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Colorado Department
of Public Health
and Environment

TO: Colorado Discharge Permit System Permittees

FROM: Lori Gerzina, Compliance Assurance Section Manager

DATE: March 17, 2009

RE: Changes to Reporting Analytical Results for Analyses Below Practical Quantitation Level or Method Detection Limits

In August 2008, concurrently with a major database conversion project, the Division instituted several data processing procedures intended to improve data quality and increase data entry and compliance review efficiencies. In some permits, for some parameters, reporting requirements make it necessary for the Division to conduct a manual review of the reported data prior to data entry; entering the data most efficiently – exactly as reported and without interpretation - may cause the data system to generate violations when the permit does not intend for the reported condition to be a violation. Such was the case for several permitted facilities after the third quarter of 2008 data were entered, causing concern among the permitted community and requiring additional Division resources to resolve the errors.

The parameters of concern are those where the permitted limit is less than the method detection limit (MDL) or the practical quantitation level (PQL). Although the individual affected permits may vary in content and format, in general, the following parameters are involved:

- Residual chlorine concentrations
- Certain Metals and phenols
- Free cyanide in chlorinated effluent

Your permit may identify these (and possibly other) parameters and instruct you on how to report your results on your DMR. Although the specific reporting requirements may appear in different areas of a permit, they are typically contained in the Part I.B footnotes (c, g, k, l, n, o, and/or t), Part I.E. the Definition of Terms (usually Part I.C) or in the section titled "Analytical and Sampling Methods for Monitoring" (usually contained in Part I.D.3, I.D.5, I.E.3 or I.E.5). Due to changes in standard permit language over the past several years, and depending on when a permit was last renewed, one of the following sets of language, or something similar, is included in the relevant section of the permit:

a) "If all individual analytical results that would be used in the calculations are below the method detection limit, then "less than x," where x is the method detection limit, shall be reported on the monthly DMR. Otherwise, report the calculated value."

b) "When the most sensitive analytical method which complies with this part, has a detection limit greater than or equal to the permit limit, the permittee shall report "less than (the detectable limit)," as appropriate. Such reports shall not be considered as violations of the permit limit. The present lowest practical quantitation limits (PQL) for specific parameters (which have limitations that are, in some cases, less than or equal to the detection limit) are as follows:"

c) "When the most sensitive analytical method which complies with this part, has a PQL greater than or equal to the permit limit, the permittee shall report "less than (the PQL)," as appropriate. Such reports shall not be considered as violations of the permit limit. The present lowest PQLs (State Lab, November 2008) for specific parameters (which have limitations that are, in some cases, less than or equal to the PQL), are as follows:"

The Division is requesting that permittees review their permits, and where the permit includes reporting requirements as described above, they modify how they report these analytical results. Specifically, *if the PQL (or MDL) is greater than the permit limitation (using the lowest available PQL or MDL), then report BDL on the DMR. However, if the PQL (or MDL) is lower than or equal to the permit limit, then continue to report <X, where X=PQL (or MDL). The table below provides several examples:*

Permit Limitation	PQL or MDL	Test Result	DMR Report Value
10	5	<5	<5
10	10	<10	<10
10	15	<15	BDL
10	5	6	6
10	15	15	15*
10	15	16	16*

**A test result greater than the PQL or MDL, when the PQL or MDL is greater than the Permit Limit, is a violation of the Permit.*

Please be advised that although inconsistent with the current permit language, reporting BDL as describe above will **NOT** be considered a permit violation. Also be advised that if any of your analytical results are *not* below the PQL (or MDL) you should report the actual calculated value(s).

If your analytical method did not produce the expected PQLs (or MDLs) as determined by the laboratory protocol, and the PQL (MDL) value is greater than the permit limit you should consider re-running the analysis to avoid incurring a violation, or otherwise addressing the problem with the analytical method.

The Permits Section of the Division intends to amend existing permits to modify the reporting requirements such that the method of reporting described in this memo will become a condition of the permit. Standard reporting requirements will be based on comparisons to the practical quantitation level and all references to the method detection limit will be deleted. New or renewed permits will incorporate this modified reporting requirement.

In the context of this memo, and for reference purposes only, the current, lowest PQLs for specific parameters, as determined by the State Laboratory in November 2008 are provided below. Note that these or alternate PQLs may be included as compliance thresholds in your permit; in that case, the PQLs must be attained. For the PQLs for organic parameters, please refer to the Division's Practical Quantitation Limitation Guidance Document, July of 2008. Future requirements for metals PQLs will be contained in the Division's Practical Quantitation Limitation Guidance Document for Metals.

Parameter	Practical Quantitation Limits,	Parameter	Practical Quantitation Limits, µg/l
Aluminum	50 µg/l	Manganese	2 µg/l
Ammonia	1 mg/l	Mercury	0.1 µg/l
Arsenic	1 µg/l	Mercury (low-level)	0.003 µg/l
Barium	5 µg/l	Nickel	50 µg/l
Beryllium	1 µg/l	N-Ammonia	50 µg/l
BOD / CBOD	1 mg/l	N Nitrate/Nitrite	0.5 mg/l
Boron	50 µg/l	N-Nitrate	50 µg/l
Cadmium	1 µg/l	N-Nitrite	10 µg/l
Calcium	20 µg/l	Total Nitrogen	0.5 mg/l
Chloride	2 mg/l	Phenols	100 µg/l
Chlorine	0.1 mg/l	Phosphorus	10 µg/l
Total Residual Chlorine		Radium 226	1 pCi/l
DPD colorimetric	0.10 mg/l	Radium 228	1 pCi/l
Amperometric titration	0.05 mg/l	Selenium	1 µg/l
Chromium	20 µg/l	Silver	0.5 µg/l
Chromium, Hexavalent	20 µg/l	Sodium	0.2 mg/l
Copper	5 µg/l	Sulfate	5 mg/l
Cyanide (Direct / Distilled)	10 µg/l	Sulfide	0.2 mg/l
Cyanide, WAD+A47	5 µg/l	Total Dissolved Solids	10 mg/l
Fluoride	0.1 mg/l	Total Suspended Solids	10 mg/l
Iron	10 µg/l	Thallium	1 µg/l
Lead	1 µg/l	Uranium	1 µg/l
Magnesium	20 µg/l	Zinc	10 µg/l

These limits apply to the total recoverable or the potentially dissolved fraction of metals.

For hexavalent chromium, samples must be unacidified so dissolved concentrations will be measured rather than potentially dissolved concentrations.

The procedure for determining settleable solids is contained in 40 CFR §434.64. The practical quantitation limit for measuring settleable solids under this part shall be 0.4 ml/l.

If you have questions or concerns about your permit, please contact your permit writer. To discuss the requested reporting change, please contact me at 303-692-3587 or by electronic mail at lori.gerzina@state.co.us.