

Question & Answer Supplement (March 31, 2022, PQL Data Handling)

1Q Are there times when “0” should NOT be used for BDL data?

1A. Zero is NOT always appropriate in place of BDL data. For example, we do not recommend its use in the removal rate calculator. The existing removal rate calculator remains available for use and will use ½ the detection value if the “<” symbol is added. If removal rate adjustment is needed though, we would consider approval of other case specific literature removal efficiencies if a POTW presents a compelling argument to do so. Facilities with a significant portion of their analytical data below the PQL can also review EPA’s Local Limits Development Appendices (EPA 833-R-04-002B, Appendix Q, Methods for Handling Data Below Detection Level). There is also additional information on the DWR Pretreatment website area (Removal Rate Guidance 2004) that addresses adjustments to removal rate calculations.

Removal rate calculations and associated actions can be addressed with the pretreatment staff during the HWA activity, including the consideration of using the 8th decile approach.

2Q Which of the multiple PQL lists on the DWR website should be used?

2A. NC-PC Municipal Unit has updated the PQL list (submitted by NC-PC) on the model LTMP website. This will enable users to collect representative sampling at correct PQLs, especially for those who do not have an in-house laboratory and are not updated by the Laboratory Certification Unit. The lab certification unit also posts their most recent PQL information (this is for reference only):

<https://www.deq.nc.gov/about/divisions/water-resources/water-sciences/chemistry-laboratory/quality-assurance>

3Q. What should the monitoring frequency be for the additional time provided for gathering data at the current PQL?

3A. Representative sampling with at least twelve samples (at the correct PQL) over a minimum of a calendar year. The timing noted, allows scheduling the sampling (if needed). This can only be a general guide due to the number of factors involved. Updated tables with required PQLs will be sent to all pretreatment programs in order to assist with the collection of representative samples at the correct PQL, which will reduce the need to re-collect samples for an additional year.

4Q. When would effluent be entering the plant? [if the facility has evaluated all waste streams entering the plant (influent, effluent, sludge) and the results are all below the PQL, then you may also use zero (0) for your uncontrolled/unregulated loading for any parameter.

4A. The noted “strike-though” is accepted, however, reissuing the PQL letter at this time is not envisioned.

5Q. May I use these PQL options even though our sludge disposal method does not require us to collect sludge data for the LTMP?

5A. Yes. Please note if an associated land application activity is occurring, an associated land application permit with monitoring requirements is required and should be a part of the LTMP for that facility. Third-party composting activities do not have an associated 503 permit and monitoring requirements; therefore, sludge monitoring data may not be available and is not required in an LTMP.

6Q. Provide an example of when a facility would obtain 100% BDL in influent, effluent, and sludge, but still have a monitoring requirement or limit in the NPDES permit.

6A. The NPDES permit application may use data for a pollutant up to four- and one-half years old. This **data set may be different** than the pretreatment MAHL review period. So, if LTMP influent, effluent, and sludge results for the HWA timeframe are all below the PQL, then headworks calculations are not required for that pollutant. However, the pollutant will need to continue to be monitored as required by the NPDES permit and/or approved LTMP. There may be **insufficient information about the level of a pollutant** requiring additional sampling before an RPA determination may be made. Additionally, **previous non-compliance, significant new industrial loading, random excursions, or other circumstances may warrant continued monitoring or limits**. In any event, the decision to have the monitoring or limit would have gone through the administrative process when the permit was issued.

7Q. When might an additional pollutant with all BDL data be identified as needing an MAHL as part of a local limits review?

7A. The Permittee shall obtain Division approval of an HWA at least once every five years, and as required by the Division. Within 180 days of the effective date of the NPDES permit (or any subsequent permit modification) the Permittee shall submit to the Division a written technical evaluation of the need to revise local limits (i.e., an updated HWA or documentation of why one is not needed) [40 CFR 122.44]. If influent, effluent, and sludge results are all below the PQL for a pollutant, headworks calculations are not required for that pollutant and that explanation will serve as sufficient justification for why an updated HWA is not needed. Please refer to the attached “Decision Tree” to assist with determination of HWA requirements.

8Q. Please clarify and provide examples for what you intended “Next most limiting factor” to mean for various pollutants.

8A. This refers to the fact that many water quality standards have both chronic and acute values. It would be applicable only if MAHL resulting in over-allocation was based on Pass-through AHL using the most stringent water quality standard (usually the chronic value). The **next most limiting factor is typically the acute water quality criteria where there is an acute value** which may be adjusted for hardness (per the NPDES permit RPA). Neither inhibition nor sludge would be used unless these values are lower than the calculated AHL using the acute criteria.

9Q. What action should be taken if detectable influent, effluent, or sludge data begins to appear in the data set?

9A. The permit holder would need to reassess the MAHL loading to reflect the new data above the PQL to determine whether the original most-limiting factor is now being exceeded. If over-allocation exists due to sludge data, please perform the HASL of the HWA. If over-allocation continues to exist, contact NCDEQ-PT Staff for further guidance.

10Q. If my facility has an unrelated NPDES permit condition or limit violation, does this preclude use of this PQL guidance for other pollutants?

10A. NC-PC recommended response: Unrelated permit conditions/limit violations such as flow, would not preclude one from using the PQL guidance for other pollutants. Please contact NCDEQ-PT Staff for direction if this situation occurs.

11Q. Please explain the reasoning for the restriction to Water Effect Ratio (WER) due to toxicity failures.

11A. **We do not recommend that a POTW conduct a WER that either cannot be accepted by DWR or alternatively must be repeated.** While it might be possible to conduct a WER study during episodic effluent toxicity, practically it would be of little use. The WER study would need to be repeated after the effluent toxicity was eliminated since the original WER study conditions would no longer be valid. **See Appendix L of the Water Quality Standards Handbook** on the development of Water Effect Ratio’s (EPA-823-B-94-001 Use of Water-Effect Ratio in Water Quality Standards) for a number of important considerations and conditions required for the Division to allow site-specific WER value different from that in the NC Water Quality Standards.

12Q. We have only had one day to review this information and only a few members have had the opportunity to provide input. This document simply reflects concerns and opinions as the Grade III instructors. However,

we feel certain additional feedback is forthcoming from other members of the NC-PC and others in the regulated community.

12A. DWR Staff is available to discuss specific cases as they occur

Definitions/Acronyms:

Practical Quantitation Level (PQL)

The PQL is the lowest concentration that can be confidently quantified in wastewater samples and is a function of instrument sensitivity, reproducibility, and precision. The PQL typically represents the lowest concentration point on the calibration curve, and it is always higher (often much higher) than the method detection limit (MDL).

MAHL

Maximum Allowable Headworks Loading

HWA

Headworks Analysis

Uncontrollable = Uncontrolled

To use the most recently approved options for HWA calculations, you must answer the following questions for each parameter to be calculated for the HWA.

USING ZERO FOR HWA UNCONTROLLABLE/UNCONTROLLED LOADING FOR A PARAMETER

1. **Do you have at least 12 influent data points and 12 effluent data points at the NCDEQ Required PQL for the parameter over a minimum of a 12-month period?** <https://deq.nc.gov/water-quality/chemistry-lab/operations/quality-assurance/ncdeqdwrvsslabpqls>
 - a. NO. Stop here. Contact NCDEQ PT Staff for an extension for HWA. NCDEQ requires at least 12 data points for HWA evaluation at the NCDEQ required PQL for all Influent and Effluent data points.

b. YES. CONTINUE to Q2.

2. Are you **required** by regulation to conduct biosolids/sludge analysis for this parameter? [Note: The PQL for influent and effluent does not apply to sludge analyses as a different method is included in 40 CFR Part 503 that may have a variable PQL.]
- NO. The NCDEQ PQL Policy can still apply. CONTINUE TO Q3
 - YES. The NCDEQ PQL Policy can still apply. CONTINUE TO Q3
3. Is all Influent, Effluent, and Sludge [if required] data for this parameter Below Detection Limit?
- NO. I have one or more detections in my data. Stop here. You may not use “0” (zero) as the uncontrolled/unregulated for your HWA. The NCDEQ PQL Policy applies only when all influent, effluent (and sludge if required) data is BDL.
 - YES. You may use “0” as the HWA Uncontrolled/Uncontrollable Loading for this parameter. Go to Question 5 for determine if HWA calculation is necessary for a parameter.
 - My influent and effluent data is all BDL. I do not have sludge data because it is not required.
You may use “0” as the HWA Uncontrolled/Uncontrollable Loading for this parameter. Go to Question 5 for determine if HWA calculation is necessary for a parameter.

NO HWA CALCULATIONS REQUIRED FOR A PARAMETER WHEN INFLUENT, EFFLUENT AND SLUDGE (IF REQUIRED) DATA IS ALL BDL.

Answer Questions 1-3 above to proceed.

4. Does your current NPDES Permit have a limit for this parameter?
- NO. CONTINUE TO Q5.
 - YES. Have you had any detections since the last permit issuance?
 - NO. CONTINUE TO Q5.
 - YES. Stop Here. Determine reason for permit limit and consult with NCDEQ PT Staff.
5. Does your current NPDES Permit include a monitoring requirement for this parameter?
- NO. CONTINUE TO Q6.
 - YES. Have you had any detections since the last permit issuance?

- i. NO. CONTINUE TO Q6.
- ii. YES. Stop Here. Determine reason for monitoring requirement and consult with NCDEQ PT Staff.

6. Have you issued any new SIU permits that include limits for this parameter since the last HWA?

- a. NO. **You will not have to conduct HWA calculations for this parameter.**
- b. YES. Will the SIU be discharging this parameter?
 - i. NO. The Limit was required for Categorical reasons (433, etc.) Consult with NCDEQ PT Staff to be allowed to forego HWA calculations for this parameter.
 - ii. YES. Stop here. You will need to conduct HWA calculations for this parameter.

HWA SHOWING OVERALLOCATION FOR A PARAMETER WHEN INFLUENT, EFFLUENT AND SLUDGE DATA IS ALL BDL – USING NEXT MOST LIMITING FACTOR (not Inhibition or Sludge Criteria) for WQS PASS-THROUGH AHL.

Answer Questions 1-6 prior to proceeding.

7. Does your current NPDES Permit have a limit for this parameter?

- a. NO. CONTINUE to Q8.
- b. YES. Stop here and consult with NCDEQ PT staff. You must use the limit in the NPDES Permit for the Pass-Through AHL calculation

8. Is the HWA MAHL, based on the Water Quality Standard (WQS) AHL calculation, causing the over-allocation?

- a. NO. Stop here. The NCDEQ policy only addresses WQS Pass-Through MAHL. Consult with DWR Staff.
- b. YES. Continue to Q9.

9. Is there a less stringent (acute or chronic) North Carolina WQS for this parameter in your designated receiving stream classification?

- a. NO. Stop here. Consult with NCDEQ PT staff to consider other over-allocation remedies.
- b. YES. **You may calculate the WQS Pass-Through AHL using the less stringent standard, or the 8th decile EPA Removal Rate in your NPDES/WQS Pass-Through formula to re-calculate the MAHL for this parameter.**

10. Are you still over-allocated for this parameter?

- a. NO. Hooray!
- b. YES. Consider other over-allocation remedies. If still over-allocated, contact NCDEQ PT staff for recently approved alternatives for some pollutants.