factor is based upon the permittee's design, permitted or average flow and the critical stream flow as defined in the Rules in Chapter 391-3-6-.06(2)(f). In the case of metals whose instream criteria are in the dissolved form, the dissolved instream concentration is calculated by dividing the total recoverable effluent concentration by the appropriate dilution factor multiplied

by a translation factor. EPD's translation procedure is described in the attachment labeled "Implementation of the Dissolved Instream Criteria for Metals". If the chemical constituent is known to exist in the water upstream from the discharger and if EPD has water quality data that shows what the concentration is, then the instream concentration will be calculated such that the upstream concentration will be accounted for. The instream concentrations will then be compared with the instream criteria. If there is more than one effluent data point available when instream concentrations are calculated, the data points will be averaged together to obtain an average effluent concentration from which an average instream concentration will be calculated. A value of zero will be used for a data point(s) when test results indicate that the concentration of a constituent is below detection limits. The average instream concentration will be compared against the instream criteria. When comparing calculated instream concentrations with the acute criteria, multiple data points will not be averaged together to obtain an average effluent concentration. Instead, the highest effluent data point will be used to calculate the instream concentration and this number will be compared to either the acute criteria or 50% of the acute criteria depending upon whether there are at least 10 data points available as described below.

A. If less than 10 data points are available when the instream concentration is calculated and if the instream concentration is found to be less than 50% of the instream criteria, then the chemical constituent will be considered not to be present at levels of concern. If, however, the instream concentration is found to be greater than or equal to 50% of the instream criteria, then EPD will require the permittee to monitor the chemical constituent once a month for at least 10 months. The monitoring requirement may be placed in the permit, or the permittee may be informed of the monitoring requirement by letter (NPDES Permit boilerplate language allows EPD to require a permittee to monitor parameters not specifically indicated in the permit). The instream concentration will then be recalculated once at least 10 data points are obtained.

B. If at least 10 data points are available when the instream concentration is calculated then EPD will evaluate the data and respond as follows:

    1. The need for a permit limit will be determined as follows:

        a. Comparison against an acute criterion: If the instream concentration (calculated using the highest concentration of at least 10 samples) is greater than the acute criterion, then an effluent limit(s) for that constituent will be required at permit issuance or through a permit modification. If the instream concentration is less than or equal to the acute criterion, then that constituent will be considered to be present in the effluent below levels of concern and EPD will not include the constituent in the permit. If the constituent had previously

been placed in a permit, EPD may terminate or lessen the monitoring requirement for the constituent based on the fact that the data shows that the constituent is not present at levels of concern. If the constituent also has a chronic criterion and if the data shows that a limit is needed based on the chronic criterion (as described below), then EPD will also include a limit based on the acute criterion.

b. Comparison against other criterion: If the instream concentration (calculated using an average of the data) is found to be greater than or equal to fifty percent of its instream standard, then an effluent limit(s) for that constituent will be required at permit issuance or through a permit modification. If the instream concentration of the constituent is found to be less than fifty percent of its instream standard, then the constituent will be considered to be present in the effluent below levels of concern and EPD will not include the constituent in the permit. If the constituent had previously been placed in a permit, EPD may terminate or lessen the monitoring requirement for the constituent based on the fact that the 10 data points shows that the constituent is not present at levels of concern. If the constituent also has an acute criterion and if the data shows that a limit is needed based on the acute criterion (as described above), then EPD will also include a limit based on the chronic criterion.

2. If it is determined that an effluent limit(s) is required as described above, the permit shall be reissued or modified to include an effluent limit(s) for the chemical constituent calculated as follows:

Effluent limit =	criteria concentration	X	dilution factor	X	translation factor (if necessary)

3. The dilution factor is based upon the permittee's design, permitted or average flow and the critical stream flow as defined in the Rules under 391-3-6-.06(2)(f). Translation factors will be used to calculate total recoverable permit limits for metals when the criteria concentration is written in the dissolved form.

4. The effluent limit may be adjusted to reflect natural ambient water quality or the presence of upstream discharges in accordance with the Rules under 391-3-6-.06(4)(d)5(iv)(a) and (v)(b).

III. If the permit is issued or modified to include effluent limitations for chemical constituents, as in II-B above, the limit shall become effective upon issuance of the permit. If a schedule of compliance is granted by EPD, the schedule shall be contained within the permit.

IV. At the request of the permittee, a schedule to allow for the development of a site-specific effluent limit may be established by EPD. This schedule would be contained in the permit and include the following:

A. A requirement that the permittee document that the effluent does not exhibit chronic toxicity under critical stream flow conditions by passing two definitive chronic WET tests, conducted at least 30 days apart, using a vertebrate and an invertebrate as test organisms and using the methods in “Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms, Third Edition, EPA-600-4-91-002" or “Short-Term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Water to Marine and Estuarine Organisms, Second Edition, EPA-600-4-91-003", or the most recent guidance.

B. A requirement for monthly monitoring for all chemical constituents that are being evaluated for site-specific limits.

C. A requirement that the permittee perform site-specific studies, consisting of whole effluent biomonitoring, water-effect ratios, stream studies, or other appropriate studies or calculations. The methodology for these tests will be determined by EPD on a case-by-case basis.

D. A requirement that all data obtained in (A), (B) and (C) above be submitted to EPD for review and approval.

E. No more than two years following initiation of monitoring under II.A above, EPD will use the data to calculate site-specific limitations for each chemical constituent, and will initiate the process to incorporate the limitations(s) into the permit along with requirements for a minimum of annual acute or chronic whole effluent biomonitoring (whichever is appropriate according to its instream wastewater concentration). At any time during the two year period, EPD may, upon its initiative or that of the permittee, review the data that have been submitted and may determine that limits and/or monitoring requirements for one or more chemical constituents may be terminated. All modifications for limits and monitoring requirements will comply with antibacksliding requirements contained in Section 402(o) of the Clean Water Act. Conversely, should EPD determine that adequate data is available before the two year interim monitoring period, it may develop site-specific limitations for the constituent(s) without additional monitoring.

V. For any metals monitored during any portion of the limits determination process, measurement will be by the most appropriate analytical technique approved by the U.S. EPA which provides a measurement of the portion of the metal present which may cause toxicity to aquatic life in the receiving stream. Although the dissolved form of a metal more accurately represents the toxic fraction, measurements of the

total recoverable concentration of metals in the effluent will generally be made. This is partly because permit limits are required to be written in the total recoverable form (40 CFR 122.45(c)) and is also because the concentration of dissolved metal in an effluent can change once the effluent mixes with the receiving stream. It is therefore better to know the concentration of total recoverable metal in an effluent. Translators can then be used to predict how much metal will be in the dissolved form when it enters the receiving stream.

Narrative Water Quality Criteria

For Section 307(a) chemical constituents for which numeric criteria have not been established, whole effluent biomonitoring will be used to develop either a site-specific numeric effluent limit or a Whole Effluent Toxicity (WET) limit. These chemical constituents are listed in 391-3-6-.06(4)(d)5(iii). Historical and permit application WET data may also result in a WET limit. Ammonia and total residual chlorine will be addressed based upon the existing EPD strategies for each of these chemical constituents. Other chemical constituents which are present at levels which may result in toxicity in the receiving stream (and which do not have instream criteria listed 391-3-6-.03(5)(e)(i)-(vi) which can be used to develop effluent limitations to control the toxicity) will be addressed through a monitoring requirement, site-specific numeric effluent limit and/or a WET limit, as appropriate. The following procedures will be followed:

(I) EPD will review available chemical-specific data to determine if any results are greater than their detection limits. The detection limits reported by the permittee must be at least as low as EPD's detection limits for each parameter or they may be lower depending upon the laboratory method used. Laboratory methods used must be those specified in Federal Regulations 40 CFR 136, or that have EPA concurrence.

(II) For Section 307(a) chemical constituents which were detected, the permittee will be required to monitor the specific chemical constituent once a month for at least ten months. The monitoring requirement may be placed in the permit, or the permittee may be informed of the monitoring requirement by letter (NPDES Permit boilerplate language allows EPD to require a permittee to monitor parameters not specifically indicated in the permit). Quarterly chronic or acute biomonitoring may also be required during this period if potential toxicity in the receiving stream is indicated (based upon the permit application, EPD data, historical WET data, etc.). The biomonitoring shall consist of definitive tests, using both a vertebrate and an invertebrate species in the first and second test to determine the most sensitive species for subsequent tests.

(III) If the results of at least ten monthly samples indicate that the chemical constituents are not being detected (at EPD detection limits or lower as described above), and if the quarterly biomonitoring (if conducted) is not showing toxicity (no WET failures as

defined in (IV)(a) below), then EPD may terminate or lessen these monitoring requirements.

(IV) If the results of at least ten monthly samples indicate that the chemical constituents are present at levels of concern (generally above detection limits) or if effluent toxicity has been demonstrated (at least 1 WET test failed), then the permit will be reissued to incorporate a WET limit or a site-specific numeric effluent limit as described below.

(a) If the Instream Wastewater Concentration (IWC) is greater than or equal to 1% effluent, a chronic WET limit will be given. The WET limit will be defined as: "The No Observed Effect Concentration (NOEC) is greater than or equal to the IWC of ___%." The IWC will be based upon the 7Q10 stream flow. If the IWC is less than 1% effluent and a diffuser isn't present, an acute WET limit will be given. The WET limit will be defined as: "The LC50 is greater than or equal to 100% effluent". If a diffuser is present, a chronic WET limit will be given and will be defined as the NOEC is greater than or equal to the IWC of %. The IWC will be based upon the 7Q10 stream flow.

(b) The permittee will be required to perform WET testing once per quarter using definitive tests using both a vertebrate and an invertebrate or using the most sensitive of the two species if EPD gives approval to use a single test species. The permittee will also be required to perform the chemical-specific monitoring once per month.

(c) If the quarterly biomonitoring does not show toxicity for two consecutive quarters (tests performed at least 30 days apart), the biomonitoring frequency and/or the once per month chemical-specific monitoring may be reduced by EPD. In no case will these monitoring frequencies be reduced to less than once per year. If the chemical constituent is not detected for at least 10 months in a row and no WET tests in that time frame are failed, then the WET limit and chemical specific monitoring requirement may be removed.

(V) Historical WET data (5 years old or less) and permit application WET data will be reviewed to determine if any instream toxicity (as defined in (IV)(a) above) was predicted. Minimum WET testing requirements for permittees are detailed in EPD's WET Strategy document. In those instances where there has been a WET test failure, the permit will be issued with a WET limit as defined in (IV)(a) above. The only exceptions to this are if the results of the failed WET tests were determined to be invalid or questionable or if the reason for the failure is known and limits for chemical constituents will provide protection. The permit may contain a compliance schedule to meet the WET limit. The compliance schedule will typically be for 36 months, but at a maximum will not exceed the term of the permit. If a permit is modified to include a WET limit sometime during its five year term and there is less than 36 months remaining in the term of the permit then a 36 month compliance

schedule may be placed in an Order that is issued with the permit. Information about the Order will also be included with the public notice for the permit modification. If the WET test results are questionable, the permittee may be required to conduct additional WET tests before the decision is made as to whether a WET limit is required.

(VI) If the chemical constituents ammonia or total residual chlorine were detected, the existing EPD strategies for each of these pollutants will be implemented. The permit will be issued with site-specific numeric effluent limits for ammonia or total residual chlorine, if applicable, as specified in the respective EPD strategy.

(VII) For other pollutants not otherwise mentioned in these procedures, where the pollutant is present at levels of concern after complete mix in the receiving stream, the permit will be issued with chemical-specific monitoring and/or short-term biomonitoring.