Implementing Water Quality Standards for Toxic Pollutants in Clean Water Act Permits

Draft Issue Paper

I. Introduction

Placeholder to include:
-Context – revising WQ criteria based on higher FCR
-Purpose, Why we are doing this now
-Policy statement (language recommended for EQC adoption)

II. Background

Placeholder to include:
-History
-General permits info?
-why we need to do this, what we're trying to solve
-Objectives, what we're trying to accomplish
Principles and desired outcomes from the discussion paper – probably pared down
-Process, 3 gov. cooperative effort, stakeholder input, etc.

Description of the Problem (We've started filling in this information)

Permitting Demographics

Theoretically, all individual and general permits will be applicable to the new toxicity criteria. The degree to which these permits are affected by the new criteria is determined by the various monitoring requirements that are mandated by state and federal rule.

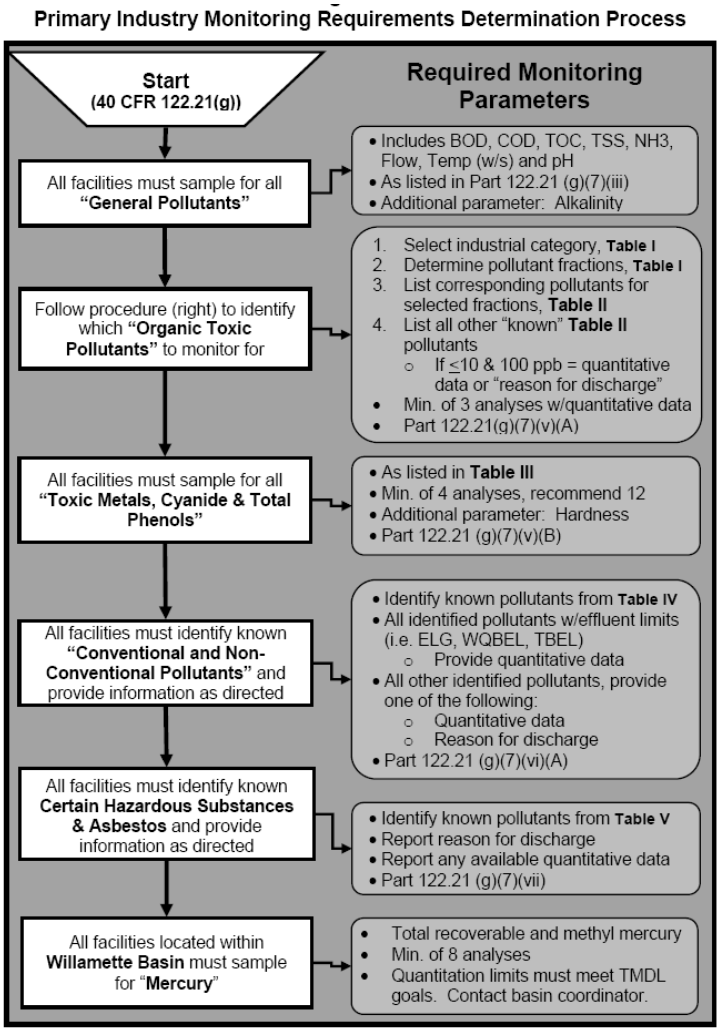
For example, minor domestic sources have much reduced monitoring, and subsequently permitting, requirements than major domestic sources. Industrial permits have a complex process to determine monitoring requirements based on the industrial category and the potential for toxicity in the receiving

waterbody. A flow chart demonstrating the monitoring requirements identification process for "primary Industries" is presented below as an example of a portion of the process.

Based upon current data, the Department has the number of active permits as described in the Table 1 below.

Table 1

Facility Type	No.
Major Domestic	56
Minor Domestic	146
Industrial	149
MS4	22
Total	**373**



Toxic Pollutants on 2004/06 303(d) Integrated Report as Water Quality Impaired

The column headings on Table 2 indicate whether the criteria are for human health criteria (HHC), aquatic life criteria (ALC) protection, or only organoleptic effects (i.e. taste, odor, and color effects). If there are criteria for both uses, the column in which the toxin is located indicates which of those criteria are more stringent. For a complete list of waterbodies which are water quality limited for toxics, please refer to the table in Appendix A.

TABLE 2: 303(d) Listed Toxics From 2004/2006 Integrated Report

HHC	ALC	Organoleptic
arsenic	cadmium	iron
beryllium	chromium	manganese
mercury	copper	
nickel	lead	
Aldrin	silver	
chlordane	zinc	
dichloroethylenes	ammonia	
Dieldrin	pentachlorophenol	
DDE, DDT	chlorpyrifos	
Heptachlor	Guthion (azinphos-methyl)	
PAHs		
PCB		
tetrachloroethylene		
trichloroethylene		

In addition, the following pollutants were identified as pollutants of concern in the 2004/06 water quality assessment report. Given that some of these pollutants were added to this list based on concentrations found through sediment analyses, direct correlations to concentrations in the water column could not be made.

Table 3: Pollutants of Concern from 2004/2006 Integrated Report

Pollutants of Potential Concern	
Acenapthene	Endrin
Aldrin	Fluoranthene
Alkalinity	Guthion
Alpha-BHC	Heptachlor
Ammonia	Iron
Antimony	Isophorone
Arsenic	Lead
Arsenic (tri)	Malathion
Benxo(a)anthracene	Manganese
Benzo(A)anthracene	Mercury
Benzo(A)pyrene	Naphthalene
Benzo(g,h,i)perylene	Nickel
Beryllium	Nitrates
BHC	p,p` DDD
Cadmium	Parathion
Chlordane	PCB
Chlorophenoxy Herbicides (2,4-D)	Pentachlorophenol
Chlorpyrifos	phenanthrene
Chromium (hex)	Phenol
Chrysene	Phthalate Esters
Copper	Polynuclear Aromatic Hydrocarbons
Cyanide	pyrene
DDD	Radionuclides
DDT	Silver
DDT Metabolite (DDE)	Tetrachloroethylene
Dichloroethylenes	Thallium
Dieldrin	Toxaphene
Dioxin (2,3,7,8-TCDD)	Tributyltin
Dioxins/Furans	Trichloroethylene
	Zinc

The Cost of Compliance with Water Quality Criteria for Toxic Pollutants for Oregon Waters

A report[1] written in 2008 provided estimates of the potential incremental compliance actions and costs that could be associated with revising the fish consumption rate. The project identified that there would be permitted sources that would have the potential to exceed currently effective criteria for the following pollutants:

- DDT
- Alpha-BHC
- Arsenic
- Bis (2-ethylhexyl) phthalate (on Table 20 as Di-2-ethylhexyl phthalate)
- Dioxin
- Mercury

Note that arsenic will have a higher proposed criterion under this current rulemaking (and will be for inorganic – not total), which was not reflected at the time of the SAIC report, so some of the compliance issues associated with arsenic may be minimized. Also note that 5 out of the 6 pollutants (not bis-phthalate) identified above have a reasonable potential to exceed or contribute to an exceedance at OR's current fish consumption rate of 17.5 g/day, so the higher proposed criteria for these pollutants may not necessarily create additional compliance concerns.

May add more info on SAIC Report from Sonja

III. Clean Water Act Requirements for Implementing Water Quality Standards in Permits

Placeholder to include:

1. Water Quality-Based Effluent Limits
2. Technology based requirements
3. Compliance schedules
4. Quantitation limits and compliance

[1] Science Applications International Corporation. June 2008. Cost of Compliance with Water Quality Criteria for Toxic Pollutants for Oregon Waters

IV. Recommended New or Revised Permitting Implementation Tools

Tool Options to Address Background Pollutants

Issue Summary

Many pollutants are ubiquitous in the environment because they occur naturally or result from a diffuse variety of human activities. As such, they may contaminate a facility's wastewater through the facility's intake water. For purposes of this overview, these pollutants are referred to as "background pollutants" and potential background pollutants of concern. In Oregon, background pollutants include, but may not be limited to, the following:

- Arsenic, iron and manganese - naturally occurring earth metals present in many Oregon waters at concentrations greater than the currently effective water quality criteria. [2]

- Mercury, PCBs and DDT - pollutants known to be in Oregon waters at background concentrations above the criteria. These pollutants may come from a variety of sources, including air deposition, nonpoint sources, legacy sources and current discharges.

Some point sources in Oregon take water in from and discharge back into water bodies that have background pollutant levels that already exceed the water quality criteria.

For those point sources that do not increase the mass or the concentration of a background pollutant above their intake water levels, an "intake credit" provision (patterned after that used in the Great Lakes) could provide regulatory relief relative to NPDES permit requirements. Such sources would not be responsible for removing the background pollutants they took in via their intake water. For more information on intake credits, see pgs. XX – XX.

Intake credits, however, are not available for facilities which concentrate pollutants in their discharge above that which is found in the intake water. This increase in concentration occurs because some facility processes reduce the volume of water through evaporation (e.g. non-contact cooling), and thus, the same mass is mixed in a smaller volume of water, thereby increasing concentration. Due to this increase in concentration and because the background pollutant levels already exceed the water quality criteria (i.e., no dilution is available through mixing zones), the point source would be required to meet the water quality criterion for that pollutant at the "end-of-pipe."

In Oregon, most facilities recycle their cooling water, using it multiple times before discharging to the receiving stream. Multiple pass cooling allows the facility to withdraw less water from the river (and may conserve heat loss from the stream depending on waterbody characteristics), so is environmentally

[2] We expect the majority of waters where this is currently the case for iron and manganese to be addressed by proposed revisions to those criteria, and also addressed, to a large extent, by revisions to the arsenic criterion.

preferable over single pass cooling. However, it can lead to effluent concentrations that are higher than receiving stream background concentrations for that pollutant.

In situations like this, the discharger cannot remedy the sources of these background pollutants that occur upstream of their discharge. Further, where the ultimate concentration increase in the receiving stream is small, there is concern that implementation of a remedy by the discharger to control the small increase in concentration (e.g., reducing the number of pass through cycles) would result in more environmental damage than leaving the current process in place.

The following discussion describes three potential tools for addressing this situation: (1) general permits, (2) de minimus approach, and (3) multiple discharger variances. All three tools would be applicable to industrial facilities, however, POTWs would not be eligible to implement these tools given their unique situation. For example, municipalities receive their intake water from a wide variety of sources, including regulated and non-regulated entities. All three potential tools are limited to situations where the source water and discharge water are taken from and into the same waterbody. In addition, municipalities will most likely not have issues with concentrating its discharge water due to evaporative treatment processes such as non-contact cooling. Municipal facilities may also be able to take advantage of pre-treatment programs, voluntary pollution prevention programs, or through city ordinances. Although multiple discharge variances are not currently proposed to apply to POTWs, an individual variance may be sought by POTWs for approval.

1. General Permits

A. Description

General permits (GPs) are written to implement common effluent limit requirements for specified categories of minor discharge sources. Pursuant to 40 CFR 122.21 (h), GPs have relaxed monitoring requirements compared to individual permits and may utilize a "net credit" to account for the presence of pollutants in intake water[3].

In Oregon, a qualifying facility would apply for coverage under a general permit by submitting **EPA Form 2E** which reflects the relaxed monitoring requirements[4] when compared to the individual permit application (**EPA Form 2D/C)**. Oregon's administrative rule limit general permits to *minor* facilities or activities and currently uses EPA's *NPDES Non-municipal Permit Rating System* to determine status. General permits may place limits on the quantity and concentration of pollutants allowed to be discharged. To ensure compliance with these limits and conditions, general permits may require monitoring and reporting. In most cases, general permits have a term of five years.

[3] 40 CFR 122.21 (g)(7) Effluent Characterization: The requirements in paragraphs (g)(7)(vi) and (vii) of this section state that an applicant must provide quantitative data for certain pollutants known or believed to be present do not apply to pollutants present in a discharge solely as the result of their presence in intake water; however, an applicant must report such pollutants as present. Net credits may be provided for the presence of pollutants in intake water if the requirements of 122.45(g) are met.

[4] Federal regulations indicates that when characterizing the effluent the traditional monitoring requirements under 40 CFR 122.21(h)(4)(i-iii) do not apply to pollutants present in a discharge solely as a result of their presence in intake water.

The Department currently allows general permits pursuant to the terms and conditions set forth in 40 CFR 122.28 and OAR 340-045-0033. The following table describes the NPDES permits currently offered by the department that describe processes or activities that are also commonly covered in individual industrial permits.

Permit	Description
100-J	Cooling water/heat pumps
200-J	Filter backwash
300-J	Fish hatcheries
400-J	Log ponds
500-J	Boiler blowdown
900-J	Seafood processing
1500-A	Tanks cleanup and treatment of groundwater
1700-A	Washwater
1900-J	Non contact geothermal

B. Applicability/Scope

TO BE COMPLETED

C. DEQ Recommendation

Current practice for many facilities is to co-mingle a variety of process and activities into one effluent stream and maintain a single, all encompassing discharge permit. When addressing permitting issues associated with background pollutants, these facilities should evaluate their operations to determine if they possess processes or activities that could potentially be addressed by one of the Department's general permits. Where appropriate, facilities may consider physical separation of one of the aforementioned processes or activities and separately permit it under a general permit. To facilitate this, the Department should streamline the process by developing guidance describing an administrative pathway and providing technical support.

D. Policy Issues and Objectives

As part of the development of the proposed fish-consumption based human health water quality criteria, it is necessary to develop a series of implementation tools to assist the regulators and regulated community in permitting new and existing facilities. An indentified area of concern is the presence of naturally occurring and legacy pollutants in surface and ground waters used in municipal water systems and industrial non-production applications (e.g. non-contact cooling, boiler water, cooling tower blow down and filter backwash). It has been suggested that a General Permit (GP) might be used to efficiently implement the new water quality criteria for specific categories of discharge, or specific geographic areas.

General permits differ from individual permits in that they only cover one process or activity, where most individual permits cover multiple processes or activities. Additionally, general permits do not have

many of the pollutant monitoring and reasonable potential analysis requirements that individual permits have. Often, individually permitted facilities may contain one or more of the processes covered under general permits. This may lead to the instance where a facility with co-mingled processes and an individual permit would have more stringent effluent discharge limits than if the processes where separately permitted with a combination of an individual and general permit.

The objective of this implementation tool is to develop a process to address the presence of pollutants in source waters by identifying opportunities where the use of a general permit might be more appropriate and result in a more process-specific hazard evaluation.

E. Policy Evaluation

Advantages and Disadvantages

As part of the rulemaking process to address the revised fish consumption values and corresponding human health criteria, a concern was raised by many of the stake holders concerning the effects of naturally occurring and legacy pollutants in source waters. Accordingly, a number of implementation tools have been suggested including a variety of general permit based approaches. The Department selected the approach of using existing General Permit Rule language and permits to address background pollutants from source waters.

Advantages of the selected option are:

- Option is currently authorized through existing rules
- Separate permits with separate effluent streams would simplify permit development and compliance processes
- Could work-in conjunction with other adopted implementation tools (e.g. intake credits)
- Would permit a more succinct evaluation of the environmental hazards of each effluent stream
- Might serve to minimize the degree to which a permittee would have to remove naturally occurring or legacy pollutants from source waters.
- The Department may develop new General Permit categories as long as they meet the requirements[5] set forth in 40 CFR 122.21 and .28 without formal rulemaking

Disadvantages of the selected option are:

- Would require multiple permits, additional administrative time and permitting fees
- Limited in scope to minor facilities and/or activities
- Might require a facility to physically separate effluent streams, although common outfall would be permitted.
- Utility waters would not typically be treated in general effluent treatment systems, resulting in additional masses of pollutants being returned to the source water body.

[5] A general permit may be written for categories that:

- Involve the same or substantially similar types of operations;
- Discharge the same types of wastes or engage in the same types of sludge use or disposal practices;
- Require the same effluent limitations, operating conditions, or standards for sewage sludge use or disposal;
- Require the same or similar monitoring;
- In the opinion of the Director, are more appropriately controlled under a general permit than under individual permits.

Alternatives Considered

Throughout the course of RWG discussions and departmental tool development the following alternatives were investigated and considered as prospective implementation tools:

1. A Broad Spectrum General Permit modeled on the Long Island Sound General Nutrient Permit. This permit was issued by the State of Connecticut to implement a Long Island Sound General Permit. Although the permit contained a couple of innovative features, the most interesting for department's needs was the use of a general permit to collectively implement nutrient effluent limits and operational conditions into individual point source discharge permits. The individual permits reference the nutrient permit conditions set forth in the GP, and had traditional effluent limits and permit conditions for the rest of the applicable pollutant parameters.

   The idea was to develop a single general permit to address background pollutants state wide or over a large geographic area and integrate them into a pollutant trading structure. After consultation with EPA, it became apparent that it was permissible to have a state wide general permit but it was not permissible to utilize established pollutant trading guidance for toxic pollutants.

2. Develop a new GP entitled "Oregon Permitted Facilities Employing Surface or Ground Water as Utility Water" (Utility Water Permit). The permit would cover all the "pass-through type of activities[6], such as non-contact cooling (single & multi-pass), cooling tower blow down, boiler water blow down, pump testing, etc, with a single general permit. The permit would provide a flow-based tiered structure of temperature controls and effluent limits.

   The advantage of this approach would be to pull more activities under coverage by general permits (e.g. pump testing) and potentially consolidate multiple general permits. Based upon feedback from permit writers and analysis of the number of perspective facilities that could utilize this alternative, it was determined there would be very limited applicability relative to the amount of staff time required to develop the alternative.

3. Allow a facility with co-mingled process and non-process waters to apply for a general permit for the applicable non-process activities without having to physically segregate them. The concept of the "imbedded permit" would allow permit writers and facilities to general permit the non-process activities utilizing a system of mid process monitoring and pollutant accounting.

   The advantage of this approach would be to allow for issuance of both a general permit and individual permit without requiring a facility to make capital expenditures to separate the processes. Based upon feedback from permit writers, it was determined that the complexity of the effort to monitor mid process effluent streams and to account for pollutant loading would increase facility operational costs and overly complicate the Department's compliance monitoring role.

[6] Remember here that we are referencing activities. A major facility (>1 MGD) might have a minor activity (<1 MGD).

Summary of RWG discussion and views

To be developed after April 27th meeting.

How is a General Permit Different from a Traditional Water Quality Based Permit?

General permits are typically designed to simplify the permitting process for a class of dischargers by focusing on a small set of water quality indicators (e.g. TSS, pH, etc.) and using them as metrics to limit the permitted process to a specified amount of concentration increase. Additionally, the GP conditions focus on ensuring that additional pollutants (e.g. chemical additives or incidental pollutants) are not introduced into the effluent stream in significant concentrations. This minimizes the cost of regulatory oversight to both the regulator and permittee while applying effluent limits that are generally protective of water quality and reflect standard treatment technology and/or best management practices.

The federal rules that describe the general permit process acknowledge the presence of intake pollutants and exempts them from individual monitoring. This is reflected in 40 CFR 122.21 (g)(7) presented below:

> *Effluent Characterization: The requirements in paragraphs (g)(7)(vi) and (vii) of this section state that an applicant must provide quantitative data for certain pollutants known or believed to be present do not apply to pollutants present in a discharge solely as the result of their presence in intake water; however, an applicant must report such pollutants as present. Net credits may be provided for the presence of pollutants in intake water if the requirements of 122.45(g) are met.*

Part *(g)(7)(vi) and (vii)* refer to the portion of the application process that requires the monitoring of toxic pollutants in a sources effluent. In effect, since there is no requirement to monitor for toxics, there can be no assessment of reasonable potential and no water quality based effluent limits.

E. Policy Evaluation

To be completed

F. Proposed Rule Language

Not applicable

G. Authority and precedence

To be completed

H. Other supporting information

To be completed

I. Implementation information

To be completed

2. De-Minimus

A. Description of Tool

The "background pollutants allowance" would be a water quality standard provision contained in the toxics standard rule (see below for draft rule language). This rule would provide DEQ the flexibility to allow certain permittees to discharge effluent at concentrations above the numeric criterion under the following limited circumstances:

1. The facility is an industrial source that obtains its water from the same water body or a hydrologically connected water (see the intake credit rule definition) that it discharges to;
2. The provision would only apply to human health criteria;
3. The criterion is exceeded in the water body upstream of the discharge;
4. The source of the pollutant is the facility's intake water;
5. The pollutant is not added by the facility through their process (i.e. there is no increase in the mass load of the pollutant in the receiving water);
6. The increase in concentration in the receiving water from the upstream ambient concentration is not greater than:
    a. 1% assuming instantaneous complete mixing with the 30Q5 flow of the receiving stream; or
    b. 1% for the Willamette and Columbia Rivers assuming instantaneous complete mixing with 25% of the 30Q5 flow of the river.
7. All aquatic life criteria and technology based effluent limits must be met.

B. Applicability/Scope

This tool would apply only to industrial facilities that discharge to water bodies currently exceeding the water quality criterion and meet the conditions listed above. This means that the provision would apply to facilities that take water in that contains the pollutant and concentrate it through one of their processes, even though they do not add the pollutant to the wastewater. This would primarily include non-contact cooling facilities, but could also include other processes that cause a decrease in water volume but leave the mass of the pollutant constant, thereby concentrating the pollutant.

As drafted, this provision would not apply to municipal wastewater treatment plants. Municipal wastewater treatment plants receive their inflow from a variety of sources (e.g., households, industry).

Frequently, municipal water supply is from variety of original sources as well, possibly including both groundwater and surface water sources. As a result, the applicable circumstances do not apply.

C. DEQ Recommendation

DEQ recommends that we pursue this approach if there is general support from the Rulemaking Workgroup. At this time, DEQ finds this alternative to the background pollutant issue preferable to adopting a multiple discharger variance for reason discussed further below.

The next steps are to:

- Finalize what amount of increase would be considered to be insignificant from a human health risk perspective and therefore still protect the beneficial use of fish consumption and drinking water, where it is a designated use.
- Develop DEQ's rationale to support a conclusion that this provision, together with the numeric toxics criteria, protects beneficial uses and human health.
- Discuss the proposal with EPA to determine if they identify major flaws or think it is not approvable under the Clean Water Act.

D. Policy issues and objectives

This provision has been drafted to address situations where a facility receives pollutants with their intake water that become concentrated before the facility discharges the water back into the same water body. The water body contains pollutants that are natural or that originated from other upstream sources, and the facility contributes no additional mass to the pollutant load in the water body. To require a facility that uses the water for non-contact cooling, for example, to remove those pollutants is essentially requiring them to clean up pollutants generated by other sources. In some cases, this could make it infeasible for the facility to use the water, yet industrial water supply is a designated beneficial use of the waters of the state.

Without this provision, facilities that discharge to water bodies that exceed the water quality criterion for the discharged pollutant are required to meet the criterion in their effluent at the "end of pipe," before it enters the receiving water. Because the intake water already exceeds the criterion, they would not be able to meet the criterion in their discharge without treatment, even though they add no mass of the pollutant through their process or activity. The intake credit rule is a solution for facilities that take the water in and discharge it back to the river with no increase in mass or concentration. However, the intake credit rule may not be used if facility increases the concentration of the pollutant. Therefore, facilities that reduce the water volume through evaporative cooling or other processes and thereby leave a constant pollutant mass load in a smaller volume of water, may not take advantage of the intake credit provision.

The objective of this policy is to provide a solution that:

1. protects human health,
2. is fair to facilities in the predicament described above, and
3. is not overly burdensome to the Department or the facilities to administer.

Streams that exceed water quality criteria, once listed as impaired, are subject to a TMDL, which will identify the sources of the pollutants and assign wasteload and load allocations to reduce the pollutant loads and meet the water quality standards. Through this process, the pollutant load in the water body will be reduced. As the ambient load is reduced, the concentration in the discharge of facilities using the stream for intake water will also be reduced.

E. POLICY EVALUATION

Advantages and disadvantages

The advantages of this tool include:

1. It provides a fair and reasonable implementation tool. Facilities who do not contribute a pollutant will not be required to clean up the pollution generated by other sources as long as their activity of concentrating that pollutant does not represent a significant added human health risk.
2. Once adopted, this tool would be a more administratively efficient means to accomplish the policy objective for this particular circumstance than having to issue variances. Therefore it would be less costly for the Department, for the permittee and for EPA.
3. This provision would provide more regulatory certainty for sources than a variance approach, at least at this time when DEQ and EPA Region 10 experience with variances is very limited.
4. This meets the EQC policy objective of an environmentally meaningful and cost effective implementation tool for permitted sources.

Disadvantages of this tool include:

1. There is no precedence for this type of standards provision elsewhere.

Alternatives considered

The following tools are alternative means to address this situation:

1. a multiple discharger variance for non-contact cooling water facilities
2. individual variances, and
3. general permits.

A discussion of these implementation tools is included in this issue paper.

A variation to the proposal is that it would apply to pollutants in any intake water and not be limited to intake water from the receiving water body. For example, if the source water included groundwater that would not otherwise enter the water body within a reasonable time frame. Proponents of this variation would argue that if the increase is truly insignificant from a human health perspective it should not matter where the intake pollutants are from. Opponents would suggest that in the latter case, additional mass of the pollutant is being added to the water body and that for persistent pollutants this should not be allowed, particularly when the water body already exceeds the criterion.

DEQ does not recommend this variant. Based on discussions of the RWG regarding the need for this provision and uncertainty regarding its use, DEQ recommends keeping the provision focused on the specific circumstances described above and included in the proposed language below.

Summary of RWG Discussion and Views

There is general agreement amongst Rulemaking Workgroup members with the policy objective stated above.

The permitted facility representatives emphasize the need for the implementation solution to be fair, provide regulatory certainty and be cost-effective. Their view is that in this situation the facility is not contributing to the human health risk because there is already a problem in the river and the effect of their facility is relatively negligible or "*de minimis*."

The environmental organizations on the Rulemaking workgroup emphasize the need to ensure that the human health impact is negligible, perhaps even within the margin of error or certainty that there would be any change in human health risk due to the facility at all. Some of the environmental organizations have the view that even though a facility does not contribute a pollutant, if they concentrate the pollutant through their activity they are contributing to the problem and the standards violation, because standards are written as instream concentrations.

F. PROPOSED RULE LANGUAGE

OAR 340-041-0033 (3). If the background pollutant concentration in a water body exceeds an applicable human health criterion, a limited increase from the ambient concentration immediately upstream of a discharge may be allowed by the Department if all of the following conditions are true:

a) The increase is caused by the existing discharge of a permitted industrial facility.

b) The mass of the pollutant in the discharge does not exceed the mass that is attributable to the pollutant in the facility's intake water.

c) The pollutant concentration is not increased more than 1% above the upstream ambient concentration:
    a. For the Willamette and Columbia Rivers, assuming instantaneous complete mixing of the effluent with the 25% of the 30Q2 flow of the water body;
    b. For all other waters, assuming instantaneous complete mixing of the effluent with the 100% of the 30Q2 flow of the water body.

d) The discharge complies with all applicable technology-based effluent limits, other applicable water quality standards, and the provisions of any applicable total maximum daily load.

e) No other technologically and economically feasible means that would not have significant adverse environmental consequences are available to reduce the pollutant concentration in the discharge to the applicable water quality criterion.

Definitions:
"Background pollutant concentration" means upstream ambient concentration, whether due to natural or anthropogenic upstream sources.

G. AUTHORITY AND PRECEDENCE

DEQ believes that this provision is within the state's authority to establish water quality standards under the Clean Water Act and under State statutory authority for the EQC to adopt rules and implement the CWA in Oregon. DEQ must provide supporting documentation to EPA that demonstrates that "101a" uses (swimming and fishing, for human health) and other beneficial uses designated by the state are protected by the proposed criteria. EPA must approve or disapprove the criterion based on whether they conclude that it will protect uses and meet the requirements of the CWA.

DEQ is not aware of any precedence for this approach being explicitly used for toxics criteria. The general approach of allowing a minimal relative increase of a pollutant such that it does not impact the beneficial uses has been used for other parameters, such as temperature and turbidity, though the circumstances of each of these is different. For example, both temperature and turbidity include provisions that allow a limited increase from ambient conditions. These criteria are based on effects to aquatic life, they are pollutants that are part of the natural environment and have a high degree of variability, and the criteria are not derived from calculations that take into account exposure and risk.

H. OTHER SUPPORTING INFORMATION

Rationale for Beneficial Use Protection

Where a water body is already water quality limited for a human health criterion, DEQ believes that a 1% or less additional increase in concentration for a very limited section of river where there is no increase in the mass load of the pollutant in the water body would not be reasonably likely to increase human health risk. The human health criteria for fish consumption are based on eating 175 grams per day of fish. People who eat that quantity of fish are obtaining them from multiple water bodies, often including marine waters. Only a very small portion of the fish eaten, if any, would be affected by such a small increase in concentration that is very limited in extent within the water body. For carcinogens, the risk is based on exposure over a life time, and even for non-carcinogens, the cumulative exposure to attain a level where effects occur could occur over a long period of time. Therefore, we would not expect the 1% incremental increase allowed through this provision in very limited stream reaches to measurably change the exposure received by people eating fish.

The human health risk that is present due to the fact that the river exceeds the criteria and the sources of the pollutant should be addressed. If a community water supply intake is present in the reach of the stream that exceeds the criteria, they should take appropriate action. Again, the insignificant incremental increase that would be allowed under this provision would not change the need for the water source to address the issue.

I. Implementation Information

To be completed

3. Multiple Discharger Variance

A. Description of Tool

A variance is a standards provision which allows a discharger a temporary exemption from meeting applicable water quality standards. Variances must be supported with a demonstration based on at least one of the factors found at 40 CFR 131.10(g). For more detailed information on variances, see pgs. XX – XX.

Rather than issuing one variance per discharger, a multiple discharger variance (MDV) is a variance that applies to more than one discharger who cannot meet limits for certain limits. In the case of Oregon, DEQ is considering adopting a MDV into its water quality standards regulation to address facilities with non-contact cooling water that cannot meet specific human health criteria for toxics pollutants due to concentrating those pollutants. Multiple discharger variance provisions and procedures have historically been established in other states for a particular type or class of discharger (e.g., POTWs) and a particular pollutant (i.e. mercury). While multiple dischargers may apply for coverage under a MDV once it has been established (by adoption into water quality standards) and approved by EPA, each discharger must

submit an application to DEQ for coverage. Application requirements are described in the procedures associated with the MDV provision.

The MDV provision would be adopted by the Commission into Oregon's WQS regulation. However, each application of the variance in individual permits would be granted by DEQ, and would be granted in conjunction with the NPDES permitting process.

The MDV provision is submitted to EPA for review and approval under CWA § 303(c), with an accompanying feasibility demonstration. The subsequent application of the variance in individual NPDES permits is carried out by DEQ and is not submitted to EPA for review and approval under CWA § 303(c).

The public notice and comment period for the MDV provision occurs at the time of its adoption into the WQS regulation. Implementation of the MDV conditions in a discharger's permit does not require any additional public notice and comment requirements other than what is already required for a discharger's draft NPDES permit.

As part of each NPDES permit renewal, the discharger would request continued coverage under this rule and provide information and water quality data to show that it meets each of the applicability criteria described below in section B.

B. Applicability/Scope

Multiple discharger variances allow the Department to address reoccurring issues faced by numerous dischargers. In this instance, facilities with non-contact cooling waters that are unable to meet the human health criteria for specific toxic pollutants will likely have similar justifications for their inability to meet the criteria. A MDV that covers this scenario would allow facilities to simply demonstrate that they meet the prerequisites to be covered by the MDV, rather than going through a more rigorous individual variance process. A narrowly tailored MDV provision applying equally to any discharger fitting within the boundaries of the provision would save resources for facilities and the Department. The provision, as described, would only apply to industries with non-contact cooling waters meeting certain specified conditions. Municipal wastewater treatment facilities would not be eligible for a MDV because the same fact pattern would not exist.

Specifically, the MDV would apply to industrial dischargers who:

1. withdraw intake water containing a pollutant concentration that already exceeds the applicable human health water quality criterion, and
2. use this water for non-contact multiple pass cooling purposes, and :
    a. the discharge is to the same body of water from which the intake water is withdrawn
    b. the mass of the pollutant in the discharge does not exceed the mass that is attributable to the pollutant in the facility's intake water, and

c. the increase in the pollutant's concentration after complete mixing with the waterbody does not significantly increase the concentration in the waterbody, nor pose an unreasonable risk to human health.

In addition to meeting the applicability criteria above, the Commission must determine that it is infeasible for such dischargers to meet human health criteria for toxics pollutants for one of the reasons identified below (per 40 CFR 131.10(g)(1) and (3) demonstration factors):

1. Naturally occurring pollutant concentrations prevent the attainment of the use; or
2. Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place.

Industrial permits

Based upon knowledge of process and DEQ permit writer input, the primary industrial categories with a potential to significantly increase discharge concentrations are power generation, timber and wood product manufacturing and, metal working and smelting activities. The most significant process responsible for the increase in concentration is the use of multi-pass non-contact cooling waters. Out of a current pool of 110 individual NPDES industrial permits in Oregon, 39 (7 major and 32 minor) were identified by using this information as having the potential to possess non-contact utility water activities that might significantly increase the concentration of the pollutants in their source waters. The locations of these facilities are relatively well distributed throughout the state with the largest number of facilities (6) discharging to the Columbia and (5) Willamette Rivers.

The Willamette River has 11 303(d) listings for toxic pollutants, while the Columbia River has 4 listings for toxics. There are 9 waterbodies listed for iron, manganese, or arsenic, however, DEQ does not expect these three pollutants to have a compliance issue once the revised proposed criteria are effective. Fourteen other waterbodies where these potential non-contact cooling facilities discharge to are not currently listed for toxics (See Table 3). In effect, there are approximately 15 potential non-contact cooling facilities which discharge to 6 waterbodies currently listed for toxics (does not include facilities where the receiving stream is only listed for arsenic, iron, manganese, or ammonia).

Most industrial facilities in Oregon are required to monitor for toxics "known" to be in their processes, although those facilities with a greater potential for toxicity are required to monitor for larger blocks of pollutants typically associated with their industrial categories. The result is that most larger and "major" facilities have the requirement to monitor for a larger pool of pollutant parameters, many of which are typically seen in Oregon's surface and ground waters. Consequently, if a facility does not use a particular pollutant in their process, there may still be the requirement to monitor for it in their intake/effluent depending on their specific circumstances.

Table 3: Toxics Listing Status for Receiving Waterbodies of Industrial Facilities Which Have a Potential to Use Non-Contact Cooling Processes

Potential Non-Contact Cooling Facility Receiving Waterbodies (# of facilities)	Toxics 303(d) Listing
Bear Creek (1)	
Columbia River (6)	Arsenic, DDE, PCB, PAH
Columbia Slough (1)	Iron, Manganese
Grande Ronde River (1)	
Klamath River (2)	Ammonia
Little Deschutes River (1)	
McKay Creek (1)	Iron
McKenzie River (1)	
Molalla River (1)	
Nehalem River (1)	
North Slough (1)	
Noti Creek (1)	
Oak Creek (Calapooia Drainage) (1)	
Pacific Ocean (1)	
Phillips Creek (1)	
Pudding River (1)	DDT, Iron, Manganese
Rock Creek (1)	
Santiam River, North (1)	
Scoggins Creek (1)	
Snake River (2)	Mercury
Umpqua River, South (1)	Arsenic, Cadmium
Wiley Creek (1)	
Willamette River (4)	Aldrin, Arsenic, DDT, DDE, Dieldrin, Iron, Manganese, Mercury, PCB, Pentachlorophenol, PAH,
Willamette River, Coast Fork (1)	Iron, Mercury
Willamette River, Middle Fork (1)	
Willow Creek (1)	Arsenic
Yamhill River, North (1)	Iron, Manganese
Yamhill River, South (2)	Iron

C. DEQ Recommendation

Based on the information compiled regarding the potentially affected entities, and the other tools being pursued as part of this rulemaking package, DEQ does not see a compelling case to include a MDV provision within this package

Preliminary research by DEQ staff reveals that relatively few facilities (approximately 15) that discharge to an impaired waterbody for toxics would meet the MDV criteria as currently drafted. Of the 15 facilities, there are 3 industries categorized as major facilities. The other 12 facilities are categorized as minor facilities which typically have a lower regulatory burden to monitor for toxics, subsequently reducing their potential to detect toxics in the effluent.

To date, EPA has only approved MDVs for a single pollutant (i.e. mercury) in the states of Michigan, Indiana, and Ohio. In order for a MDV to be useful as a tool for addressing background concentrations of pollutants in Oregon, the provision would need to include more than one pollutant. Although some ambient data have been collected on toxic chemicals, there are not definitive studies to indicate which pollutants should be included within a MDV. DEQ would need to identify the pollutants that, based on the information available, are most likely to present issues for facilities in this context. The most basic analysis could identify toxics on the current 303(d) list, recognizing this approach may unintentionally exclude future pollutants of concern.

Discussions to date with EPA indicate that DEQ would need to provide a more robust justification (per 131.10(g)(1) or (3)) that would be equally applicable to any discharger/pollutant combination for which a variance could be issued under this MDV. Other specific details will need to be developed as well.

While DEQ does not recommend incorporating a multiple discharger variance to address background pollutants as part of this rulemaking package, DEQ does not rule out exploring this approach further as part of future rulemakings. Over time, DEQ will gain knowledge and experience relative to ambient and facility data and develop a better understanding of the types and numbers of facilities that could request variances, the pollutants of concern, and the review and approval process. If warranted, DEQ could develop a MDV based on more specific information at a later date.

D. Policy Issues and Objectives

Some dischargers in Oregon will likely find it difficult to meet more stringent human health criteria and may request variances from meeting water quality standards. Further, DEQ has identified a situation where a number of facilities may request a variance based on the same applicability factors, as described in section B above for non-contact cooling facilities. No other scenarios were identified by work group members. DEQ considered the inclusion of a MDV as part of its 2011 rulemaking proposal as a way to streamline the variance approval process by grouping facilities with similar circumstances

and rationales under one variance approval process, so that staff would not need to replicate the analysis and process on an individual basis.

There are few states which have adopted provisions for multiple discharger variances (i.e. MI, OH, and IN). States that have adopted MDVs, have been approved for a single pollutant (e.g. mercury). Given the wide occurrence of background pollutants and the lack of toxic ambient monitoring data in Oregon, the MDV would need to include multiple background pollutants in order to capture potential toxics of future concern and be a useful tool for facilities. More discussions with EPA are necessary to explore how the inclusion of more than one pollutant could be accomplished within a MDV context.

A variance may only be granted where there is a demonstration that one of the use removal factors (40 CFR 131.10(g)) has been satisfied. The 131.10(g) demonstration for the MDV would rely on either, or a combination, of the following two factors:

(1) naturally occurring pollutant concentrations prevent the use, and/or

(3) human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place

Further discussions with EPA are necessary to determine what supporting information DEQ would need to provide to EPA in order to support a single up-front approval action. For example:

- Selection of specific criteria for which the MDV would be applicable
- A rationale per 131.10(g)(1) and/or (3) that would be equally applicable to any discharger/ pollutant combination for which a MDV could be issued under the provision
- A determination that treatment or other alternative options do not vary significantly amongst dischargers, and
- Detailed information on how DEQ would make its determination as to whether factor 1 and/or 3 is supported in any given case. Preliminary discussions with EPA have indicated that factor 3 will be less challenging to support, than the justification for factor 1.

Additional issues to discuss with EPA include; interim effluent limits, process for EPA renewal/approval of MDVs, and duration of a MDV.

E) POLICY EVALUATION

Advantages and Disadvantages

Advantages:

- Could potentially cover facilities that have non-contact cooling concentration issues without issuing individual variances with each permit which requires separate EPA approval, thus streamlining the approval process.

Disadvantages:

- DEQ will need to provide a more rigorous upfront demonstration of 131.10(g) factors and explore how much variability exists in evaluating alternatives to treatment for non-contact cooling facilities.
- Relatively narrow applicability--would not include other water quality issues affecting increased effluent concentrations for industrial facilities.

Alternatives Considered

Additional provisions in Variance Rules

One alternative to a MDV considered during work group discussions was to develop a separate provision (i.e. "background concentration allowance") within the variance rules which would describe the kinds of information that DEQ expects would lead to granting a variance for facilities that concentrate background pollutants. The objective of this provision would be to facilitate approval for dischargers meeting certain criteria as well as to provide more specificity and certainty regarding the kind of information DEQ would expect to receive from facilities and how it would evaluate this information in arriving at the conclusion that a variance was warranted in similar situations. This provision would be applicable to either non-contact cooling or contact cooling processes. Each discharger would provide DEQ with a rationale per 131.10(g)(1) and/or (3) that would be applicable to its discharge, as well as data and information to show that it meets the rule's applicability criteria. EPA would need to approve each variance request.

Advantages:

- Could potentially address a broader set of circumstances than non-contact cooling; could also address facilities that concentrate background pollutants but that come into contact with other process water.
- Provides in rule, additional specificity regarding the kind of information DEQ and EPA would expect to grant/approve a variance.
- Would most likely streamline the EPA approval process by providing an upfront rationale.

Disadvantages:

- Requires EPA review and approval for each variance issued with the permit.

Additional Detail in IMD

The last option briefly discussed with the work group members on a January 15, 2010 conference call was to not include any provisions in the variance provisions addressing background concentration issues. Instead, information supporting variances based on background concentration issues could be more explicitly illustrated in an Internal Management Directive to assist permit writers in evaluating variances based on 131.10(g)(1) and/or (3) factors. This illustration would also, most likely, streamline the EPA approval process.

Advantages:

- DEQ would be able to further evaluate ambient and facility data and develop a better understanding of the types and numbers of facilities that could request variances, the pollutants of concern, and the review and approval process. The information contained in the IMD could be adaptive to reflect information and understanding gained over time.

Disadvantage:

- An upfront demonstration rationale for granting variances based on background pollutant concentrations would not be provided in rule.
- A lack of rule provisions not specifically addressing industrial facilities with background pollutant concentration issues could potentially cause an administrative burden on both discharger and DEQ staff in reviewing and approving variances based on similar situations, such as a non-contact cooling scenario.

Summary of RWG Discussion and Views

Multiple discharger variances and the alternatives discussed here have been discussed on several occasions with work group members, including at least one work group meeting and a subsequent conference call. Several major areas remain for DEQ staff and stakeholders to discuss should a multiple discharger variance be included in this rulemaking package.

Discussions to date indicate some members would not be comfortable with DEQ adopting and implementing a MDV with the information they have been presented with thus far. Others have expressed that DEQ should proceed with a MDV if a MDV would alleviate burdens associated with an individual variance request and approval process. A few members stated that in absence of a MDV, providing a background concentration allowance in the variance provisions would provide greater

confidence that either DEQ or EPA would approve the variance based on certain background pollutant conditions.

Future discussions provided here…..

F. Proposed Rule Language

Multiple Discharger Variance

340-041-0059

Water Quality Variances

[1 – 8] …. This proposed language immediately follows the variance provisions. Note that this language is the same language work group members last received. If a MDV was to go forward, this language will very likely be modified for clarification purposes, as well as address potential EPA concerns.

(9) Variances for Multiple Dischargers or Water Bodies.

(a) If the Department determines that a multiple discharger or water body variance is necessary to address widespread water quality standards compliance issues, including the presence of human-caused or naturally high background levels of pollutants in a watershed, the Commission may adopt a variance for multiple dischargers or water bodies through a separate rule provision.

(b) Before a multiple discharger or water body variance is adopted, the Department must demonstrate that attaining the water quality standard(s) is not feasible for one of the reasons identified in section (2) of this Rule;

(c) A multiple discharger or water body variance must include: the applicability and duration of the variance; the procedures for dischargers to follow in applying for coverage under the variance; any permit conditions necessary to implement the variance; and renewal requirements;

(d) A multiple discharger or water body variance, as a provision of DEQ's water quality standards, is not effective until it is approved by EPA.

Other Implementation of Water Quality Criteria

(1) …….

[Section 2 below will replace the current variance language]

(2) Multiple Discharger Variance for Non-Contact Cooling Facilities. With the adoption of this rule, the Commission determines that permittees which use multiple pass cooling and cannot meet the water quality toxic criteria for human health due to either natural or human-caused pollutants which already exceed water quality criteria in a waterbody will not be required to meet calculated water quality-based effluent limits. For purposes of this section, "multiple pass cooling water" means water used for cooling that does not come into direct contact with any raw material, intermediate product, final product or waste product, not including additives, and makes at least two passes for the purpose of removing waste heat. The alternative requirements and information required to be submitted by the permittee are described in the following subsections.

(a) Findings of the Commission.

(A) The Commission finds that where pollutant levels exceed human health criteria and are of natural origin, and where those pollutants are in the facility's intake water, and the facility uses a non-contact multiple pass cooling system, that the naturally-occurring pollutant levels result in the facility being unable to meet the applicable water quality standards addressing human health toxic pollutants. Further, the Commission finds that remedying these naturally-occurring pollutants would result in unwarranted environmental impact on other water quality standards parameters, including temperature, and could adversely impact water quantity.

(B) The Commission finds that where pollutant levels exceed human health criteria and are of human origin, and where those pollutants are in the facility's intake water, and the facility uses a non-contact multiple pass cooling system, that the anthropogenic pollutant levels result in the facility being unable to meet the applicable water quality standards addressing human health toxic pollutants. Further, the Commission finds that remedying these pollutants of human origin would result in unwarranted environmental impact on other water quality standards parameters, including temperature, and could adversely impact water quantity.

(C) Conditions to Grant a Background Concentration Allowance. Permittees will be covered under this provision and the conditions and requirements described in this section will be included in their NPDES permit where the following conditions exist;

(i) The mass of the pollutant in the discharge does not exceed the mass that is attributable to the pollutant in the facility's intake water;

(ii) The increase in the pollutant's concentration after complete mixing with the waterbody does not significantly increase the concentration in the waterbody;

(iii) Remedies to reduce the pollutant of concern would cause more environmental damage to correct than to leave in place; and

(iv) The pollutant's concentration after mixing with the waterbody does not pose an unreasonable risk to human health.

(D) Demonstration for Request. An applicant is required to submit documentation and data necessary to support a background concentration allowance. The application must be included with the applicant's renewal application and include all relevant information that demonstrates the following;

(i) Sufficient data to characterize natural or human-caused background pollutant contributions to water quality criteria violations; and

(ii) Treatment or alternative options considered to meet water quality standards, and a description of why these options are not technically feasible;

(iii) [Others?]

(E) The facility must continue to achieve the lowest effluent concentration possible under current operations and treatment based on facility-specific data.

(F) If the Department finds that the facility meets the requirements of this section, the terms and conditions described in this section will be included in the facility's NPDES permit for the duration of the permit. DEQ may extend coverage under this provision in subsequent permit terms upon review of updated information submitted in renewal applications.

Background Concentration Allowance

340-041-0059

Water Quality Variances

[Note that this language is the same language work group members last received.]

(8) Individual variances for background pollutants. The Department expects that the justification for a variance required in (2)(a) and (2)(c) would be met and that a source would qualify for a variance under the following circumstances:

(a) The pollutant concentration in the intake water body exceeds an applicable human health water quality criterion due to naturally occurring pollutant concentrations, human-caused conditions or sources of pollution, or a combination of naturally occurring and human-caused conditions or sources of pollution;

(b) The mass of the pollutant in the discharge does not exceed the mass that is attributable to the pollutant in the facility's intake water;

(c) The increase in the pollutant's concentration after mixing with the water body does not increase the concentration in the water body by more than three percent;

(d) The cumulative increase in the pollutant's concentration under variances granted under this paragraph (8)(d) at any point in the water body after discharges mix with the water body does not exceed ten percent;

(e) The discharge of the pollutant complies with all applicable technology-based effluent limits, other applicable water quality standards, and the provisions of any applicable total maximum daily load; and

(f) No other technologically and economically feasible means that would not have significant adverse environmental consequences are available to the source to reduce the pollutant concentration in its discharge to the applicable water quality criterion.

G. Authority and Precedence

The federal WQS regulation at 40 CFR § 131.13 authorizes states and authorized tribes to include variances in their WQS. Variance policies and individual variances are required to be submitted to EPA for review and approval. For specific references on variance authority, refer to footnotes XXX, under the variance subchapter.

There are few states with an EPA approved multiple discharger variance. While many, if not all of the Great Lake states have MDV provisions within their water quality standards regulations as part of the Great Lakes Initiative, Michigan, Indiana, and Ohio are the only states which actively implement multiple discharger variances for mercury[7].

Michigan

One example of a MDV that has been approved and subsequently renewed is the state of Michigan for mercury associated with a wildlife use designation. Although the MDV provision in the WQS regulations is general, there is a detailed implementation strategy that must be renewed every 5 years. The MDV is a 5 year permit applicable to either industrial or municipal facilities and applies to all state waterbodies.

[7] Through communication with Dave Pfeiffer, EPA Region 5 Office and Danielle Salvaterra, EPA Headquarters April 14, 2010

The basis for determining whether or not a designated use is feasible to meet is based on 40 CFR § 131.10(g)(6)-- Controls more stringent than those required by sections 301(b) and 306 of the Act would result in substantial and widespread economic and social impact. For more information on MI's MDV, please see Appendix B.

Indiana and Ohio

These states have specific WQS regulatory language to implement a multiple discharger variance for mercury.

Wisconsin

Wisconsin includes a finding within the WQS regulatory language which references studies conducted by Ohio for their mercury MDV. The objective is to streamline the variance approval process. However, each variance is individually submitted and approved.

H. Other Supporting Information

None

I. Implementation Information

More research is needed to fully detail this section. Some of the implementation procedures will be very similar to individual variances in that some information will need to be provided to DEQ to evaluate whether or not a discharger meets applicability criteria; however, the expectation is that the process will be less burdensome, since DEQ would have provided a sound demonstration rationale within a separate MDV provision. Since this provision effectively limits the scope of facilities to those who only concentrate pollutants through a non-contact cooling process and do not add mass, a pollutant minimization plan would not be required.

Under DEQ's draft approach:

- Each discharger meeting the applicability criteria will most likely be required to individually provide DEQ the information necessary to support the 131.10(g) demonstration which may include:
    - Sufficient data to characterize that factor (1) or (3) is supported
    - Treatment or alternative options considered
    - A description of why implementation of these options would cause more environmental damage than the small increase in pollutant concentration
- During the variance period, the facility would be required to achieve the lowest effluent concentration possible under current operations and treatment and based on facility-specific data.

- MDVs would be applicable for the duration of the NPDES permit term.
- MDVs could be extended upon the submittal of a renewal application from the discharger; however, details about what should be included in the discharger's renewal application have not yet been explicitly identified.
- Upon expiration of the variance, the underlying numerical criteria have full regulatory effect.

A MDV provision must be approved by the Commission. It is only effective after subsequent EPA approval. Current knowledge suggests that the multiple discharger variance rule provision would undergo periodic DEQ review at a regular interval (e.g., 5 years) to ensure that the conditions and DEQ's conclusions regarding the basis for the multiple discharger variance is still supported. Results of these periodic reviews would be submitted to EPA for review.

Appendix A

Waterbodies* Listed for Toxics on the 2004/2006 Integrated Report[8]

Watershed (USGS 4th Field Name)	Water Body (Stream/Lake)	303(d) Toxics Listing
COAST FORK WILLAMETTE	Coast Fork Willamette River	Iron, Mercury
COAST FORK WILLAMETTE	Coast Fork Willamette River / Cottage Grove Reservoir	Mercury
COAST FORK WILLAMETTE	Dennis Creek	Mercury
COAST FORK WILLAMETTE	Row River / Dorena Lake	Mercury
COOS	Elk Creek	Iron
COOS	Isthmus Slough	Manganese
COQUILLE	Fishtrap Creek	Iron
CROSSES SUBBASINS	Columbia River	Arsenic, DDE, PCB, PAH
CROSSES SUBBASINS	Klamath River	Ammonia
CROSSES SUBBASINS	Malheur River	DDT, Dieldrin
CROSSES SUBBASINS	Owyhee River	Arsenic, DDT, Dieldrin, Mercury
CROSSES SUBBASINS	Snake River	Mercury
CROSSES SUBBASINS	Willamette River	Aldrin, Arsenic, DDT, DDE, Dieldrin, Iron, Manganese, Mercury, PCB, Pentachlorophenol, PAH,
CROSSES SUBBASINS / LOWER OWYHEE	Owyhee River / Owyhee, Lake	Mercury
DONNER UND BLITZEN	Bridge Creek	Iron, Manganese, Beryllium
DONNER UND BLITZEN	Little Blitzen River	Beryllium
GOOSE LAKE	East Branch Thomas Creek	Iron
GOOSE LAKE	Thomas Creek	Iron
JORDAN	Jack Creek / Antelope Reservoir	Mercury
JORDAN	Jordan Creek	Arsenic, Mercury
LOST	Klamath Strait	Ammonia

[8] For information on the 2004/2006 Integrated Report, please visit: http://www.deq.state.or.us/wq/assessment/rpt0406.htm

Watershed (USGS 4th Field Name)	Water Body (Stream/Lake)	303(d) Toxics Listing
LOST	Lost River	Ammonia
Lower Columbia	Unnamed Creek	Chromium (hex)
Lower Columbia	Unnamed Creek	Copper
Lower Columbia	Unnamed Creek	Iron
Lower Columbia	Unnamed Creek	Manganese
Lower Columbia	Unnamed Creek	Zinc
LOWER OWYHEE	Overstreet Drain	Copper, Iron, Lead, Manganese
LOWER WILLAMETTE	Arata Creek / Blue Lake	Ammonia, Manganese
LOWER WILLAMETTE	Columbia Slough	Iron, Manganese
LOWER WILLAMETTE	Johnson Creek	DDT, Dieldrin, PCB, PAH
LOWER WILLAMETTE	South Columbia Slough	Iron, Manganese
MCKENZIE	Blue River	Manganese
MCKENZIE	Mohawk River	Iron
MIDDLE COLUMBIA-HOOD	Dog River	Beryllium, Iron
MIDDLE COLUMBIA-HOOD	East Fork Hood River	Beryllium, Copper, Iron
MIDDLE COLUMBIA-HOOD	Evans Creek	Beryllium, Copper, Iron
MIDDLE COLUMBIA-HOOD	Hood River	Beryllium, Copper, Iron
MIDDLE COLUMBIA-HOOD	Indian Creek	Chlorpyrifos
MIDDLE COLUMBIA-HOOD	Lenz Creek	Arsenic (tri), Beryllium, Chloropyrifos, Iron, Manganese
MIDDLE COLUMBIA-HOOD	Middle Fork Hood River	Beryllium, Iron
MIDDLE COLUMBIA-HOOD	Mitchell Creek	Zinc
MIDDLE COLUMBIA-HOOD	Neal Creek	Arsenic (tri), Beryllium, Chloropyrifos, Guthion, Iron, Manganese
MIDDLE COLUMBIA-HOOD	West Fork Hood River	Beryllium
MIDDLE WILLAMETTE	Champoeg Creek	Dieldrin
MIDDLE WILLAMETTE	Pringle Creek	Copper, Dieldrin, Lead, Zinc
MIDDLE WILLAMETTE	Pringle Creek Trib	Heptachlor
MOLALLA-PUDDING	Pudding River	DDT, Iron, Manganese
MOLALLA-PUDDING	Zollner Creek	Arsenic, Chlordane, Dieldrin, Iron, Manganese, Nitrates
NECANICUM	Ecola Creek	Iron

Watershed (USGS 4th Field Name)	Water Body (Stream/Lake)	303(d) Toxics Listing
NORTH UMPQUA	Cooper Creek / Cooper Creek Reservoir	Iron, Mercury
NORTH UMPQUA	North Umpqua River	Arsenic
NORTH UMPQUA	Platt I Reservoir	Mercury
NORTH UMPQUA	Sutherlin Creek	Arsenic, Beryllium, Copper, Iron, Lead, Manganese
NORTH UMPQUA	Unnamed creek	Arsenic
NORTH UMPQUA	Unnamed creek	Iron
NORTH UMPQUA	Unnamed creek	Lead
SOUTH UMPQUA	Galesville Reservoir	Mercury
SOUTH UMPQUA	Middle Creek	Arsenic, Cadmium, Copper, Manganese, Nickel, Zinc
SOUTH UMPQUA	Olalla Creek	Iron
SOUTH UMPQUA	South Fork Middle Creek	Cadmium, Copper, Manganese, Zinc
SOUTH UMPQUA	South Umpqua River	Arsenic, Cadmium
TUALATIN	Beaverton Creek	Iron, Manganese
TUALATIN	Fanno Creek	Dieldrin
Tualatin	Koll Wetland	Chromium (hex), Copper, Lead, Silver, Zinc
TUALATIN	Tualatin River	Iron, Manganese
UMATILLA	Athena Spring	Nitrates
UMATILLA	Birch Creek	Iron
UMATILLA	Butter Creek	Iron
UMATILLA	McKay Creek	Iron
UMATILLA	Umatilla River	Iron, Manganese
UMATILLA	Wildhorse Creek	Iron, Manganese
UMPQUA	Calapooya Creek	Iron
UMPQUA	Cook Creek	Beryllium, Copper, Iron, Lead, Manganese
UPPER WILLAMETTE	A-3 Drain	Arsenic, Dichloroethylenes, Tetrachloroethylene
UPPER WILLAMETTE	Amazon Creek	Arsenic, Copper, Dichloroethylenes, Lead, tetrachloroethylene, Trichloroethylene
UPPER WILLAMETTE	Amazon Creek Diversion Channel	Arsenic (tri), Copper, Lead, Mercury

Watershed (USGS 4th Field Name)	Water Body (Stream/Lake)	303(d) Toxics Listing
UPPER WILLAMETTE	Amazon Diversion Canal/A3 Drain	Mercury
UPPER WILLAMETTE	Calapooia River	Iron, Manganese
UPPER WILLAMETTE	Long Tom River	Iron, Manganese
UPPER WILLAMETTE	Marys River	Iron, Manganese
UPPER WILLAMETTE	Willow Creek	Arsenic
WALLA WALLA	Pine Creek	Iron
WARNER LAKES	Fifteenmile Creek	Silver
WARNER LAKES	Twelvemile Creek	Arsenic (tri), Silver
WARNER LAKES	Twentymile Creek	Arsenic, Silver
WILSON-TRASK-NESTUCCA	Mill Creek	Iron
YAMHILL	Cedar Creek	Iron
YAMHILL	North Yamhill River	Iron, Manganese
YAMHILL	Salt Creek	Manganese
YAMHILL	South Yamhill River	Iron
YAMHILL	West Fork Palmer Creek	Chlorpyrifos
YAMHILL	Yamhill River	Iron, Manganese

* Toxics listings for any one waterbody may only represent a certain portion of that waterbody as being water quality limited.

Appendix B

Multiple Discharger Variance

EXAMPLE FROM MICHIGAN

Variance "Type": Multiple discharger variance (MDV) (may include either municipal or industrial permits)

Pollutants: Mercury (1.3 ng/L criterion associated with wildlife designated use)

Applicable Waterbody: Statewide

Applicable Duration: Five years

Attaining the Designated Use is Not Feasible Because:

40 CFR § 131.10(g)(6) - Controls more stringent than those required by sections 301(b) and 306 of the Act would result in substantial and widespread economic and social impact

Summary of Interim Conditions/Limits:

For reissuance of permits with reasonable potential and existing mercury limits:

- The mercury permit limit will be set at the facility-specific level currently achievable (LCA) (using MI's mercury LCA calculation procedures) for the life of the permit.
- Require monitoring using Method 1631.
- Require a mercury pollutant minimization plan for the duration of the permit so that reasonable progress is made toward attaining the water quality standard.
- Use of a LCA that is calculated using some procedure other than MI's mercury LCA calculation procedures will be evaluated by MDEQ on a case-by-case basis and submitted to EPA for review and approval.

For reissuance of permits with reasonable potential but without previous mercury limits:

- Monitor with Method 1631 monthly for two years of the permit.
- Set the mercury permit limit at the facility-specific LCA (using MI's mercury LCA calculation procedures) effective at Year 3 (allow 2 years of monitoring before the limit takes effect).
- Require monitoring using Method 1631.
- Require a mercury pollutant minimization plan for the duration of the permit so that reasonable progress is made toward attaining the WQS.

- Use of a LCA that is calculated using some procedure other than MI's mercury LCA calculation procedures will be evaluated by MDEQ on a case-by-case basis and submitted to EPA for review and approval.

For reissuance of permits with insufficient data for mercury limit determination:

- Require monthly monitoring with Method 1631 to start at permit issuance and continue for the permit duration.
- Include a Special Condition that triggers a mercury pollutant minimization plan if the monitoring data after one year indicates the presence of mercury at levels indicating reasonable potential to cause or contribute to exceedances of water quality standards.
- Evaluate the need for a permit modification to include a mercury limit, or include a mercury limit at the time of permit reissuance, if reasonable potential exists.

History/Timeline:

Original Variance *(approx. 2 years)*	
February 18, 2000	Michigan DEQ submitted its Mercury Permitting Strategy, which incorporated a MDV for mercury, to EPA. The Strategy **(applicable from 2000-2004)** incorporated an interim level currently achievable (LCA) of 30 ng/L.
May 24, 2002	EPA approves MDV.
Variance Renewal #1 *(<2 mos)*	
May 18, 2004	Michigan DEQ submitted its revised Mercury Permitting Strategy, which incorporated a MDV for mercury, to EPA. The revised Strategy **(applicable from 2005-2009)** incorporated an interim LCA of 10 ng/L.
June 29, 2004	EPA approves the MDV.
2004-2007	EPA's approval of the variance, particularly the uniform LCA of 10 ng/L, was challenged in federal court.
November 30, 2007	A settlement agreement in regards to the above-noted challenge was reached.
September 5, 2008	Michigan DEQ submits a revised procedure for calculating LCAs to EPA which replaced a component of the previously approved mercury MDV that established a statewide LCA of 10 ng/L.
September 30, 2008	EPA approves the methodology submitted to EPA on September 5,

	2008, that Michigan will use to develop LCAs.
Variance Renewal #2	
August 17, 2009	Michigan DEQ develops a DRAFT Multiple Discharger Variance for Mercury **applicable for 2010-2014**.