Oregon Department of Environmental Quality

Issue Paper: Implementing Water Quality Standards for Toxic Pollutants in NPDES Permits

Human Health Toxics Rulemaking

Prepared by: Spencer Bohaboy, Annette Liebe, Andrea Matzke, Debra Sturdevant, and Jennifer Wigal

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TABLE OF CONTENTS

I. INTRODUCTION

BRIEF DESCRIPTION AND PURPOSE OF RULEMAKING

DEQ's currently effective human health toxics criteria are based on a fish consumption rate (FCR) that does not provide adequate protection for the amount of fish and shellfish that are consumed by Oregonians. On June 1, 2010, EPA disapproved Oregon's human health toxics criteria that were submitted for approval in 2004 and were based on a fish consumption rate of 17.5 grams per day (g/d). EPA disapproved the human health toxics criteria because the fish consumption rate used to calculate the criteria is not protective of the amount of fish and shellfish that Oregonians eat. DEQ is addressing EPA's disapproval by proposing to use a higher, more protective fish consumption rate of 175 g/d in its calculation of human health toxics criteria. If DEQ does not promulgate revised standards in a timely manner addressing EPA's disapproval, EPA must conduct rulemaking to promulgate human health toxics criteria for Oregon.

Toxic pollutants entering the environment come from a variety of sources—industrial and municipal discharges, urban stormwater runoff, runoff from land sources into waterways, air deposition, products we use and products we discard. Effective control includes looking at all sources. This issue paper examines potential issues associated with implementing water quality standards for individual NPDES permit holders, including summaries of workgroup input and concerns, identification and analysis of potential implementation tools that could be used with revised criteria, proposed rule language for public comment and final rule recommendations, DEQ recommendations, and supporting documentation.

DEQ also evaluated actions to control or reduce toxic sources that do not receive individual NPDES permits (e.g., traditional nonpoint sources, pretreatment source control, and other sources that can have significant impacts on water quality, such as air sources). This information and the proposed rule language for public comment and final recommended rule revisions can be found in the Implementation Ready TMDLs and Division 41 and 42 issue papers accompanying this rulemaking. Supporting issue papers on Publicly Owned Treatment Works (POTWs) source control, sediment control, and Oregon's antidegradation policy contain a summary of DEQ's evaluation and stakeholder input regarding the decision to include, or not, any actions related to these topics as part of the rulemaking package. DEQ concluded that some of the recommendations could be implemented as part of other current DEQ efforts to reduce toxics, rather than be included in this proposed package, given the sensitive timeline to propose rules to the Environmental Quality Commission by June 2011. Information detailing the analyses, discussions, and DEQ's recommendations are contained in the respective issue papers.

This issue paper was updated based on public comment received from December 21, 2010 – March 21, 2011. Rulemaking changes, if any, are discussed in their respective sections. For more detailed responses to specific comments from stakeholders, please refer to the rulemaking *Response to Comment* document attached to the DEQ Staff Report. While all proposed rules were slightly modified,

the Background Pollutant Allowance (now referred to as a Site-Specific Background Pollutant Criterion) was more significantly modified to reflect an establishment of a site specific water quality criterion. Refer to section IV.3 for more information on this NPDES implementation tool.

THE ENVIRONMENTAL QUALITY COMMISSION (EQC OR "COMMISSION") DIRECTIVE

On October 23, 2008, the EQC directed DEQ to pursue rule revisions to revise human health water quality criteria for toxic pollutants in Oregon. The final proposed criteria will be based on a higher fish consumption rate that is much more protective of human health than the existing rate.

The EQC specifically directed DEQ to:

1. Revise Oregon's toxics criteria for human health based on a fish consumption rate of 175 grams per person per day;
2. Propose rule language that will allow DEQ to implement the standards in National Pollutant Discharge Elimination System (NPDES) permits and other Clean Water Act programs in an environmentally meaningful and cost-effective manner;
3. Propose rule language or develop other implementation strategies to reduce the adverse impacts of toxic substances in Oregon's waters that are the result of non-point source (not via a pipe) discharges or other sources not subject to section 402 of the Clean Water Act;
4. Develop a proposed rule and implementation methods that carefully consider the costs and benefits of the fish consumption rate and the data and scientific analysis already compiled or that is developed as part of the rulemaking proceeding.

A key issue associated with adopting more stringent criteria based on an increased fish consumption rate is how to implement the criteria in an environmentally meaningful, cost-effective manner. This issue is pertinent even under the DEQ's existing criteria based on a fish consumption rate of 6.5 grams/day, but implementation of more stringent criteria will likely exacerbate the current challenges and potentially widen the universe of affected dischargers. In some cases, installing end-of-pipe treatment to meet limits based on the more stringent criteria could cause an economic hardship for cities or industrial dischargers. In some circumstances, treatment technologies capable of attaining limits based on the criteria may not be available.

People concerned about improving water quality and reducing risks from eating fish would like to ensure that toxic pollutants in Oregon waters are reduced as much as possible, or eliminated. A significant component of this rulemaking is to develop implementation tools that DEQ can use to ensure that toxic pollutant control and reduction efforts occur in the most environmentally meaningful, cost-effective and equitable manner possible, without causing an extreme economic hardship. At the same time, implementation tools proposed to be used in conjunction with the implementation of more stringent toxics criteria must meet Clean Water Act requirements and statutes and be approved by EPA.

DESCRIPTION OF THE POTENTIAL ISSUES FACED BY PERMITTEES

Some toxics pollutants are ubiquitous in the environment because they occur naturally or result from a variety of human activities that occurred in the past--sometimes referred to as "legacy pollutants." These pollutants can be grouped under a common category called "background pollutants." The presence of background pollutants can complicate implementation strategies for permittees. For example, some facilities in Oregon take water in from and discharge back into water bodies that have background pollutant levels that already exceed the water quality criteria. In effect, some facilities inherit pollutants already present in the receiving water. In some cases, facilities concentrate pollutants found in their intake water, thus contributing to higher concentrations of the pollutant within the receiving water body. For example, most facilities in Oregon recycle their cooling water, using it multiple times before discharging it back into the receiving stream. Multiple pass cooling allows the facility to withdraw less water from the river, thereby conserving instream flows (and may have a lower heat load to the stream depending on waterbody characteristics), and therefore may be environmentally preferable over single pass cooling. However, recycling cooling water in this way can lead to effluent concentrations of toxic pollutants that are higher than receiving stream background concentrations for that pollutant.

DEQ, EPA, and stakeholder advisory workgroup members spent a significant amount of time focusing on various implementation tools to address background pollutants. Some implementation tools discussed were not recommended for rulemaking based on a variety of reasons (see sections VI and VII). DEQ's final proposed rules include new provisions for intake credits and site-specific background pollutant criteria, and a revised provision for variances as tools to address background pollutants, in addition to other permitting issues.

Although DEQ endeavored to identify potential permitting issues and specific contaminants that could be problematic in this issue paper, through reports developed as part of this rulemaking (e.g. the SAIC Report[1] or FIIAC memo[2]), internal sources, or through discussions with stakeholder advisory workgroup

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[1] Science Applications International Corporation. June 2008. Cost of Compliance with Water Quality Criteria for Toxic Pollutants for Oregon Waters. The EPA contracted Science Applications International Corporation (SAIC) to estimate the potential incremental compliance actions and costs that may be associated with more stringent criteria based on an increased fish consumption rate. The report extrapolated compliance costs for both baseline criteria (i.e. the criteria in effect at that time: Table 20 and Table 33A) and incremental costs derived from criteria based on various higher fish consumption rates.

[2] Fiscal Impact and Implementation Advisory Committee (FIIAC) Memo —The DEQ, EPA, and Confederated Tribes of the Umatilla Indian Reservation (CTUIR) convened a group of interested experts to develop feasible implementation options resulting from a higher FCR and to provide input on the

members, available data were limited to definitively identify the extent to which permittees will have challenges meeting future requirements associated with the revised water quality criteria. While DEQ thinks the final proposed implementation tools are capable of addressing the existing permitting issues and the issues likely to occur in the near-term, some uncertainty exists as to whether these proposed tools will ultimately be the most effective and efficient at addressing issues that will be encountered and whether EPA will approve all the provisions (e.g. the provision governing development of site-specific background pollutant criteria).

It is important to note that even if DEQ was not proposing to use a higher fish consumption rate, permittees still have current compliance issues with the existing criteria, as highlighted in the SAIC Report. The proposed higher fish consumption rate coupled with the transition from technology-based permitting to water quality-based permitting, highlights existing issues with developing and incorporating WQBELs (Water Quality Based Effluent Limits) for toxics into NPDES permits.

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impacts these options may have on a wide range of permitted dischargers, the public, and other stakeholders throughout the state. The expertise of the group ranged from backgrounds in economics, business administration, public works, public health, water quality, and engineering. The FIIAC developed a memo that provides an overview of the charge of the FIIAC, summarizes discussions around costs, benefits and implementation ideas that were considered by the group, and highlights conclusions and concerns regarding the SAIC report.

II. BACKGROUND

FISH CONSUMPTION RATE PROJECT

DEQ's water quality standards play an important role in maintaining and restoring the environmental quality and quality of life that Oregonians value. Human health criteria, as part of Oregon's water quality standards, are used to limit the amount of toxic pollutants that enter Oregon's waterways and accumulate in the fish and shellfish consumed by many Oregonians as a traditional and/or healthful lifestyle. Implementation of human health criteria through Clean Water Act programs help to ensure that people may eat fish and shellfish from local waters without incurring unacceptable health risks.

In 2004, the commission, at DEQ's recommendation, adopted water quality criteria based on EPA's 2002 recommended toxic pollutants criteria for aquatic life and for human health. The human health criteria were based on a fish consumption rate of 17.5 g/d, which represents the 90th percentile of consumption among consumers and non-consumers of fish nation-wide. Prior to the adoption of the 2004 revisions, DEQ's criteria were based on EPA's 1986 recommended human health criteria and a fish consumption rate of 6.5 g/d.

Following DEQ's 2004 adoption of EPA's recommended criteria, concerns about Oregon's criteria heightened. Native American tribal governments objected to the criteria, stating that the criteria did not protect tribal members who eat much greater amounts of fish and for whom fish consumption is a critical part of their cultural tradition and religion. Tribes have rights to catch fish in Oregon waters and EPA has a trust responsibility to protect the interests of the tribes.

With the recognition that many Oregonians eat more than 17.5 g/d of fish and shellfish, DEQ embarked on a project to review the fish consumption rate and subsequently revise the human health water quality criteria for Oregon. DEQ also formed two workgroups, the Human Health Focus Group (HHFG) and the Fiscal Impact and Implementation Advisory Committee (FIIAC), to assist with gathering and evaluating relevant information. The Human Health Focus Group, made up of public health professionals and toxicologists, reviewed the available data on fish consumption patterns in the Pacific Northwest and elsewhere and provided input to DEQ on specific questions related to the studies and its selection of a fish consumption rate. The group wrote a report[3] summarizing the science and made recommendations about the quality and appropriate use of the available information. DEQ evaluated this scientific data and the HHFG's analysis in choosing a consumption rate. The report, materials and agendas from the HHFG process, are contained on DEQ's website.

[3] Human Health Focus Group Report. Oregon Fish and Shellfish Consumption Rate Project. June 2008.

The EPA, the Confederated Tribes of the Umatilla Indian Reservation (CTUIR), and DEQ collaborated on this project throughout the process and issued a joint recommendation[4] to the Environmental Quality Commission on October 23, 2008, to revise Oregon's toxics criteria for human health based on a FCR of 175 g/d. The commission agreed with this recommendation and directed DEQ to proceed with this fish consumption rate as a basis for revising human health criteria. For more information related to the fish consumption rate project and the associated human health criteria, see the *Human Health Toxics Criteria* issue paper.

STAKEHOLDER INVOLVEMENT IN THE TOXICS RULEMAKING

To address the commission's October 2008 directive, DEQ established a Rulemaking Workgroup (RWG) in December 2008. The purpose of the RWG was to provide input and feedback to DEQ as it developed its proposed rulemaking to revise human health criteria based on the new fish consumption rate and to address potential issues associated with implementing the revised criteria as DEQ carried out the direction of the commission.

The RWG included members representing the Confederated Tribes of the Umatilla Indian Reservation, environmental groups, municipalities, industry, as well as EPA Region 10. Representatives from the Oregon Departments of Forestry and Agriculture also participated. The workgroup met on a monthly basis from December 2008 until October 2010.

The charge of the RWG was to:

- Help DEQ develop innovative NPDES implementation options.
- Provide advice to DEQ about how to connect NPDES implementations options to the statewide toxics reduction strategy and SB 737.
- Provide input to DEQ on rule language development.
- Identify issues that are beyond the scope of the water quality standards rulemaking.

Various stakeholders raised a number of questions as part of the RWG workgroup discussions. In response, DEQ developed a question and answer document during that process related to general implementation of the rule, variances, and the background pollutant allowance. This question and answer document can be found in Appendix F.

DEQ formed an additional workgroup in November 2009 to address one of the other EQC directives: Develop rules or other implementation strategies to reduce toxic pollution from sources not regulated by permits under the federal Clean Water Act.

[4] DEQ. October 6, 2008 Memo from Dick Peterson, Director DEQ, to the Environmental Quality Commission. Agenda Item G, Action Item: Oregon's Fish Consumption Rate – For Use in Setting Water Quality Standards for Toxic Pollutants October 23, 2008 commission Meeting.

The additional workgroup, termed the Non-NPDES Workgroup, included all the members from the RWG work group, plus additional members representing agricultural and forestry interests. The majority of the meetings for both the RWG and Non-NPDES workgroups were held on the same day and continued through October 2010.

The charge of the Non-NPDES Workgroup was to:

Assist DEQ in identifying water quality regulatory changes or actions that could be addressed in the short-term that

1. are needed to make a significant improvement in the ability of non-NPDES sources to implement reduction measures for toxic pollutants, and
2. that would have a positive environmental impact.

Agendas, meeting minutes, and support materials developed for these workgroup meetings can be found on DEQ's website.

Additionally, DEQ formed an overall broad workgroup to assist DEQ in the development of a comprehensive, cross media toxics reduction strategy. Although all three workgroups are related to each other in DEQ's effort to reduce toxic pollutants in the environment, the RWG and non-NPDES workgroups were specifically formed to provide input and feedback related to revising human health criteria for toxics based on a higher fish consumption rate.

Table 1: Rulemaking Workgroup Members (RWG)

Organization	Representative
Confederated Tribes of the Umatilla Indian Reservation (CTUIR)	*Ryan Sudbury/Rick George
EPA	Jannine Jennings
ACWA	Dave Kliewer
League of Oregon Cities	Peter Ruffier
Northwest Pulp and Paper	Kathryn Van Natta
Industrial Dischargers	Michael Campbell
Associated Oregon Industries	Rich Garber (alternate Myron Burr)
Northwest Environmental Advocates	Nina Bell
NW Environmental Defense Center	**Andrew Hawley
Columbia Riverkeeper	Lauren Goldberg

* Previous participation by Kathleen Feehan
** Did not participate after the first few meetings

Table 2: Non-NPDES Workgroup Members

Organization	Representative
Confederated Tribes of the Umatilla Indian Reservation (CTUIR)	*Ryan Sudbury/Rick George
EPA	Jannine Jennings
ACWA	Dave Kliewer
League of Oregon Cities	Peter Ruffier
Northwest Pulp and Paper	Kathryn Van Natta
Industrial Dischargers	Michael Campbell
Associated Oregon Industries	Rich Garber (alternate Myron Burr)
Northwest Environmental Advocates	Nina Bell
NW Environmental Defense Center	**Andrew Hawley
Department of Forestry	Peter Daugherty
Department of Agriculture	Dave Wilkinson/Ellen Hammond
Oregonians for Food and Shelter	Terry Witt
Oregon Farm Bureau	Jennifer Shmikler
Oregon Forest Industries Council	Chris Jarmer
Association of Oregon Counties	Emily Ackland
Oregon Small Woodlands Association	David Ford
Columbia Riverkeeper	Lauren Goldberg

* Previous participation by Kathleen Feehan

** Did not participate after the first few meetings

III. CLEAN WATER ACT REQUIREMENTS FOR IMPLEMENTING WATER QUALITY STANDARDS IN PERMITS

A. Overview

Beginning in the mid 1960's, the NPDES program has evolved through a series of legislative initiatives and various court decisions with the goal of protecting and restoring the nation's water quality. Initially, DEQ's water quality permitting program worked through the application of technology-based requirements for domestic and industrial sources to maintain a minimum level of treatment and environmental protection. Later this was expanded to address specific deficiencies of in-stream water quality through the use of Water Quality Based Effluent Limits (WQBELs), and ultimately Total Maximum Daily Loads (TMDLs). More recently, the program was expanded to include municipal and industrial storm water discharges. This evolutionary process can be seen in the makeup of the current NPDES program.

All domestic and most industrial wastewater treatment facilities have minimum treatment requirements embodied in Technology Based Effluent Limits (TBELs) that require a minimum baseline of environmental protection. The pollutant parameters covered and the stringency of the industrial TBELs depend on the facility's Significant Industrial Category (SIC). All domestic and industrial facilities go through an evaluation process to determine whether there is "reasonable potential" for the pollutants in their effluent to cause an excursion of numeric water quality criteria in the receiving water body. When DEQ makes an "affirmative" finding for reasonable potential, it calculates a waste load and corresponding WQBEL specifically to protect the water body. The numeric water quality standards typically result in WQBELs that are more stringent than the corresponding TBELs. TBELs are set forth in federal regulation and apply to all industries in certain categories, unless a WQBEL is necessary to prevent exceedance of a water quality standard. Unlike TBELs, WQBELs are developed on a case-by-case basis depending on the facility-specific and water body-specific facts applied to a set of assumptions. WQBELs involve more discretion in development and, because they have become a part of Oregon's permitting program more recently, may require facility upgrades and changes in processes. WQBELs are therefore the chief area of concern for those involved in the permitting process.

In the **Water Quality Act of 1987** Congress responded to the issue of pollutants carried in stormwater discharges by requiring that industrial stormwater dischargers and municipal separate storm sewer systems (often called "MS4s") obtain NPDES permits. The stormwater program focuses on addressing the same water quality standards just as the domestic and industrial "point source" program do, but due to the diffuse and variable nature of stormwater and the challenges in controlling pollutant

contribution, the stormwater permits usually do not have uniform numeric effluent limits like traditional wastewater permits. The stormwater program uses a combination of narrative effluent limits, such as best management practices (BMPs), and pollutant reduction goals (i.e. "maximum extent practicable") in lieu of specific numeric effluent limits. For purposes of this issue paper, the remainder of this chapter will focus on issues affecting individual municipal and industrial NPDES permits other than stormwater.

The Clean Water Act identifies USEPA as responsible for the implementation of the NPDES program, and allows USEPA to authorize states (including Oregon) to implement the program for their respective state. To be authorized, the states must demonstrate their program's equivalency to the minimum federal requirements and often incorporate federal rules into state regulations. Each state's implementation of the NPDES program and supporting guidance vary to some degree. Often the state program will contain additional requirements for state-specific pollutants or an additional level of protection for classes of pollutants. EPA retains the right to review and approve all modification to state water quality regulations, and the right to comment on each permit issuance.

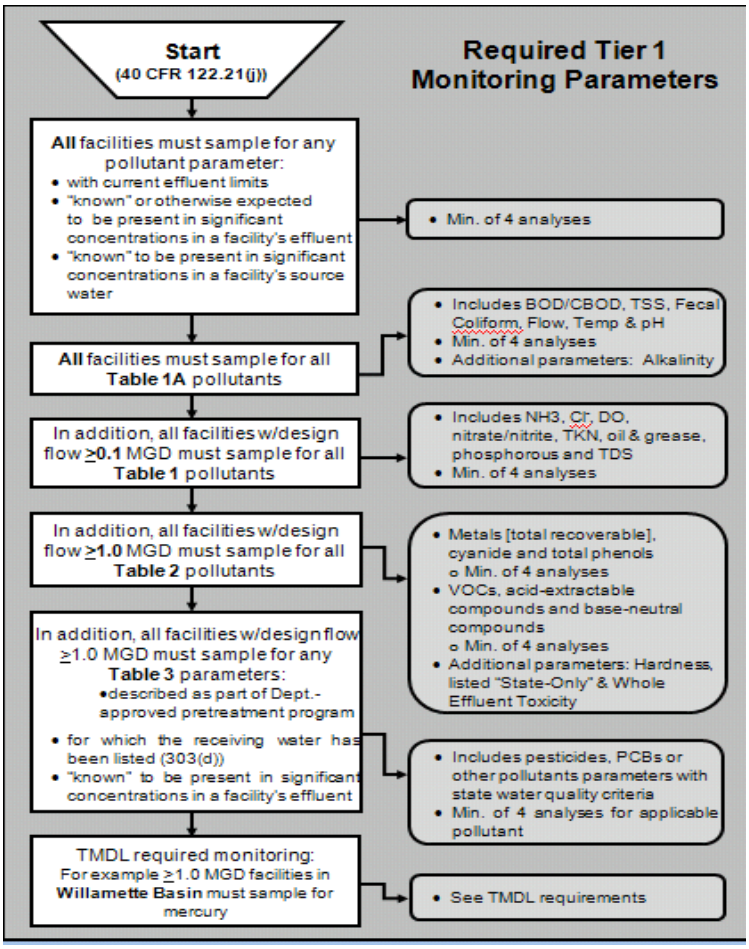
Regardless of whether a state or EPA issues an NPDES permit, all permits will typically share the same development process and incorporate the same permit elements (i.e. permit conditions, permit limits, monitoring requirements, permit term, fact sheet/evaluation reports, etc.). Permits contain sampling and monitoring requirements in order to characterize the facility's effluent and the ambient water quality of the receiving stream, and to demonstrate compliance with effluent limits. The pollutants that are required to be monitored for and the frequency of sampling is highly variable, and is determined based upon a facility's type (domestic vs. industrial), potential for toxicity (SIC code, pretreatment program), size (flow rate, population served) and pollutant presence. The characterization data is used to develop an instream water quality model simulating the discharge of the effluent into the receiving waters. This simulation is used to determine if there is a "Reasonable Potential" (RP) for a facility to cause or contribute to an exceedance of the water quality criteria in the receiving water body. WQBELs are calculated for pollutants of concern identified as presenting RP. Once WQBELs and monitoring requirements are in effect, DEQ monitors the data on a regular basis to determine the facility's compliance with the permit.

The reasonable potential analysis (RPA) uses a water quality model that calculates the effect of an effluent discharge on a receiving water body under a worst case scenario and critical flow conditions. The RPA essentially calculates the maximum expected effluent concentration and compares it to the numeric water quality criteria to determine if there could be an exceedance in-stream. A key element of the RPA is the ability to statistically address very small sample sets and the high variability of monitoring data. Often, the RPA will account for the amount of available assimilative capacity of a water body and factor in an amount of dilution when calculating the maximum expected concentration. Where the water body contains concentrations of pollutants in excess of the water quality criteria, there is no assimilative capacity and all comparisons are made at the point of discharge ("end of pipe"). This is most likely to occur on stream segments that are listed as "impaired" on the 303(d) list, severely limiting the allowable amount of pollutant discharge.

Once a RPA has been completed and appropriate WQBELs are developed, the permit writer will typically determine if any TBELs are also applicable. In most cases, the WQBELs are more stringent than the corresponding TBELs and included in the final permit. Before issuing a final draft of the permit for public comment, the permit writer works with the facility (permittee) to determine if the terms and effluent limits of the permit are immediately achievable. If the permittee must make significant capital improvements or process changes in order to meet new, more stringent effluent limits, DEQ may include a schedule for compliance in the permit. Such a compliance schedule will require the permittee to meet the new limits as soon as possible and will include enforceable milestones and deadlines. Compliance schedules lasting more than a year include interim effluent limits the facility can reasonably meet until upgrades or changes are made. Compliance schedules, where appropriate, can grant the facility a degree of regulatory relief while it puts necessary changes into place to achieve compliance with the final effluent limit.

An important issue is the impact of analytic limits on the permit development process and compliance. "Quantitation limits" represent the lowest level at which a pollutant is detectible and quantifiable, using currently accepted analytical methodologies. Approximately 40% of the state's currently effective water quality criteria have quantitation limits (QLs) that are higher than criteria. Similarly, approximately 48% of the proposed human health criteria have QLs that are higher than criteria. Consequently, the compliance level for permitting becomes the quantitation limit for that pollutant, rather than the limit calculated to comply with the water quality criterion.

Figure 1: Domestic Monitoring Requirements Determination Process



B. PERMITTING DEMOGRAPHICS

Generally, the new human health criteria for toxics will be applicable to all individual and general permits. The degree to which these permits are affected by the new criteria will be determined by the various monitoring requirements that are mandated by state and federal rules. The permit

writer may also require monitoring if there is reason to believe that the source is discharging toxics.

For example, Publicly Owned Treatment Works (POTWs), also called domestic sources, have different monitoring requirements depending on if the domestic facility is a major or minor source. As shown in Figure 1, minor domestic sources (average dry weather design flow of less than one million gallons per day (MGD)) typically have much reduced monitoring, and subsequently permitting, requirements than major domestic sources (i.e. average dry weather design flow of at least 1 MGD). The Figure 1 flow chart demonstrates the monitoring requirements identification process for domestic sources.

Industrial process water permits have a complex process to determine monitoring requirements based on the industrial category and the potential for toxic chemicals in the effluent and in the receiving waterbody. Figure 2 demonstrates the monitoring requirements identification process for "primary industries" as an example of a portion of the process.

Based upon current data, DEQ has the number of active permits as described in Table 3 below.

Figure 2: Primary Industry Monitoring Requirements Determination Process

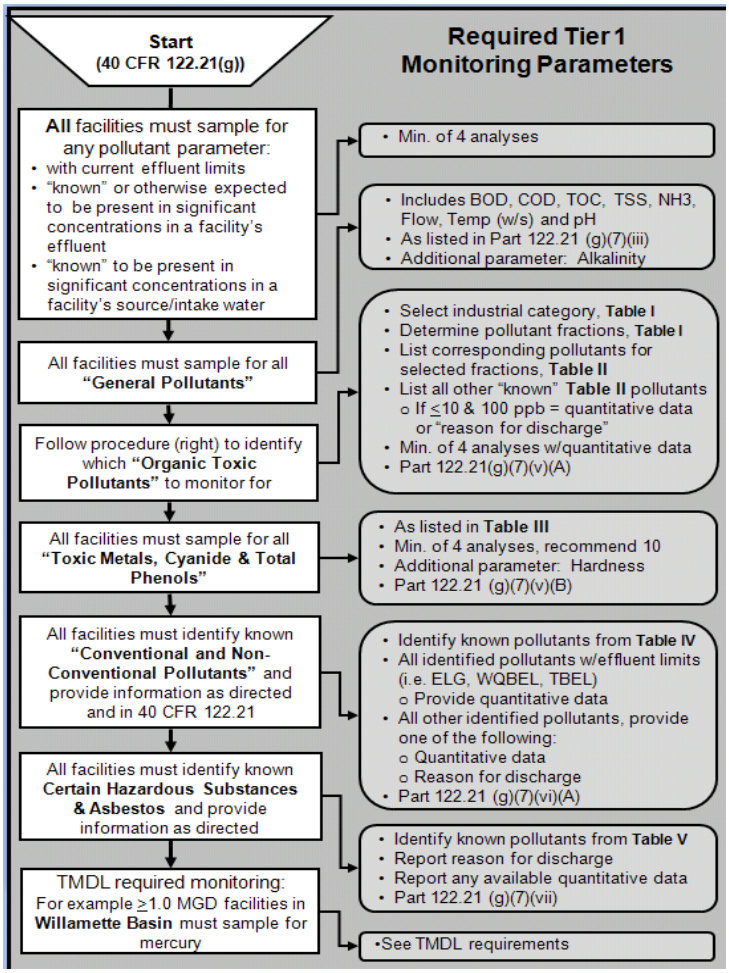


Table 3: Active NPDES Permits

Facility Type	No.
Major Domestic	49
Minor Domestic	154
Major Industrial	19
Minor Industrial	130
MS4	22
Total	**374**

Municipal Separate Storm Sewer Systems (MS4s)

There are currently 51 jurisdictions in Oregon that are permitted under the Municipal Separate Storm Sewer System (MS4) NPDES permit program. The Phase I or Phase II federal stormwater rules required these jurisdictions to obtain a NPDES permit. Generally, the permits cover the discharge of stormwater from MS4s (i.e., 'urban areas'), and the standard for these permitted jurisdictions is reducing the discharge of pollutants to the Maximum Extent Practicable.

Jurisdictions not required to obtain a NPDES permit for stormwater discharges (i.e., non-NPDES sources) may be required to address the discharge of pollutants based upon wasteload allocations developed for a TMDL, particularly if they are identified as a designated management agency. Typically, jurisdictions address the requirement through the development of a TMDL Implementation Plan.

Applicability and Potential Effect of Rulemaking Associated with Stormwater Permits

DEQ issues three different types of stormwater permits: individual Municipal Separate Storm Sewer System (MS4) permits, construction stormwater general permits, and industrial stormwater general permits. Municipal stormwater permits are governed by the standard to reduce pollutants to the maximum extent practicable. Industrial and construction stormwater general permits require discharges to meet the instream water quality standards in OAR 340-041, including numeric criteria for the protection of aquatic life and human health.

DEQ is currently in the process of developing new industrial stormwater general permits (expected to be issued in August 2011). DEQ is proposing that industrial stormwater discharges do not cause or contribute to an exceedance of instream water quality standards. DEQ is also proposing that industrial facilities monitor for benchmarks and impairment pollutants and take corrective actions.

Specifically, facilities that discharge to impaired waterbodies must monitor for all pollutants for which the waterbody is impaired (there are some exceptions such as waterbodies impaired for temperature). Because stormwater discharges are intermittent, the reference concentrations for many of the impairment pollutants will be based on the acute aquatic life criteria rather than the human health criteria, which are generally based on a 70 year exposure. If there is no aquatic life criteria for a specific impairment pollutant, DEQ will use the human health criteria. This approach is consistent with EPA's benchmark monitoring approach for stormwater permits.

Table 4: Industrial Stormwater Permits

Industrial Stormwater Permit	Description	No. of Facilities*
1200-COLS	Facilities located in the Columbia Slough watershed	138
1200-Z	All other industrial facilities in the state	770
Total		**908**

* As of September 2010

C. TOXIC POLLUTANTS ON 2004/06 303(D) INTEGRATED REPORT IDENTIFIED AS WATER QUALITY IMPAIRED

The presence of some toxic pollutants in Oregon has already been identified through DEQ's water quality assessment process. The Integrated Report (per section 305(b) and 303(d) requirements) compiles information on the overall condition of Oregon's waters and identifies waters that do not meet water quality standards, thereby requiring a TMDL. The Clean Water Act requires state to update their 303(d) list every two years and the list must be reviewed and approved by EPA. Tables 5 and 6 identify pollutants that either exceed water quality standards or are of potential concern. The column headings on Table 4 indicate whether the criteria are for human health criteria, aquatic life criteria protection, or only organoleptic effects (i.e. taste, odor, and color effects). If there are criteria for both uses, the pollutant is listed in the column for which those criteria are more stringent. For a complete list of waterbodies that are water quality limited for toxic pollutants, please refer to the table in Appendix A.

Table 5: 303(d) Listed Toxics from 2004/2006 Integrated Report

Human Health Criteria	Aquatic Life Criteria	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 6: Pollutants of Concern from 2004/2006 Integrated Report

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

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

A report[5] written in 2008 provided estimates of the potential incremental compliance actions and costs that may be associated with implementing water quality criteria based on an increased fish consumption rate. The report found that some permitted sources would have the potential to exceed currently effective criteria for the following pollutants:

- DDT
- Alpha-BHC
- Arsenic
- Bis (2-ethylhexyl) phthalate
- Dioxin
- Mercury

Note that five out of the six pollutants (not bis-phthalate) identified above have a reasonable potential to exceed or contribute to an exceedance at criteria based on Oregon's previous fish consumption rate of 17.5 g/day, so the more stringent proposed criteria for these pollutants may not necessarily create additional concerns. In addition, as part of the 2004 rule revision, Oregon withdrew its national CWA § 304(a) human health criterion for total mercury and replaced these criteria with a new fish tissue-based "organism only" human health criterion for methylmercury. Due to EPA's 2010 disapproval of this criterion, DEQ does not currently have a criterion for methylmercury, although a new criterion will be proposed as part of this toxics rulemaking. Consequently, until data on methylmercury is collected and analyzed, it is unclear what permitting issues may arise due to this criterion. Also note that the EQC adopted a less stringent criterion for arsenic than the arsenic criterion evaluated in the SAIC report on April 21, 2011. The arsenic criteria are also based on inorganic arsenic, rather than total arsenic which is the basis of the currently effective criterion. Therefore, some of the permitting issues otherwise associated with arsenic may be minimized. For detailed information on costs associated with the proposed toxics rulemaking, please refer to the Statement of Need and Fiscal and Economic Impact published as part of this rulemaking.

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

IV. IMPLEMENTATION TOOLS FOR THE REVISED HUMAN HEALTH CRITERIA

Current Oregon regulations can address some NPDES compliance issues. However, revisions are needed to some regulations to address potentially significant additional issues. In some instances, revisions will provide a more streamlined, less burdensome approach, while requiring progress toward meeting water quality standards (e.g. variances). In other cases, new water quality standards provisions are being proposed to specifically address issues such as the presence of background pollutants in Oregon waters (e.g. intake credits, site-specific background pollutant criterion provision). As will be described in the background pollutants section below, the presence of toxic pollutants in Oregon waters may already exceed current toxics criteria or could exacerbate permitting issues for dischargers. In other cases, permittees may discharge pollutants due to the type of operation employed, or from source/raw materials used as part of their operation. In some instances, it may not be technologically feasible to meet new or revised WQBELs. Consequently, not all implementation tools described in this section will be applicable to all situations.

Oregon is in the forefront of developing and implementing water quality standards reflective of the fact that Oregonians consume higher rates of fish than populations in some other states. Consequently, to protect consumers of fish and shellfish in Oregon, proposed toxics criteria for human health will be significantly more stringent than the effective human health criteria, as well as more stringent than the human health criteria used by other states. While Oregon's proposed human health criteria are more stringent than other states', many of the issues DEQ expects to encounter in its implementation are not novel. As a result, in developing and researching various implementation tools, DEQ explored permitting tools developed in other states that could possibly be used as examples to potentially address similar issues found in Oregon.

As directed by the EQC, one of the objectives of the rulemaking work group was to explore cost effective implementation tools to address these technically challenging issues. Of particular interest to DEQ were the Great Lakes Initiative (GLI) rules developed by EPA. The Great Lakes Initiative was a comprehensive and collaborative plan finalized in 1995 among EPA and the Great Lakes states to restore the health of the Great Lakes, with a particular focus on toxic pollutants. Each Great Lake state was required to submit for EPA approval regulations related to minimum water quality standards for 29 pollutants (including bioaccumulative chemicals of concern), antidegradation policies, and implementation procedures that were consistent with the Great Lakes Guidance published in regulation. Although Oregon is not a GLI state, the GLI provisions and requirements related to water quality standards were based on the relevant Clean Water Act provision and federal regulations regarding water quality standards (Clean Water Act §303(c); 40 CFR Part 131) and thus, are relevant as a guide for development of implementation tools in Oregon. DEQ also researched other non-GLI states to assess how other states implemented variances and several other tools.

Implementation tools discussed in the GLI include intake credits and variances. Although intake credits are commonly allowed in conjunction with Technology Based Effluent Limits (TBELs), few states other than GLI states have regulations in place allowing the use of intake credits with WQBELs. Accordingly, DEQ based its proposed rule language for intake credits on the GLI provision.

DEQ also researched Great Lake states' variance regulations written to comply with the GLI requirements. Each state developed variance regulations based on specific state considerations, so the specific regulations vary among the Great Lake States. EPA acted upon these regulations and determined whether or not each state's regulations were consistent with the GLI provisions. DEQ staff researched the GLI states' approved variance regulations as well as several EPA-approved provisions found in non-GLI states.

Given that there are no specific federal regulations for variances, EPA and other states have relied upon various EPA guidance documents and policy memos as a guide for developing variance regulations. DEQ has found other state's regulations (both GLI and non-GLI states) and EPA regulations and guidance useful in its preparation of proposed variance regulations and other permitting tools. DEQ's development of variance regulations and other permitting tools is guided by the fact that EPA Region 10 has a duty to independently review each component of this rulemaking to confirm consistency with 40 CFR Part 131, regardless of whether DEQ proposed regulations are based upon provisions from GLI states, other state or federal regulations, or EPA guidance.

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[6], iron and manganese - naturally occurring earth metals present in many Oregon waters at concentrations greater than the currently effective water quality criteria. [7]

[6] Hinkle, S.R., Polette, D.J., 1999. Arsenic in Ground Water of the Willamette Basin, Oregon: U.S. Geological Survey. Water Investigations Report 98-4205, 34 p.

[7] DEQ expects the majority of waters where this is currently the case for iron and manganese will be addressed by revisions to those criteria adopted in December 2010, and also addressed, to a large extent, by revisions to the arsenic criterion adopted in April 2011.

- 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[8].

- Herbicide, insecticide, and fungicide – The following pollutants were identified[9] in Oregon waters at concentrations above state water quality criteria: dieldrin, chlorpyrifos, and diazinon. Other pollutants of concern that do not have aquatic life or human health criteria, but were identified include: atrazine, prometon, metolachlor, trifluralin, and carbaryl. These pollutants may come from a variety of sources.

Some industrial point sources in Oregon take water in from and discharge back into waterbodies 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 Initiative) could provide regulatory relief relative to NPDES permit requirements. Such sources would not be responsible for removing existing background pollutants they take in via their intake water. See section IV.4 on intake credits for more information.

Intake credits, however, are not available for facilities which concentrate pollutants in their discharge above the concentration 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 permittee would otherwise 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, so is environmentally 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 permittee 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 if a permittee implements a remedy to control the small increase

[8] Lower Columbia River Estuary Partnership. 2007. Lower Columbia River and Estuary Ecosystem Monitoring: Water Quality and Salmon Sampling Report.

[9] Waite, I.R., et al. 2008. Effects of Urbanization on Stream Ecosystems in the Willamette River Basin and Surrounding Area, Oregon and Washington. U.S. Geological Survey Scientific Investigations Report 2006-5101-D, 62 p.

in concentration (e.g., reducing the number of pass through cycles), more environmental damage may result than leaving the current process in place. Section IV.3. which describes the final proposed site-specific background pollutant criteria provision and accompanying rule language addresses such a situation.

Additional tools discussed in this section could also potentially be used to address background pollutant concentrations.

1. General Permits

A. Description

In many cases, DEQ writes an individual NPDES permit to regulate the discharge of a single effluent stream derived from multiple industrial activities. If these multiple industrial activities and associated wastewater streams were separated out into different effluent streams, some of these industrial activities could qualify for a general permit. A general permit is not specifically tailored for an individual discharger. Since general permits can be developed to specifically address background pollutant conditions, this section describes a proposed approach that could be used under current rules to allow dischargers with individual permits to also apply for general permits to address a certain portion of their industrial activities and associated wastewater. Where appropriate, permittees may consider physical separation of one of the aforementioned processes or activities and separately permit the activity under a general permit.

B. Applicability/Scope

Permitting authorities write general permits (GPs) to implement common effluent limit requirements for specified categories of discharge sources. Pursuant to 40 CFR 122.21 (h), GPs have reduced monitoring requirements compared to individual permits and may utilize a "net credit" to account for the presence of pollutants in intake water[10]. In this way, a general permit approach could provide an alternative to addressing situations where high concentrations of background pollutants present compliance issues for facilities with certain activities such as non-contact cooling, boiler blow down or condensation.

[10] 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.

In Oregon, a qualifying facility would apply for coverage under a general permit by submitting **EPA Form 2E** that reflects the reduced monitoring requirements[11] when compared to the individual permit application (**EPA Form 2D/C)**. Oregon's administrative rule limits 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. General permits are limited for a term of five years.

DEQ currently allows general permits pursuant to the terms and conditions set forth in 40 CFR 122.28 and OAR 340-045-0033. Table 7 describes the NPDES general permits currently offered by DEQ that describe processes or activities that are also commonly covered in individual industrial permits.

Table 7: General Permits: Commonly covered in individual industrial permits

Permit	Description
100-J	Cooling water/heat pumps
200-J	Filter backwash
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

C. DEQ Recommendation

DEQ does not recommend pursuing widespread implementation of this tool. Based upon evaluation of the current permit universe, the number of facilities not currently covered by existing permits that could benefit from this approach is extremely limited. DEQ retains its current ability to develop new "general permits" to address classes of industrial activity on an as-needed basis.

[11] 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.

D. Policy Issues and Objectives

General permits differ from individual permits in that they only cover one process or activity, where most individual permits cover multiple processes or activities occurring at a facility. Additionally, general permits do not have as many pollutant monitoring and reasonable potential analysis requirements as contained in individual permits. Individually permitted facilities may contain one or more of the processes covered under general permits. This means that a facility with commingled processes and an individual permit may have more stringent effluent limits than if the processes where separately permitted with a combination of an individual and a general permit.

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 stakeholders concerning the effects of naturally occurring and legacy pollutants in source waters. Accordingly, a number of implementation tools have been suggested, including a general permit-based approach.

Advantages of using a general permit to address background pollutants 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[12] set forth in 40 CFR 122.21 and .28 without formal rulemaking

Disadvantages of the selected option are:

[12] 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.

- Requires multiple permits, additional administrative time and permitting fees
- Limited in scope to minor facilities and/or activities
- Requires a facility to physically separate effluent streams, although common outfall would be permitted.
- Allows a higher percentage of natural or legacy pollutant to be returned to waterbody than is allowed under a water quality based effluent limit.

ALTERNATIVES CONSIDERED

Throughout the course of RWG discussions and implementation tool evaluation DEQ investigated and considered the following alternatives as possible 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 to meet the waste load allocations described in the Long Island Sound Nutrient TMDL. Although the permit contains a couple of innovative features, the most interesting 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 general permit, and include traditional effluent limits and permit conditions for the rest of the applicable pollutant parameters.

   Drawing from Long Island Sound nutrient permit, DEQ considered developing 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 DEQ consultation with EPA, it became apparent that it was permissible to have a statewide general permit but it is not permissible to use established pollutant trading guidance for toxic pollutants, given concerns specific to toxic trading.

2. Develop a new general permit 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[13], 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.

[13] Note that a major facility (>1 MGD) may have a minor activity (<1 MGD).

The advantage of this approach would be to cover more activities with general permits (e.g. pump testing) and potentially consolidate multiple general permits. The activities addressed under the Utility Water Permit would have to be physically separated from any other effluent streams to facilitate compliance monitoring. Based upon feedback from permit writers and analysis of the number of prospective facilities that could use 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 commingled process and non-process waters to apply for a general permit[14] for the applicable non-process activities without having to physically segregate them. The concept of the "embedded permit" would allow permit writers and facilities to use a general permit for the non-process activities utilizing a system of mid process monitoring and pollutant accounting.

   Allowing for issuance of both a general permit and individual permit would have the advantage of avoiding 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.

SUMMARY OF RWG DISCUSSION AND VIEWS

Although there was general interest in the ability to implement the proposed tool, members of the work group were not able to cite specific examples where the proposed tool could be implemented. Additionally, individual members voiced concerns that the legal basis of the proposal was flawed and would potentially leave a permittee open to legal challenge.

The following questions were asked as part of the discussion:

- Question 1: *The current general permit approach is based on a process. Can a general permit be written based on a pollutant*?

- Answer 1: *The rules are limited to minor discharges (minor being either the activity or the facility). Although it might be acceptable to write a general permit for an individual pollutant, it wouldn't be ideal because the general permits focus on types of activities and treatment technologies for those types of activities.*

[14] This would be limited to only activities covered under the general permits the department supports at the time of the permit development. This is different than alternative number 2 which would develop a new general permit to address multiple activities under one permit.

- Question 2: *How is a General Permit Different from a Traditional Water Quality Based Permit?*

- Answer 2: *General permits are typically designed to simplify the permitting process for a class of dischargers[15] 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 general permit 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 protective of water quality and reflect standard treatment technology and 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.

F. Rule Proposed for Public Comment

NOT APPLICABLE—DID NOT PROPOSE LANGUAGE

G. Authority and Precedence

DEQ believes that this provision is within the state's authority to establish general permits under 40 CFR 122.28. As long as an activity is covered under one of the state approved general permits, not subject to another water-quality based limit pursuant to 40CFR 122.44 and is segregated from other effluent streams, a facility may separately apply for general permit in addition to its individual permit.

[15] In Oregon, general permits are limited to Minor facilities only.

In rare cases, the Department has issued general permits to facilities with individual NPDES permits for other effluent streams.

H. Other Supporting Information

NOT APPLICABLE

I. Implementation Information

NOT APPLICABLE

2. Intake Credits

A. Description

DEQ is proposing a new provision in the permitting regulation (Division 45) to address situations where facilities bring in and discharge high levels of background pollutants contained in the intake water. Where applicable, *Intake Credits* may be used in both the "reasonable potential" determination and WQBEL calculation parts of the permit development process.

An Intake Credit is a procedure that allows permitting authorities to conclude that the return of unaltered intake water pollutants to the same body of water under identified circumstances does not cause, have the reasonable potential to cause, or contribute to an excursion above water quality standards and, therefore, WQBELs for that pollutant are not needed. The permittee must satisfy all the following five conditions to qualify for the "reasonable potential" use of the procedure:

- The facility withdraws 100 percent of the intake water containing the pollutant from the same body of water into which the discharge is made;
- The facility does not contribute any additional mass of the identified intake pollutant to its wastewater;
- The facility does not alter the identified intake pollutant chemically or physically in a manner that would cause adverse water quality impacts to occur that would not occur if the pollutants were left in-stream;
- The facility does not increase the identified intake pollutant concentration at the edge of the mixing zone, or at the point of discharge if a mixing zone is not allowed, as compared to the pollutant concentration in the intake water, unless the increased concentration does not cause or contribute to an excursion above an applicable water quality standard; and
- The timing and location of the discharge would not cause adverse water quality impacts to occur that would not occur if the identified intake pollutant were left in-stream.

In the event that DEQ determines a permittee has reasonable potential, the Intake Credit procedure to address ambient pollutant load may also be used in the "calculation" of the WQBEL provided the permittee has demonstrated all of the following five conditions

- The facility withdraws 100 percent of the intake water containing the pollutant from the same body of water into which the discharge is made;
- The observed maximum ambient background concentration and the intake water concentration of the pollutant exceeds an applicable water quality criterion for that pollutant;
- The facility does not alter the identified intake pollutant chemically or physically in a manner that would cause adverse water quality impacts to occur that would not occur if the pollutants were left in-stream;
- The facility does not increase the identified intake pollutant concentration, as defined by the department, at the point of discharge; and
- The timing and location of the discharge would not cause adverse water quality impacts to occur that would not occur if the identified intake pollutant were left in-stream.

Based on public comments, DEQ made very minor changes to the intake credit rule. These changes provided general clarifications and did not substantively alter the meaning or implementation of this permitting provision. For example, in section (1), DEQ removed some of the language regarding TMDLs because it could be misconstrued as not allowing an intake credit for a waterbody with any TMDL completed, rather than a TMDL for the pollutant for which the intake credit is applied.

One of the concerns stakeholders raised was in regards to the limited scope of the procedure, considering that many of Oregon's point sources generally increase the concentration of their intake waters which this provision does not allow. Public comments also focused around the rule requirement that the receiving waterbody must be hydrologically connected to the intake water of the facility. Where the intake water is not hydrologically connected to a facility's intake water, an intake credit cannot be used. DEQ did not revise proposed rule language to broaden the applicability of this credit and the rule continues to remain very similar to the intake credit rule contained in the *Great Lakes Water Quality Guidance*. To see more detailed DEQ responses to specific comments, please reference the *Response to Comments* document attached to the DEQ Staff Report.

B. Applicability/Scope

DEQ anticipates that the primary use of intake credits will be in major industrial permittees, possibly in conjunction with other identified implementation options (e.g. use of effluent compartmentalization and general permit). This is due to the relative simplicity to quantify the source, fate and transport of a pollutant through a facility.

DEQ also anticipates that intake credits will be limited for major domestic permittees. For major domestic permittees to make use of the provision they will need to quantify the pollutant's source, fate and transport. The field investigation and modeling for a domestic sewage collection system will require

more effort to conduct than for an industrial permittee. The expense of this process might preclude a permittee from pursuing it.

Finally, in the event that a Total Maximum Daily Load (TMDL) and waste load allocations (WLA) have been developed, intake credits are not applicable. In this case, any applicable effluent limits would be developed to meet the WLA.

C. DEQ Recommendation

DEQ recommends the proposed rule for intake credits. While DEQ expects this alternative to be useful for a limited spectrum of facilities with background pollutant issues, there may be facilities where intake credits may provide an appropriate means to comply with underlying water quality standards. In addition, such an approach has precedent among other states and EPA for its use. DEQ also notes that due to its limited applicability, additional implementation tools to address background pollutants are necessary.

D. Policy Issues and Objectives

Oregon's Reasonable Potential Analysis procedures require DEQ to determine if a permittee's effluent discharge has the reasonable potential to cause or contribute to an excursion above a numeric or narrative water quality criterion. DEQ must establish a WQBEL when a determination is made that a pollutant is, or may be, discharged at levels which cause, have the reasonable potential to cause, or contribute, to an excursion of the water quality criterion.

A number of the state's surface and ground waters contain naturally-occurring or legacy pollutants in excess of the state's water quality criteria. Based upon current rules and procedures, a facility using source water containing pollutants would receive an affirmative finding of *Reasonable Potential*. Consequently, WQBELs are calculated for the facility, effectively requiring that it take responsibility for the removal of the pollutants present in the source waters. This issue is further complicated when incidental sources of the same pollutants are present in the production process or water is lost due to evaporation.

Other important elements in this discussion include DEQ's efforts to promote the sustainable reuse of the state's water resources and the maintenance of a healthy in-stream temperature. Often, efforts to address one element of the state's water quality criteria (e.g. toxics) might conflict with efforts to protect for other criteria (e.g. temperature). The net effect of this situation would be to place WQBEL requirements on facilities for requiring additional treatment to address naturally occurring or legacy pollutants contained in source waters. This might result in a facility's attempt to achieve compliance through a reduction of efforts to control in-stream temperature or the removal of waters from the state's surface waters trough evaporative loss and/or ground water infiltration.

The objective of this implementation tool is to develop a process to address the presence of pollutants in source waters through the NPDES point source permitting process that balances the goals of reduction of in-stream toxic pollutants, maintenance of healthy in-stream temperature, and preservation of a sustainable water resource.

E. Policy Evaluation

ADVANTAGES AND DISADVANTAGES

As part of the rulemaking process to address the revised human health criteria, a number of implementation tools were considered. It should be understood that "intake credits" were selected to be one of a number of proposed tool options that could either be applied alone, or work in concert with the other tool options.

Advantages of the use of intake credits are:

- Permit-based process utilizing a modified version of existing RPA and WQBEL calculation processes. This authorizes a permit writer to implement the proposed rule with a minimum of administrative complexity.
- Strong precedent of use for water quality based evaluations in a number of states and by the EPA. Intake Credits are permitted in most states (including Oregon) for Technology-Based Effluent Limits (TBELs). Subsequently, there is a body of existing guidance and permit examples to draw from for Oregon implementation.
- The permittee is ultimately responsible for addressing any alterations of water quality that their facility might cause and not the underlying pollutant condition. Since the standard practice of many industrial and domestic processes is to remove sediments and excessive mineral content from source water before use, the net effect is that the overall mass of pollutant in the water body is typically reduced.

Disadvantages of the use of intake credits are:

- Intake credits are perceived to have a limited scope of application due to the standard practice of many of the state's facilities to increase the pollutant concentration of their effluent over that of the source water.

ALTERNATIVES CONSIDERED

Although intake credits are commonly allowed for use with Technology Based Effluent Limits (TBELs), up to a few years ago only participating states in the Great Lakes Initiative used them with WQBELs. Accordingly, proposed rule language for intake credit use in Oregon closely follows the GLI language and limited the scope of alternatives that could be developed.

In developing the proposed rule language, the department chose to incorporate a "*no net addition*" provision into the WQBEL calculation procedure. This allows for incidental concentrations of a pollutant

to be introduced from a production process as long as the added concentration is removed prior to discharge. The GLI regulations included the same provision but included a sunset clause that indicated that no incidental addition of pollutants would be allowed after a specified date. California recently added an intake credit rule to their state rules that incorporated the "no net addition" provision. After discussion and consultation, EPA supported the department's use of the "no net addition" provision in Oregon's rules.

DEQ and the advisory workgroup considered another approach, *directly incorporating intake credits into permits by referencing the GLI language without making rule changes*. Nevada rules follow this approach, but stakeholder advisory workgroup members and EPA expressed concern regarding the legal viability of this approach.

The final approach considered was to *allow the procedure be applied for any pollutants sourced from municipal water systems, regardless of the original water shed*. For example, the rulemaking workgroup discussed a scenario where Portland's municipal water system transported water from the Bull Run / Columbia watershed to a facility that subsequently discharged it to the local water body (Willamette River). EPA was consulted and they indicated that although the intent of the GLI rule was to allow pollutants from municipal sources, it was limited to only those pollutants that would have inevitably reached the discharge location. In the case of the scenario, the pollutants removed from the Bull Run watershed would have inevitably ended up in the Columbia River (upstream from the confluence with the Willamette) and transferred them to the Willamette River watershed. The act of transferring the pollutants would be grounds to disqualify the use of intake credit procedure.

SUMMARY OF RWG DISCUSSION AND VIEWS

Discussion of the RWG primarily focused on understanding how the proposed language would be implemented and the type and number of permittees that will be able to use it. Those RWG members that had more specific questions submitted their comments via email, and a telephone conference call was conducted to answer in greater depth the written comments and additional questions.

Comments included concerns over the applicability of intake credits for both human health and aquatic criteria, when the immediate focus of the group is toward human health criteria. There were also concerns on how the procedure would be implemented if a facility was granted a mixing zone in the permit or discharged to a Clean Water Act 303(d) listed waterbody. The most voiced concern was regarding the limited scope of the procedure considering that many of Oregon's point sources generally increase the concentration of their intake waters.

F. Rule Language

Rule Proposed for Public Comment

OAR 340-045-0105

Intake Credits

(1) General Provisions. The following provisions apply to the consideration of intake pollutants in determining reasonable potential under section (2) of this rule and the consideration of intake pollutants in establishing water quality based effluent limits under section (3) of this rule.

These provisions apply only in the absence of a TMDL applicable to the discharge prepared by the State and approved by Environmental Protection Agency (EPA), or prepared by EPA pursuant to 40 CFR 130.7(d). These provisions do not alter the permitting authority's obligation under 40 CFR 122.44(d)(vii)(B) to develop effluent limitations consistent with the assumptions and requirements of any available waste load allocations for the discharge, which is part of a TMDL prepared by the department and approved by EPA pursuant to 40 CFR 130.7, or prepared by EPA pursuant to 40 CFR 130.7(d).

(a) An "intake pollutant" is the amount of a pollutant that is present in public waters (including groundwater as provided in subsection (d), below, at the time it is withdrawn from such waters by the discharger or other facility supplying the discharger with intake water.

(b) An intake pollutant is considered to be from the "same body of water" as the discharge if the department finds that the intake pollutant would have reached the vicinity of the outfall point in the receiving water within a reasonable period had it not been removed by the permittee. This finding may be deemed established if:

> *(A) The background concentration of the pollutant in the receiving water (excluding any amount of the pollutant in the facility's discharge) is similar to that in the intake water;*
>
> *(B) There is a direct hydrological connection between the intake and discharge points; and*
>
> *(C) Water quality characteristics (e.g., temperature, pH, hardness) are similar in the intake and receiving waters.*

(c) The department may also consider other site-specific factors relevant to the transport and fate of the pollutant to make the finding in a particular case that a pollutant would or would not have reached the vicinity of the outfall point in the receiving water within a reasonable period had it not been removed by the permittee.

(d) An intake pollutant from groundwater may be considered to be from the "same body of water" if the department determines that the pollutant would have reached the vicinity of the outfall point in the receiving water within a reasonable period had it not been removed by the permittee, except that such a

pollutant is not from the same body of water if the groundwater contains the pollutant partially or entirely due to human activity, such as industrial, commercial, or municipal operations, disposal actions, or treatment processes.

(e) The determinations made under Sections (2) and(3), below, be made on a pollutant-by-pollutant and outfall-by-outfall basis.

(2) Consideration of Intake Pollutants in Determining Reasonable Potential:

(a) The Department may determine that there is "no reasonable potential" for the discharge of an identified intake pollutant to cause or contribute to an excursion above a narrative or numeric water quality criterion contained in Oregon's water quality standards where a discharger demonstrates to the satisfaction of the Department (based upon information provided in the permit application or other information deemed necessary by the Department) that:

> *(A) The facility withdraws 100 percent of the intake water containing the pollutant from the same body of water into which the discharge is made;*
>
> *(B) The facility does not contribute any additional mass of the identified intake pollutant to its wastewater;*
>
> *(C) The facility does not alter the identified intake pollutant chemically or physically in a manner that would cause adverse water quality impacts to occur that would not occur if the pollutants were left in-stream;*
>
> *(D) The facility does not increase the identified intake pollutant concentration at the edge of the mixing zone, or at the point of discharge if a mixing zone is not allowed, as compared to the pollutant concentration in the intake water, unless the increased concentration does not cause or contribute to an excursion above an applicable water quality standard; and*
>
> *(E) The timing and location of the discharge would not cause adverse water quality impacts to occur that would not occur if the identified intake pollutant were left in-stream.*

(b) Upon a finding under subsection (a) of this section that an intake pollutant in the discharge does not cause, have the reasonable potential to cause, or contribute to an excursion above an applicable water quality standard, the Department is not required to include a water quality-based effluent limit for the identified intake pollutant in the facility's permit, provided:

> *(A) The NPDES permit evaluation report includes a determination that there is no reasonable potential for the discharge of an identified intake pollutant to cause or contribute to an excursion above an applicable numeric water quality criterion and references appropriate supporting documentation included in the administrative record;*

(B) The permit requires all influent, effluent, and ambient monitoring necessary to demonstrate that the conditions above in subsection (a) of this section, are maintained during the permit term; and

(C) The permit contains a re-opener clause authorizing modification or revocation and re-issuance of the permit if new information shows changes in the conditions in subsection (a) (A) through (E) of this section.

(3) Consideration of Intake Pollutants in Establishing WQBELs:

(a) The Department may consider pollutants in intake water as provided in this Section III when establishing water quality-based effluent limitations based on narrative or numeric criteria, provided that the discharger has demonstrated to the satisfaction of the Department that the following conditions are met:

(A) The facility withdraws 100 percent of the intake water containing the pollutant from the same body of water into which the discharge is made;

(B) The observed maximum ambient background concentration and the intake water concentration of the pollutant exceeds the most stringent applicable water quality criterion for that pollutant;

(C) The facility does not alter the identified intake pollutant chemically or physically in a manner that would cause adverse water quality impacts to occur that would not occur if the pollutants were left in-stream;

(D) The facility does not increase the identified intake pollutant concentration, as defined by the Department, at the point of discharge as compared to the pollutant concentration in the intake water; and

(E) The timing and location of the discharge would not cause adverse water quality impacts to occur that would not occur if the identified intake pollutant were left in-stream.

(b) Where the conditions in subsection (a) of this section are met, the Department may establish a water quality-based effluent limitation allowing the facility to discharge a mass and concentration of the intake pollutant that are no greater than the mass and concentration found in the facility's intake water. A discharger may add mass of the pollutant to its waste stream if an equal or greater mass is removed prior to discharge, so there is no net addition of the pollutant in the discharge compared to the intake water.

(c) Where proper operation and maintenance of a facility's treatment system results in the removal of an intake water pollutant, the Department may establish limitations that reflect the lower mass and concentration of the pollutant achieved by such treatment.

(d) Where intake water for a facility is provided by a municipal water supply system and the supplier provides treatment of the raw water that removes an intake water pollutant, the concentration of the intake water pollutant shall be determined at the point where the water enters the water supplier's distribution system.

(e) Where a facility discharges intake pollutants from multiple sources that originate from the receiving water body and from other water bodies, the Department may derive an effluent limitation reflecting the flow-weighted amount of each source of the pollutant provided that adequate monitoring to determine compliance can be established and is included in the permit.

(f) The permit shall specify how compliance with mass and concentration-based limitations for the intake water pollutant will be assessed. This may be done by basing the effluent limitation on background concentration data. Alternatively, the Department may determine compliance by monitoring the pollutant concentrations in the intake water and in the effluent. This monitoring may be supplemented by monitoring internal waste streams or by a Department evaluation of the use of best management practices.

(g) In addition to the above, effluent limitations must be established to comply with all other applicable State and Federal laws and regulations including technology-based requirements and anti-degradation policies.

(h) When determining whether WQBELs are necessary, information from chemical-specific, whole effluent toxicity and biological assessments shall be considered independently.

(i)Permits limits must be consistent with the assumptions and requirements of waste load allocations or other provisions in a TMDL that has been approved by the EPA.

Final Rules Recommended by DEQ

OAR 340-045-0105

Intake Credits

(1) General Provisions. The following provisions apply to the consideration of intake pollutants in determining reasonable potential under section (2) of this rule and the consideration of intake pollutants in establishing water quality based effluent limits under section (3) of this rule.

These provisions do not alter the permitting authority's obligation under 40 CFR 122.44(d)(vii)(B) to develop effluent limitations consistent with the assumptions and requirements of any available waste load allocations for the discharge, that is part of a TMDL prepared by the department and approved by EPA pursuant to 40 CFR 130.7, or prepared by EPA pursuant to 40 CFR 130.7(d).

(a) An "intake pollutant" is the amount of a pollutant that is present in public waters (including groundwater as provided in subsection (d), below, at the time it is withdrawn from such waters by the discharger or other facility supplying the discharger with intake water.

(b) An intake pollutant is considered to be from the "same body of water" as the discharge if the department finds that the intake pollutant would have reached the vicinity of the outfall point in the receiving water within a reasonable period had it not been removed by the permittee. This finding may be deemed established if:

(A) The background concentration of the pollutant in the receiving water (excluding any amount of the pollutant in the facility's discharge) is similar to that in the intake water;

(B) There is a direct hydrological connection between the intake and discharge points; and

(C) Water quality characteristics (e.g., temperature, pH, hardness) are similar in the intake and receiving waters.

(c) The department may also consider other site-specific factors relevant to the transport and fate of the pollutant to make the finding in a particular case that a pollutant would or would not have reached the vicinity of the outfall point in the receiving water within a reasonable period had it not been removed by the permittee.

(d) An intake pollutant from groundwater may be considered to be from the "same body of water" if the department determines that the pollutant would have reached the vicinity of the outfall point in the receiving water within a reasonable period had it not been removed by the permittee, except that such a pollutant is not from the same body of water if the groundwater contains the pollutant partially or entirely due to human activity, such as industrial, commercial, or municipal operations, disposal actions, or treatment processes.

(e) The determinations made under Sections (2) and (3), below, will be made on a pollutant-by-pollutant and outfall-by-outfall basis.

(2) Consideration of Intake Pollutants in Determining Reasonable Potential:

(a) The department may determine that there is "no reasonable potential" for the discharge of an identified intake pollutant to cause or contribute to an excursion above a narrative or numeric water quality criterion contained in Oregon's water quality standards where a discharger demonstrates to the satisfaction of the department (based upon information provided in the permit application or other information) that:

(A) The facility withdraws 100 percent of the intake water containing the pollutant from the same body of water into which the discharge is made;

(B) The facility does not contribute any additional mass of the identified intake pollutant to its wastewater;

(C) The facility does not alter the identified intake pollutant chemically or physically in a manner that would cause adverse water quality impacts to occur that would not occur if the pollutants were left in-stream;

(D) The facility does not increase the identified intake pollutant concentration at the edge of the mixing zone, or at the point of discharge if a mixing zone is not allowed, as compared to the pollutant concentration in the intake water, unless the increased concentration does not cause or contribute to an excursion above an applicable water quality standard; and

(E) The timing and location of the discharge would not cause adverse water quality impacts to occur that would not occur if the identified intake pollutant were left in-stream.

(b) Upon a finding under subsection (a) of this section that an intake pollutant in the discharge does not cause, have the reasonable potential to cause, or contribute to an excursion above an applicable water quality standard, the department is not required to include a water quality-based effluent limit for the identified intake pollutant in the facility's permit, provided:

(A) The NPDES permit evaluation report includes a determination that there is no reasonable potential for the discharge of an identified intake pollutant to cause or contribute to an excursion above an applicable numeric water quality criterion and references appropriate supporting documentation included in the administrative record;

(B) The permit requires all influent, effluent, and ambient monitoring necessary to demonstrate that the conditions above in subsection (a) of this section are maintained during the permit term; and

(C) The permit contains a re-opener clause authorizing modification or revocation and re-issuance of the permit if new information shows the discharger no longer meets the conditions in subsection (a) (A) through (E) of this section.

(3) Consideration of Intake Pollutants in Establishing Water Quality Based Effluent Limits (WQBELs):

(a) The department may consider pollutants in intake water as provided in section (3) when establishing water quality-based effluent limitations based on narrative or numeric criteria, provided that the discharger has demonstrated that the following conditions are met:

(A) The facility withdraws 100 percent of the intake water containing the pollutant from the same body of water into which the discharge is made;

(B) The observed maximum ambient background concentration and the intake water concentration of the pollutant exceeds the most stringent applicable water quality criterion for that pollutant;

(C) The facility does not alter the identified intake pollutant chemically or physically in a manner that would cause adverse water quality impacts to occur that would not occur if the pollutants were left in-stream;

(D) The facility does not increase the identified intake pollutant concentration, as defined by the department, at the point of discharge as compared to the pollutant concentration in the intake water; and

(E) The timing and location of the discharge would not cause adverse water quality impacts to occur that would not occur if the identified intake pollutant were left in-stream.

(b) Where the conditions in subsection (a) of this section are met, the department may establish a water quality-based effluent limitation allowing the facility to discharge a mass and concentration of the intake pollutant that are no greater than the mass and concentration found in the facility's intake water. A discharger may add mass of the pollutant to its waste stream if an equal or greater mass is removed prior to discharge, so there is no net addition of the pollutant in the discharge compared to the intake water.

(c) Where proper operation and maintenance of a facility's treatment system results in the removal of an intake water pollutant, the department may establish limitations that reflect the lower mass and concentration of the pollutant achieved by such treatment.

(d) Where intake water for a facility is provided by a municipal water supply system and the supplier provides treatment of the raw water that removes an intake water pollutant, the concentration of the intake water pollutant will be determined at the point where the water enters the water supplier's distribution system.

(e) Where a facility discharges intake pollutants from multiple sources that originate from the receiving water body and from other water bodies, the department may derive an effluent limitation reflecting the flow-weighted amount of each source of the pollutant provided that adequate monitoring to determine compliance can be established and is included in the permit.

(f) The permit will specify how compliance with mass and concentration-based limitations for the intake water pollutant will be assessed. This may be done by basing the effluent limitation on background concentration data. Alternatively, the department may determine compliance by monitoring the pollutant concentrations in the intake water and in the effluent. This monitoring may be supplemented by monitoring internal waste streams or by a department evaluation of the use of best management practices.

(g) In addition to the above, effluent limitations must be established to comply with all other applicable State and Federal laws and regulations including technology-based requirements and anti-degradation policies.

(h) When determining whether WQBELs are necessary, information from chemical-specific, whole effluent toxicity and biological assessments will be considered independently.

(i) Permits limits must be consistent with the assumptions and requirements of waste load allocations or other provisions in a TMDL that has been approved by the EPA.

G. Authority and Precedence

For technology-based effluent limitations (TBELs), 40 CFR 122.45(g) indicates that TBELs can be adjusted to reflect credit for pollutants in the discharge's intake water. Therefore, the permittee is only responsible for treating the portion of the pollutant load generated or concentrated as part of their process. The credits are commonly referred to as "Intake Credit." The passage below is an excerpt from federal guidance[16] describing the application of the concept in greater detail:

EPA's NPDES permitting regulation at 40 CFR 122.45(g) currently provides a mechanism for adjusting technology-based effluent limitations to account for pollutants in a discharger's intake water in certain situations. The regulation provides that technology-based limitations shall be adjusted where the applicable effluent limitations guidelines direct that limitations be applied on a net basis, or where the discharger demonstrates that the presence of intake water pollutants prevents compliance with the applicable technology-based limitations despite proper installation and operation of the treatment system(s). The regulation also identifies four specific conditions restricting the use of net credits:

(1) Net credits for generic or indicator pollutants are not allowed unless the permittee demonstrates that the constituents of the generic measure in the effluent and influent are substantially similar or unless appropriate additional limits are placed on process water pollutants.

(2) Credit may be granted only to the extent necessary to meet the applicable technology-based limitation, up to a maximum value equal to the influent value.

(3) Credit is generally limited to discharges to the same body of water from which the intake water is drawn although the permitting authority may waive this requirement if no environmental degradation will result.

[16] Water Quality Guidance for the Great Lakes System -- Supplementary Information Document, Section VIII.E: Reasonable Potential, p. 557. Available on line at http://www.epa.gov/gliclear/docs/usepa_sid.pdf.

> *(4) Credit is precluded for return of materials generated from the treatment of intake water (e.g., raw water clarifier sludge.)*

For implementing water quality standards through WQBELS, the concept of intake credits is not explicitly discussed in the federal regulation. Various states and EPA regions do have policies and guidance permitting the use of intake credits in the reasonable potential analysis and development of WQBELs. The most developed of these is contained in the *Great Lakes Water Quality Guidance* (GLWQG) which was published in the Federal Register[17] and subsequently adopted by the eight Great Lake states in EPA Regions 5, 3, and 2. The GLWQG essentially offers an alternative reasonable potential analysis (RPA) process incorporating the concept of "Intake Credits" in cases when "*the concentration of the pollutant of concern upstream of the discharge exceeds the most stringent applicable water quality criterion for that pollutant.*" This alternative RPA process seems to use the test of whether a pollutant "*will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard…*" (40CFR 122.44(d)(1)) as the basis for its approach. Reportedly[18], the initiative was intended as guidance for state programs in developing rules and regulations rather than a specific authorizing provision.

The following is an excerpt from the **GLWQG Supplementary Information Document** describing the terms of the reasonable potential procedure. This document goes on to describe WQBEL procedures.

> *This procedure allowed permitting authorities to conclude that the return of unaltered intake water pollutants to the same body of water under identified circumstances does not cause, have the reasonable potential to cause, or contribute to an excursion above water quality standards and, therefore, WQBELs for that pollutant were not needed. The permittee would be eligible for the reasonable potential procedure in proposed procedure 5.E of appendix F upon demonstration of five conditions.*
>
> > *-- First, the permittee would need to demonstrate that it withdraws 100 percent of the intake water containing the pollutant from the same body of water into which the discharge is made.*
> >
> > *-- Second, the permittee would need to demonstrate that it does not contribute any additional mass of the specified intake water pollutant to its wastewater. In other words, the pollutant present in the discharge must be due solely to its presence in intake water from the receiving water body.*

[17] Vol. 60, No. 56 / Thursday, March 23, 1995. p. 15365-15425

[18] Based upon conversations with Melinda McCoy, formerly of EPA Region 10 and now with Region 6.

-- Third, the permittee would need to demonstrate that it does not alter the identified intake water pollutant chemically or physically in a manner that would cause adverse water quality impacts to occur from the discharge that would not occur if the pollutant were left in-stream. Alterations could occur as long as they do not cause adverse water quality impacts.

-- Fourth, the permittee would need to demonstrate that the pollutant is not concentrated at the edge of any available mixing zone after discharge from the facility.

-- Fifth, the permittee would need to demonstrate that the timing and location of the effluent discharge do not cause adverse water quality impacts to occur that would not occur if the pollutant were left in-stream.

If the permittee demonstrated the five conditions to the satisfaction of the permitting authority, the proposed procedure further identified three conditions that the permitting authority would have to address: (1) the permitting authority must summarize the basis for the determination that there is no reasonable potential for the discharge of an identified intake water pollutant to cause or contribute to an excursion above a narrative or numeric water quality criterion within a State or Tribal WQS in the NPDES permit fact sheet or statement of basis, including an evaluation of the permittee's demonstration of the five specified conditions described above; (2) the permit must require all monitoring of the influent, effluent and ambient water necessary to determine that the conditions of procedure 5.E of appendix F are maintained during the permit term; and (3) the permit must contain a re-opener clause authorizing the permitting authority to modify or revoke and reissue the permit if new information indicates that changes in any of the conditions of procedure 5.E of appendix F have occurred.

Intake credits have been adopted into the administrative rules of a number of states including California, Ohio, Indiana, Michigan, Wisconsin, Illinois, Minnesota, Pennsylvania and New York, although they are only included in a limited number of actual permits due to the inherent limitations of the Intake Credit procedure and the availability of other implementation procedures.

H. Other Supporting Information

NOT APPLICABLE

I. Implementation Information

Provisions will be made to incorporate the Intake Credit procedure into the Reasonable Potential and WQBEL calculation spreadsheets. See Appendix E for examples demonstrating intake credit scenarios.

3. Site-Specific Background Pollutant Criterion Provision

DEQ proposed for public comment a background pollutant allowance rule that was developed based on discussions with stakeholders and DEQ staff. DEQ received public comment on this provision from a variety of stakeholders, including EPA (see the Response to Comment document). After evaluating the comment, DEQ is proposing the revised rules shown in Section F below. Two major changes to the rule are reflected in the structure of the rule language and in several revisions and significant additions to the rule language. First, the final proposed rule is a performance-based standard that results in site-specific criteria, which apply only in the vicinity of the discharge and do not change the underlying criteria for the waterbody. The draft proposed rule did not describe the background pollutant allowance as resulting in site-specific criteria. Second, additional detail and procedures were added to the rule language to ensure that the application of the rule in any specific circumstance will result in a predictable and repeatable outcome. The intent is that the rule is a performance based water quality standard that will be approved by EPA and that each subsequent application of the provision to a specific circumstance will not require EPA approval. Without these additions, EPA would likely have to review and approve each application of the provision as a standards revision.

A. Description of Tool

The final proposed background pollutant provision will be a new performance based water quality standard that results in site-specific background pollutant criteria for human health (see below for rule language). The site-specific background pollutant criterion will apply in the vicinity of the discharge for the sole purpose of establishing permit effluent limits for an existing discharger. The original criterion remains applicable to the remainder of the water body and applies for all other Clean Water Act programs and actions. The proposed final rule will establish a site-specific criterion based upon the most stringent of: 1) the current discharge of intake pollutants (after any feasible known and available pollutant reduction measures are applied), 2) a 3% increase in the ambient concentration of the pollutant, or 3) a value that represents a 1×10^{-4} risk level. In no case may the discharge increase in the mass load of the pollutant in the receiving water. The relative increase in upstream ambient concentration does not result in a significant change to human health risk and the resultant pollutant concentration of the receiving water after mixing does not present an unacceptable risk to human health given that the criteria are based on a fish consumption rate that represents higher consuming populations in Oregon.

B. Applicability/Scope

The final proposed rule will apply in circumstances where facilities use water that contains the pollutant and concentrate it through one of their processes, but do not add mass load of the pollutant to their effluent or the receiving stream. This includes non-contact cooling processes, but could also include other processes that decrease water volume but leave the mass of the pollutant constant, thereby concentrating the pollutant.

The final proposed site-specific background pollutant criteria provision can be used under the following conditions:

1. The pollutant at issue has a human health criterion and is identified as a carcinogen.
2. The discharge may not increase the mass load of the pollutant in the receiving water. The mass load of the pollutant discharged to a waterbody may not exceed the mass load of the pollutant taken in from the same waterbody or a hydrologically connected water (see the definition for "same body of water" in the proposed rule).
3. The pollutant concentration in the receiving water may not be increase by more than 3% above the upstream ambient concentration as calculated using a mass balance equation and the dilution flows specified in the rule language.
4. The water body concentration after the discharge is fully mixed with the receiving water does not exceed a calculated value that represents what the human health criterion would be if it were based on a risk level of 10^{-4}.
5. The discharger uses any feasible pollutant reduction measures known and available to minimize the pollutant concentration in their discharge.

C. DEQ Recommendation

DEQ recommends that the Site-Specific Background Pollutant Criteria Provision be adopted into rule as a water quality standard. Where the conditions are met, DEQ finds this alternative preferable to variances or general permits for addressing the issue of background pollutants in intake water for reasons discussed in this section.

D. Policy Issues and Objectives

This provision is intended to address situations where a facility takes in pollutants from a waterbody with their intake water and concentrates those pollutants before discharging the water back into the same waterbody, without contributing additional pollutant mass to the water body. This may occur where a waterbody use as a water supply contains pollutants that are natural or that originate from upstream or ubiquitous sources and a downstream facility uses the water for non-contact cooling or other processes that reduce water volume. Because the facility reduces the water volume through evaporative loss or other processes, the same pollutant mass is contained in a smaller volume of water. This causes the pollutant concentration in the discharge to be higher than it was in the intake water.

Where a waterbody exceeds a water quality criterion, facilities discharging that pollutant are required to meet the criterion in their effluent at the "end of pipe," before it enters the receiving water, because there would be no dilution of the pollutant by the receiving water and a mixing zone is not allowed. Also, because the intake water already exceeds the criterion, the facility will not meet the criterion in their effluent without treatment to remove the pollutant, even if they added no mass of the pollutant through their process or activity. The intake credit rule provides a solution for facilities that take water

in and discharge it back to the waterbody with no increase in mass or concentration. However, the intake credit rule may not be used if the facility increases the pollutant's concentration. Therefore, facilities that reduce the water volume through evaporative cooling or other processes and leave a constant pollutant mass load in a smaller volume of water can't use the intake credit provision.

Without this provision, a facility in this circumstance will not be able to meet water quality standards based permit limits (WQBELs) without removing pollutants that are natural, were generated by other upstream sources, or are ubiquitous in the environment, such as those that result from atmospheric deposition. In addition, an existing industry that has been operating under an NPDES permit may not be able to renew their permit for one or more reasons:

1. The water quality criterion is lowered and is now exceeded in the facility's intake water and discharge;
2. Data becomes available due to improved monitoring or analytical methods showing that the facility's intake water and discharge exceed the criteria; or
3. Pollutant loading upstream increases such that the facility's intake water now exceeds the water quality criterion.

The objective of this policy is to provide an approach that:

1. protects human health,
2. establishes reasonable water quality standards and implementation of those standards for facilities in the predicament described above,
3. allocates limited state resources efficiently, and
4. ensures that regulatory requirements and costs for a facility are commensurate with the environmental threat they pose.

Streams that exceed water quality criteria and are identified as water quality impaired are subject to a TMDL. The TMDL identifies all the sources of the pollutants and assigns wasteload and load allocations to reduce the total pollutant load 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 intake and discharge of facilities using the waterbody as a source of water will also be reduced. The TMDL is the appropriate tool to reduce toxic pollutants for waterbodies that exceed human health criteria.

E. Policy Evaluation

ADVANTAGES AND DISADVANTAGES

The advantages of adopting this policy as a water quality standard include:

1. It provides a reasonable and protective alternative to implementing the revised statewide human health criteria for toxic pollutants under the targeted circumstances. Dischargers will not be required to remove naturally present substances or clean up pollution generated by

other sources as long as they do not contribute additional mass of the pollutant and do not significantly increase the concentration of the pollutant in the receiving water. In these circumstances there is an existing environmental problem, but the discharger in question is not the source of that problem and may not be able to correct it. The appropriate way to correct the existing problem is through implementation of a TMDL.

2. Because the increased concentration is only allowed where it will not result in an instream concentration that exceeds a 10^{-4} risk level, this provision does not result in an unacceptable human health risk. And because it is limited to no more than a 3% increase from the upstream ambient pollutant concentration, it does not represent a significant change to the existing human health risk associated with that pollutant.

3. This tool is administratively more efficient than issuing individual variances to accomplish the same objective. Therefore, it will be less costly for DEQ, for the permittee and for EPA to implement.

4. This provision provides more regulatory certainty for permittees than a variance approach, at least at this time when DEQ and EPA Region 10 experience with variances is very limited.

5. This provision meets the EQC policy objective of providing environmentally meaningful and cost effective implementation of the toxics criteria for permitted sources.

Disadvantages of this tool include:

1. There is no precedence among other states for explicitly adopting a site-specific background pollutant criteria procedure that DEQ is aware of, so it is uncertain whether EPA will approve this provision as a water quality standard. However, states have adopted other performance-based standards.

2. The provision is limited to human health criteria for carcinogens, so dischargers would not be able to use this provision if the pollutant of concern was a non-carcinogen.

3. The site-specific background pollutant criteria provision can't be used in cases where it results in a site-specific criterion associated with a risk level greater than 1×10^{-4}. In these cases, the discharger may need to request a variance. Alternatively, if DEQ has information indicating a drinking water use or other use is not attainable, DEQ would evaluate whether the uses should be revised for the water body or a portion of the water body.

ALTERNATIVE TOOLS TO ADDRESS BACKGROUND POLLUTANTS IN INTAKE WATER

There are additional tools that could be used to address the background pollutant issue. DEQ evaluated several tools and concluded that the proposed site-specific background pollutant criteria provision will be a more resource efficient way to achieve the same result, for both the permittee and DEQ. In

addition, the site-specific background pollutant criteria provision provides increased regulatory certainty for the defined set of circumstances because the outcome is more clear and predictable. Given concerns about the stringency of the proposed criteria among regulated parties and the interest of the Commission in having implementation tools that provide for cost effective and environmentally meaningful implementation, DEQ concludes that it is important to include this option in our rules.

If neither an intake credit nor a site-specific background pollutant criterion can be used to address high pollutant levels in a facility's intake water, the following alternative tools may be pursued:

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

These implementation tools are discussed in other sections of this issue paper, *Implementing Water Quality Standards for Toxic Pollutants in NPDES Permits*.

ALTERNATIVES CONSIDERED FOR DERIVING THE SITE-SPECIFIC BACKGROUND POLLUTANT CRITERION

DEQ discussed a variation of the proposed rule with the workgroup that would have broadened the applicability of the provision to include pollutants in any intake water rather than limiting it to intake pollutants from the same waterbody that receives the discharge. For example, under this variant, a facility using groundwater could consider the pollutants in that groundwater to also be intake pollutants for the purpose of determining the pollutant load allowed in the discharge. Proponents of this variation assert that if the increase is truly insignificant and is capped at a level that protects human health at an acceptable risk level, it should not matter where the intake pollutants originate. Opponents suggest that additional mass of the pollutant should not be added to a waterbody that already exceeds the water quality criterion, particularly for persistent pollutants. A waterbody that exceeds a water quality criterion is subject to a TMDL and the goal of the TMDL is to reduce the pollutant loading from all sources in order attain the water quality criteria. DEQ does not recommend this variant.

Three primary options were considered for how to define the allowed limited, or "de minimis," increase in concentration that would not present a significant added risk to human health, as described below. Because this provision will apply where the ambient upstream concentration approaches or exceeds an applicable water quality criterion, DEQ recognizes there is an existing human health risk concern in the waterbody.

DEQ's recommended rule uses both options 1 and 2 described below. First, the discharge may increase the instream concentration up to 3% above the background pollutant concentration as long as the discharger does not contribute additional pollutant mass to the receiving water. And second, the discharge may not cause the downstream pollutant concentration after mixing to exceed a value that

represents a 10^{-4} risk level. Because the risk level analysis only applies to carcinogens, the site-specific background pollutant criteria provision will only apply to carcinogens. By applying both of these limitations to the pollutant concentration increase allowed, DEQ ensures that the site-specific background pollutant criteria provision protects human health. While DEQ expects that a small number of facilities will use this provision, the 10^{-4} risk limit also ensures that any potential cumulative increases are capped at an acceptable risk level.

Option 1: An increase in the background pollutant concentration of up to 3% is allowed in the receiving water. (Applicable to all human health criteria.)

This definition of an allowed limited increase relies on the idea that a very small or "de minimis" increase does not change in a meaningful way, the health risk present in the waterbody because the source is not adding significant incremental risk to the existing situation. While the existing pollutant load in the river is a concern, the source will increase the concentration by a very small amount, which does not meaningfully change the human health risk level. In addition, the source may not increase the mass load of the pollutant in the river. Under this option, the rule would specify the river flow allowed for mixing.

Advantages:

- The allowed increase from any single source is limited to an amount that does not present a significant change in human health risk to people who eat fish and drink water from the water body.
- No increase in pollutant mass load is allowed.
- The allowed increase is relatively simple to calculate.

Disadvantages:

- There would be a slight increase in pollutant concentration in streams that exceed the water quality criterion.
- This option is available regardless of the upstream ambient concentration. There is no cap that would prevent the instream concentration increasing due to cumulative increases from multiple sources to levels that pose unacceptable health risk.

Option 2: An increase that would not cause the river concentration to exceed a calculated value that represents a cancer risk level of 10^{-4} or 10^{-5} (Applicable to carcinogens only).

Under this option, the discharge may not cause the waterbody concentration after mixing with the discharge to exceed a value that represents a human health risk greater than 10^{-4}, calculated based on EPA's criteria calculation equation for carcinogens and the site-specific background pollutant criteria provision would apply only to carcinogens.

Advantages:

- DEQ could clearly justify that the allowed concentration increase would protect human health according to EPA's 2000 Human Health Methodology because it limits the waterbody concentration to the level that represents a 1×10^{-4} risk level. This risk level is considered acceptable according to EPA guidance when it is used along with a higher fish consumption rate (i.e. a rate above EPA's subsistence rate of 144 g/d). DEQ is using a fish consumption rate of 175 g/d. The concentration would be calculated using the same method used to derive the human health criteria.
- While the higher risk level will be used for deriving the site-specific background pollutant criterion, the underlying water quality criterion for the same pollutant, which will continue to apply to the waterbody as a whole will continue to be based on a risk level of 1×10^{-6}.

Disadvantages:

- This option would only apply to carcinogens, which are based on a cancer risk level. Non-carcinogens are based on a total exposure reference dose.
- In some cases, the ambient background may already exceed the 10^{-4} or 10^{-5} based value. In these cases, this alternative will not provide a solution to the intake pollutants concentration problem and the permittee will either need to find a way to reduce their pollutant concentration or apply for a variance.
- In some cases, the allowed increase may be a larger than is desirable. A risk level of 10^{-4} is 100 times greater than a risk level of 10^{-6}, and a risk level of 10^{-5} is 10 times greater. This would potentially allow a single source an increase that would not be considered "de minimis" and does significantly change human health risk and or could create other environmental impacts.

Option 3: The calculated value of a human health criterion calculated based on a lower FCR.

Advantages:

- DEQ could justify that this increase would be sufficiently protective of human health according to EPA guidance if DEQ concluded that a fish consumption rate lower than 175 g/d was acceptable. One approach would be to estimate a site-specific consumption rate based on fish harvested from the waterbody where the discharge is located.

Disadvantages:

- In some cases, the ambient background will already exceed a criterion based on a lower consumption rate. Therefore, this option would not provide a solution to the intake pollutant concentration problem.

- Current 303(d) listings based on water quality data (as opposed to fish advisories) are based on human health criteria that were calculated using a fish consumption rate of 6.5 g/d. This option would not provide a solution for any waterbody currently listed.
- It could be difficult to establish an acceptable lower fish consumption rate to use as the basis.

SUMMARY OF RWG DISCUSSION AND VIEWS

DEQ discussed the background pollutant provision concept and various options for how it would be written and defined with the stakeholder group. There was general agreement among Rulemaking Workgroup (RWG) members with the policy objectives stated above, prior to the development of specific proposed rule language.

The permitted facility representatives emphasized the need for implementation solutions that are fair and provide regulatory certainty. They also point to the EQC directive that DEQ propose rules to allow for "environmentally meaningful and cost-effective" implementation. Their view is that in the background pollutant situation described above, the facility is not significantly altering the human health risk because the water quality problem already exists in the river and the effect of the facility is relatively negligible or "*de minimis*."

Some members of the regulated community disagree with the requirement that the mass load of pollutant in the discharge not being allowed to exceed the mass load of pollutant taken in from the same water body as the receiving water. They suggest that the allowance be broadened to allow the discharge of intake pollutants from any source, including groundwater, as long as the river concentration is not increased more than 3% and does not exceed the 10^{-4} cap.

Municipal representatives viewed the proposed background pollutant allowance provision as having limited applicability to their facilities.

Environmental organizations on the Rulemaking Workgroup emphasized the need to ensure that human health protection can be demonstrated and stated concerns about potential cumulative increases from multiple sources. The stakeholder representative from Northwest Environmental Advocates (NWEA), an environmental group, has the view that even though a facility does not add a pollutant, if they concentrate the pollutant through their activity they are contributing to the problem and the standards exceedance because standards are written as instream concentrations. NWEA also commented that: 1) the provision impermissibly changes the water quality standards without following the required process, 2) allows a mixing zone in impaired waters, and 3) should not apply to new sources.

F. Rule Language

Rule Proposed for Public Comment

(6) An increase of 3% or less in the background pollutant concentration of a water body that approaches or exceeds an applicable human health criterion for a carcinogen does not result in a significant change in human health protection and may be allowed under the conditions established in subsection (b) of this section.

(a) Definitions: For the purpose of this section:

(A) "Background pollutant concentration" means the ambient water body concentration immediately upstream of the discharge, regardless of whether those pollutants are natural or result from upstream human activity.
(B) "Approaches or exceeds an applicable human health criterion" means that the background pollutant concentration is equal to or greater than the applicable numeric criterion or would equal or exceed the criterion if it increased by 3%.
(C) The mass of pollutant in the facility's intake water is from the "same water body" if it is taken into the facility from the receiving water body or a hydrologically connected water such that the intake pollutant would have reached the vicinity of the outfall in the receiving water within a reasonable period had it not been removed by the permittee. This definition is intended to be the same as and is further explained in the 'intake credits" rule in OAR 340-045-105.

(b) Conditions for a background pollutant allowance:

(A) The mass of the pollutant in the discharge does not exceed the mass of the pollutant in the facility's intake water taken from the same water body that receives the discharge and, therefore, does not increase the mass load of the pollutant in the receiving water body.
(B) The 3% increase above the background pollutant concentration is calculated:
(i) For the Willamette and Columbia Rivers, using 25% of the harmonic mean flow of the water body.
(ii) For all other waters, using 100% of the harmonic mean flow of the water body.
(C) The background pollutant concentration is less than 97% of the value that represents a 1×10^{-4} human health risk level. This value is calculated using EPA's human health criteria derivation equation for carcinogens (EPA 2000).

(c) The Department may require the discharger to use any technologically and economically feasible pollutant reduction measures that are known to be available to prevent or minimize a pollutant concentration increase in the receiving water body, provided that the measures do not have adverse environmental effects that outweigh the benefits of the reduction in pollutant concentration.

Final Rule Recommended by DEQ

OAR 340-041-0033

(6) Establishing Site-Specific Background Pollutant Criteria: This provision is a performance based water quality standard that results in site-specific human health water quality criteria under the conditions and procedures specified in this rule section. It addresses existing permitted discharges of a pollutant removed from the same body of water. For waterbodies where a discharge does not increase the pollutant's mass and does not increase the pollutant concentration by more than 3%, and where the water body meets a pollutant concentration associated with a risk level of $1x10^{-4}$, DEQ concludes that the pollutant concentration continues to protect human health.

(a) Definitions: For the purpose of this section [OAR 340-041-0033 (6)]:

(A) "Background pollutant concentration" means the ambient water body concentration immediately upstream of the discharge, regardless of whether those pollutants are natural or result from upstream human activity.

(B) An "intake pollutant" is the amount of a pollutant that is present in public waters (including groundwater) as provided in subsection (C), below, at the time it is withdrawn from such waters by the discharger or other facility supplying the discharger with intake water.

(C) "Same body of water": An intake pollutant is considered to be from the "same body of water" as the discharge if the department finds that the intake pollutant would have reached the vicinity of the outfall point in the receiving water within a reasonable period had it not been removed by the permittee. This finding may be deemed established if:

(i) The background concentration of the pollutant in the receiving water (excluding any amount of the pollutant in the facility's discharge) is similar to that in the intake water;

(ii) There is a direct hydrological connection between the intake and discharge points; and

(I) The department may also consider other site-specific factors relevant to the transport and fate of the pollutant to make the finding in a particular case that a pollutant would or would not have reached the vicinity of the outfall point in the receiving water within a reasonable period had it not been removed by the permittee.

(II) An intake pollutant from groundwater may be considered to be from the "same body of water" if the department determines that the pollutant would have reached the vicinity of the outfall point in the receiving water within a reasonable period had it not been removed by the permittee, except that such a pollutant is not from the same body of water if the groundwater contains the pollutant partially or entirely due to past or present human activity, such as industrial, commercial, or municipal operations, disposal actions, or treatment processes.

(iii) Water quality characteristics (e.g., temperature, pH, hardness) are similar in the intake and receiving waters.

(b) Applicability

(A) Site-specific criteria may be established under this rule section only for carcinogenic pollutants.

(B) Site-specific criteria established under this rule section apply in the vicinity of the discharge for purposes of establishing permit limits for the specified permittee.

(C) The underlying waterbody criteria continue to apply for all other Clean Water Act programs.

(D) The site-specific background pollutant criterion will be effective upon department issuance of the permit for the specified permittee.

(E) Any site-specific criteria developed under this procedure will be re-evaluated upon permit renewal.

(c) A site-specific background pollutant criterion may be established where all of the following conditions are met:

(A) The discharger has a currently effective NPDES permit;

(B) The mass of the pollutant discharged to the receiving waterbody does not exceed the mass of the intake pollutant from the same body of water, as defined in section 6(a)(C) above, and, therefore, does not increase the total mass load of the pollutant in the receiving water body;

(C) The discharger has not been assigned a TMDL wasteload allocation for the pollutant in question;

(D) The permittee uses any feasible pollutant reduction measures available and known to minimize the pollutant concentration in their discharge;

(E) The pollutant discharge has not been chemically or physically altered in a manner that causes adverse water quality impacts that would not occur if the intake pollutants were left in-stream; and,

(F) The timing and location of the pollutant discharge would not cause adverse water quality impacts that would not occur if the intake pollutant were left in-stream.

(d) The site-specific background pollutant criterion must be the most conservative of the following four values. The procedures deriving these values are described in the sections (6) (e) of this rule.

(A) The projected in-stream pollutant concentration resulting from the current discharge concentration and any feasible pollutant reduction measures under (c) (D) above, after mixing with the receiving stream.

(B) The projected in-stream pollutant concentration resulting from the portion of the current discharge concentration associated with the intake pollutant mass after mixing with the receiving stream. This analysis ensures that there will be no increase in the mass of the intake pollutant in the receiving water body as required by condition (c) (B) above.

(C) The projected in-stream pollutant concentration associated with a 3% increase above the background pollutant concentration as calculated:

(i) For the mainstem Willamette and Columbia Rivers, using 25% of the harmonic mean flow of the waterbody.

(ii) For all other waters, using 100% of the harmonic mean flow or similar critical flow value of the waterbody.

(D) A criterion concentration value representing a human health risk level of 1×10^{-4}. This value is calculated using EPA's human health criteria derivation equation for carcinogens (EPA 2000), a risk level of 1×10^{-4}, and the same values for the remaining calculation variables that were used to derive the underlying human health criterion.

(e) Procedure to derive a site-specific human health water quality criterion to address a background pollutant:

(A) The department will develop a flow-weighted characterization of the relevant flows and pollutant concentrations of the receiving waterbody, effluent and all facility intake pollutant sources to determine the fate and transport of the pollutant mass.

(i) The pollutant mass in the effluent discharged to a receiving waterbody may not exceed the mass of the intake pollutant from the same body of water.

(ii) Where a facility discharges intake pollutants from multiple sources that originate from the receiving waterbody and from other waterbodies, the department will calculate the flow-weighted amount of each source of the pollutant in the characterization.

(iii) Where intake water for a facility is provided by a municipal water supply system and the supplier provides treatment of the raw water that removes an intake water

pollutant, the concentration and mass of the intake water pollutant shall be determined at the point where the water enters the water supplier's distribution system.

(B) Using the flow weighted characterization developed in Section (6) (e) (A), the department will calculate the in-stream pollutant concentration following mixing of the discharge into the receiving water. The resultant concentration will be used to determine the conditions in Section (6) (d) (A) and (B).

(C) Using the flow weighted characterization, the department will calculate the in-stream pollutant concentration based on an increase of 3% above background pollutant concentration. The resultant concentration will be used to determine the condition in Section (6) (d) (C).

(i) For the mainstem Willamette and Columbia Rivers, 25% of the harmonic mean flow of the waterbody will be used.

(ii) For all other waters, 100% of the harmonic mean flow or similar critical flow value of the waterbody will be used.

(D) The department will select the most conservative of the following values as the site-specific water quality criterion.

(i) The projected in-stream pollutant concentration described in Section 6(e) (B);

(ii) The in-stream pollutant concentration based on an increase of 3% above background described in Section 6(e) (C); or

(iii) A water quality criterion based on a risk level of 1×10^{-4}.

(f) Calculation of water quality based effluent limits based on a site-specific background pollutant criterion:

(A) For discharges to receiving waters with a site-specific background pollutant criterion, the department will use the site-specific criterion in the calculation of a numeric water quality based effluent limit.

(B) The department will compare the calculated water quality based effluent limits to any applicable aquatic toxicity or technology based effluent limits and select the most conservative for inclusion in the permit conditions.

(g) In addition to the water quality based effluent limits described in Section (6) (f), the department will calculate a mass-based limit where necessary to ensure that the condition described in Section (6) (c) (B) is met. Where mass-based limits are included, the permit shall specify how compliance with mass-based effluent limitations will be assessed.

(h) The permit shall include a provision requiring the department to consider the re-opening of the permit and re-evaluation of the site-specific background pollutant criterion if new information shows the discharger no longer meets the conditions described in subsections (6) (c) and (e).

(i) Public Notification Requirements.

> *(A) If the department proposes to grant a site-specific background pollutant criterion, it must provide public notice of the proposal and hold a public hearing. The public notice may be included in the public notification of a draft NPDES permit or other draft regulatory decision that would rely on the criterion and will also be published on the water quality standards website;*
>
> *(B) The department will publish a list of all site-specific background pollutant criteria approved pursuant to this rule. A criterion will be added to this list within 30 days of its effective date. The list will identify: the permittee; the site-specific background pollutant criterion and the associated risk level; the waterbody to which the criterion applies; the allowable pollutant effluent limit; and how to obtain additional information about the criterion.*

G. Authority and Precedence

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 Clean Water Act in Oregon. DEQ must provide supporting documentation to EPA that demonstrates that the proposed criteria protect relevant beneficial uses designated by the state. For the human health toxics criteria, these uses include fishing (fish consumption) and domestic water supply (water consumption). 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 using site-specific criteria development to address background pollutant issues associated with toxic pollutants. 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 within Oregon's water quality standards, such as temperature and turbidity, though the circumstances of each of these is different. For example, the temperature standard allows a minimal increase from the numeric criterion, whereas the turbidity standard allows a limited increase from upstream 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.

The background pollutant provision is a performance-based standard that specifies in detail the procedures DEQ will use to establish site-specific background pollutant criteria. Under this approach, DEQ will not have to conduct rulemaking for each application of the procedure, but DEQ will provide public comment as described further below. Similarly, this approach allows DEQ to obtain EPA approval of the performance-based standard and avoids the need to obtain EPA approval for each individual site-specific criterion developed under the procedure. EPA has provided guidance for developing a

performance-based approach consistent with the CWA and EPA's implementing regulations. This approach may be used to streamline state and tribal adoption of criteria *(EPA Review and Approval of State and Tribal Water Quality Standards, 65 FR 24648)*. Adopting the detailed procedures directly into the WQS regulations establishes a decision-making framework that is binding, clear and predictable.

H. Other Supporting Information

Rationale for Beneficial Use Protection

Where a water body is already water quality limited for a human health criterion, DEQ concludes that a 3% or less increase in concentration 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 the 3% allowed increase in concentration in a spatially limited portion of the waters of the state. For carcinogens, the risk is based on exposure over a life time (70 years) and for the majority of non-carcinogens, the cumulative exposure is based on a daily level of exposure over a life time. Therefore, DEQ would not expect the 3% incremental increase allowed through this provision in a limited number of stream reaches to measurably change the exposure to the pollutant received by people eating fish.

To further assure that DEQ can demonstrate that the proposed site-specific background pollutant criteria provision will protect human health, there are several limitations to its applicability. First, only pollutants identified as carcinogens are eligible. Second, the site-specific background pollutant criterion may not allow more than a 3% increase in the upstream ambient pollutant concentration after mixing with the critical streamflow defined in the rule and guidance documents. Third, the site-specific background pollutant criterion may not exceed a value that represents a 10^{-4} risk level. This value would be calculated using the criteria calculation method from EPA's 2000 Human Health Methodology. Fourth, no increase in mass loading of the pollutant is allowed. These limitations assure that the provision protects human health at an acceptable level given that Oregon is using a fish consumption rate of 175 g/d.

In addition, the site-specific background pollutant criterion would apply in the vicinity of the discharge and be used solely for establishing permit effluent limits for the discharger. The underlying water quality criterion for the water body will not change and will continue to be used for section 303(d) listing and TMDL development.

In addition, the streamflow volume used to calculate the site-specific background pollutant criterion will be limited to 25% of the harmonic mean flow for the Willamette and Columbia rivers in order to limit the potential increase in the concentration of pollutants in the effluent plume prior to complete physical mixing in these rivers. This is consistent with a goal of reducing the potential impacts of toxic pollutants in Oregon waters.

The human health risk that is when a waterbody exceeds a human health criterion (based on a 10^{-6} risk level) and the sources of the pollutant contributing to that exceedence must be addressed. Water bodies known to exceed the human health criteria are identified as impaired and TMDLs must be developed to address the pollutant loading to the extent the pollutant loading is under human control. In the interim, if a community obtains their water supply from a stream that exceeds water quality criteria, they should take appropriate action to protect their community until the water quality problem is addressed. The insignificant incremental increase that would be allowed under this background provision would not change the need for the water provider to address this pre-existing issue.

I. Implementation Information

Because the site-specific background pollutant criteria provision is a performance-based water quality standard that results in site-specific criteria, the procedures that will be used to derive site-specific criteria are included in the rule language and will be reviewed by EPA. Additional detail on implementing the standard will also be provided in an internal management directive (IMD), which is a guidance document directed to DEQ staff. Some of the relevant procedures are also described in existing IMDs for implementing toxics standards in permits and for mixing zone analysis.

The site-specific background pollutant criteria developed under this provision will apply in the vicinity of the discharge for the sole purpose of establishing permit limits for the permittee. The underlying water body criterion does not change and will continue to be used for all other Clean Water Act purposes. In addition, the site-specific background pollutant criterion will be reviewed when the permit is renewed to evaluate whether the conditions and data use to establish the criterion have changed.

This provision may only be used by existing permittees who have not been assigned a wasteload allocation under a total maximum daily load (TMDL) for the same pollutant.

Determining the Site-specific Background Pollutant Criterion

The site-specific background pollutant criterion will be the most conservative of the four values listed below. The procedures to derive these values are described in rule section (6) (e) and additional detail for calculating these values will be provided in an internal management directive to DEQ staff.

1. The first value is based on the current discharge or the discharge concentration that will be achieved after the permittee uses any known, available and feasible pollutant reduction measures. The site-specific criterion will be the instream concentration after mixing with the receiving stream according to current mixing zone analyses.

As a condition of developing the site-specific background pollutant criterion, the permittee must use any known, available and feasible pollutant reduction measures that would minimize the pollutant concentration in their discharge. In its evaluation of whether pollutant reduction measures are known, available and feasible, DEQ will consider whether the pollutant reduction measure will result in adverse environmental effects. Due to the variability of facilities and range of options that may or may not be

available to minimize the pollutant in question, DEQ expects this analysis will vary by facility. Not all situations will warrant pollutant reduction measures, depending on the circumstances.

2. The second value is based on the portion of the current discharge concentration attributable to the qualified intake pollutant mass. This analysis is only needed where some pollutant mass may enter the facility through other sources, such as other intake waters or raw materials, and ensures that there will be no increase in the mass load of the intake pollutant in the receiving water body.

3. The third value is the projected in-stream pollutant concentration associated with a 3% increase above the existing waterbody background pollutant concentration as calculated:

(i) For the mainstem Willamette and Columbia Rivers, using 25% of the harmonic mean flow of the waterbody.

(ii) For all other waters, using 100% of the harmonic mean flow or similar critical flow value of the waterbody.

4. The fourth value is a calculated criterion based on a human health risk level of 1×10^{-4}. This value is calculated using EPA's human health criteria derivation equation for carcinogens (EPA 2000). While the risk level used in the calculation would be changed to 1×10^{-4}, the values for the remaining variables in the calculation will be the same as those that were used to derive the underlying human health criterion that applies to the waterbody.

Implementation in NPDES Permits

Once the site-specific background pollutant criterion has been determined, that criterion will be used to establish a numeric permit effluent limit using the same procedures and guidance used for establish permit limits for any human health toxic criterion. DEQ will include an effluent limit in all discharge permits relying on a site-specific background pollutant criterion. DEQ will also establish a mass-based limit where necessary to ensure that the discharge does not add mass load of the pollutant to the receiving stream as described in Section (6) (c) (B) of the rule. The need for the site-specific criterion and the required conditions will be reviewed each time the permit is renewed.

Public Notice and Information

If DEQ proposes to grant a site-specific background pollutant criterion, it will provide public notice of the proposal and hold a public hearing. The public notice may be included in the public notification of a draft NPDES permit or other draft regulatory decision that would rely on the criterion and will also be published on the water quality standards website.

DEQ will publish a list of all site-specific background pollutant criteria approved pursuant to this rule and will post that list on the water quality standards website. A criterion will be added to this list within 30 days of its effective date. The list will identify: the permittee; the site-specific background pollutant

criterion and the associated risk level; the waterbody to which the criterion applies; the allowable pollutant effluent limit; and how to obtain additional information about the criterion.

4. Variances with Pollutant Reduction Plans

One of the existing tools discussed with the RWG is variances, which provide a mechanism to meet alternate requirements where permittees cannot meet limits based on water quality standards. Federal regulations allow variances (40 CFR § 131.13), and provisions governing their use have been adopted by a majority of states into their water quality standards. Variances can be used as an implementation tool, under appropriate circumstances, to establish alternative requirements where facilities are unable to meet effluent limits based on very low water quality toxics criteria, while improving water quality. Oregon's existing water quality standards include a provision allowing variances to be granted (see OAR 340-041-0061(2)). However, no variance has been sought for or granted to a facility in Oregon. DEQ's objective for these revisions is to ensure that variances and their accompanying pollutant reduction plans result in continued progress toward meeting standards, to streamline the administration process, to require pollutant reduction plans with specific milestones that will result in water quality improvement, and to add general clarification to the rule.

Objectives:

1. Propose rule revisions to ensure efficiency in the administrative process for granting variances, while also maintaining integrity in the variance issuance process.
2. Propose rule revisions that clarify what interim conditions and requirements apply during the variance period and under what circumstances.
3. Describe the information and rationale needed to request and justify a variance, as well as the renewal process.
4. Describe how DEQ will coordinate internally and with EPA to foster predictable and timely processing of variance requests (a separate interagency agreement is recommended).

Goal Statement:

Propose revisions to Oregon's variance authorizing provision and develop an IMD that will:

- Ensure variances, where justified, are granted and implemented consistently through a transparent, well-defined, and reliable process;
- Foster water quality improvement during the variance period through pollutant reduction plans;
- Promote certainty in the variance process by ensuring that variances can be granted within a reasonable time frame; and

- Identify the consequences and next steps when a variance or renewal is not granted.

Feasibility Demonstration

To be eligible for a variance, a permittee must demonstrate that attaining the designated use is not feasible based on one or more of the grounds outlined in 40 CFR 131.10(g):

1. naturally occurring pollutant concentrations prevent the attainment of the use;

2. natural, ephemeral, intermittent, or low- flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating State water conservation requirements to enable uses to be met;

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;

4. hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in the attainment of the use;

5. physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to [chemical] water quality, preclude attainment of aquatic life protection uses; or

6. controls more stringent than those required by sections 301(b)(l)(A)and(B) and 306 of the Clean Water Act (i.e. technology-based standards) would result in substantial and widespread economic and social impact.

DEQ worked closely with the RWG to develop revised variance language. While the substance of this language remains, there were a number of changes DEQ made to the proposed variance rule based on public comment. Although some of these revisions were more clarifying in nature, other revisions were more substantive. For example, although generally point sources that do not have a currently effective NPDES permit would not be eligible for a variance, there were several circumstances in which a variance could be considered. One of these circumstances was remediating water contamination from a CERCLA or RCRA site. While clean up orders typically require measures to meet substantive water quality standards, authority exists under both statutory schemes to ensure such activities meet the respective requirements of each statute, according to DEQ's Land Quality Division and the Department of Justice, and as such, variances will not be needed for these situations. Therefore, this exception was removed from the rule.

DEQ removed Section (3) from the rule. The inclusion of this language prompted many questions from several commenters. DEQ evaluated whether the inclusion of this section provided additional clarifications or justification for those circumstances that may warrant a variance request and concluded it did not.

DEQ added language under the variance submittal requirements that a permittee must submit a description of nonpoint source best management practices the discharger is implementing to address the pollutant the variance is based upon. DEQ also clarified that the DEQ Director approves variance renewals, rather than the commission.

DEQ also clarified, in rule, that the variance provision will only become applicable for Clean Water Act purposes after EPA approval. To see more detailed DEQ responses to specific comments, please reference the *Response to Comments* document attached to the DEQ Staff Report.

A. Description of Tool

Definition

A variance is a short-term exemption from meeting water quality standards-based limits for a specific pollutant(s) which would otherwise be applicable to an individual discharger and provides a means to ensure progress toward meeting the water quality standards in the interim.

- Variances are most commonly discharger-specific, but some states in the Great Lakes area have also used "multiple-discharger" (i.e. where a general variance is granted to more than one discharger under a defined situation) or "waterbody" variances. The proposed provision is limited to individual dischargers.

- A variance is granted for a specific pollutant(s) and does not otherwise modify the standards applicable to the waterbody. A variance does not exempt the discharger from compliance with applicable technology-based limits (TBELs) or water quality-based limits (WQBELs) for other pollutants. Underlying water quality standards remain in effect for all other purposes (e.g., impaired water listings, TMDL development, etc.)

- A variance is granted for a specific period of time (length of time varies by state). The discharger must either meet limits based upon the standard upon the expiration of this time period or must make a renewed demonstration of "unattainability."

B. Applicability/Scope

Revisions to the regulatory language maintains the scope of the current rule, with both aquatic life and human health criteria (as does the current variance provision) being eligible. DEQ anticipates receiving variance requests for circumstances where: (1) a discharger cannot meet the revised human health

water quality criterion for a toxic pollutant because the background concentration of the pollutant is naturally elevated (e.g., arsenic) or elevated as a result of past or ongoing contamination that cannot easily be remedied or would cause more environmental damage to correct than to leave in place (e.g., dieldrin); (2) technology has not yet been proven to consistently remove contaminants to the level needed; and, (3) implementation of controls more stringent than technology-based requirements would result in substantial and widespread economic and social impact.

DEQ does not have data indicating how many permittees will request a variance. During the stakeholder advisory committee discussions, some stakeholders asserted that the need for variances would be widespread among existing NPDES permittees. Some permittees may be able to use other implementation tools (e.g. intake credits) or may be able to adjust treatment processes or employ pollutant reduction strategies to comply with effluent limits sufficient to meet water quality standards. The SAIC Report[19] extrapolated the potential number of variance applications from a sample of industrial and municipal facilities and found that DEQ may need to review approximately 40 variance requests under the baseline criteria (fish consumption rate of 17.5 g/day) and an additional 16 under the revised criteria.

C. DEQ Recommendation

Under appropriate circumstances, variances can be used as an implementation tool to allow facilities to comply with permit requirements based on water quality standards that include more stringent proposed water quality toxics criteria for human health. Variances are currently allowed under both the CWA and Oregon's current state water quality standard rules. Although not all states use variances, there are a number of states that employ variances which have been approved by EPA. In light of DEQ's and EPA Region 10's lack of experience processing variance requests, DEQ and EPA will work closely to develop a common understanding of the justification factors supporting a variance request and to assure timely decisions on variance requests.

DEQ final proposed rule requires that pollutant reduction plans (PRPs) as part of each variance to assure pollutant loadings are reduced to the maximum extent practicable. This requirement will result in a tool for making environmental progress where possible, even if permittees cannot achieve permit limits based on the criterion in the short term. Variances can also provide a "bridge" if additional data or analyses are needed before Oregon can develop a TMDL for that waterbody or make a determination that the designated use is not attainable and an adoption of an alternative use is needed. Another significant factor when contemplating the use of variances is that the underlying water quality standards to support the designated uses of the receiving water body are maintained, even if effluent limits to

[19] Science Applications International Corporation (SAIC). *Cost of Compliance with Water Quality Criteria for Toxic Pollutants for Oregon Waters*. June 2008.

comply with a water quality standard cannot be achieved by an individual facility in the short term. The requirement to maintain the current water quality standards encourages the development of more advanced pollutant reduction treatment technologies in the future that may also be less costly. It also provides an opportunity for broad pollutant reduction strategies to be implemented and possibly reduce pollutant loads.

D. Policy Issues and Objectives

The intent of the variance provision is to:

- provide a temporary mechanism by which permits can be written to meet a modified water quality standard where the permittee demonstrates it is infeasible to meet limits associated with a specific water quality standard within the meaning of 40 CFR § 131.10(g);
- maintain underlying water quality standards as goals rather than removing designated uses and associated criteria that may be ultimately attainable; and
- ensure the highest level of water quality achievable during the term of the variance through the implementation of pollutant reduction plans.

In recent years, states have used the flexibility available through variances to include additional requirements during the variance period for achieving source reduction through implementation of pollutant reduction plans (PRPs). DEQ's final proposed rule requires that PRPs be included each variance to assure pollutant loadings are reduced to the maximum extent practicable during the term of the variance. DEQ views PRPs as an important component of a pollution reduction strategy. PRPs will be discussed later in this section and in greater detail through a separate IMD addressing variances and the associated pollutant reduction plans.

E. Policy Evaluation

ADVANTAGES AND DISADVANTAGES

ADVANTAGES

1. Variances are a currently available legal tool under federal CWA and state water quality rules.
2. Variances have been successfully used in other states and approved by EPA.
3. Variances can and have been used as a tool to make environmental progress by requiring the applicant to develop pollutant minimization plans where possible even though they are temporarily not able to achieve permit limits required to meet the criterion.
4. Variances allow the receiving waterbody to maintain the beneficial use goal for the long term, even if it cannot be achieved in the short term. For example, technologies may improve and can lower costs; economic scenarios can change; what is not "affordable" in the short term may be affordable over a longer term.

5. A variance can provide a "bridge" if additional data or analyses are needed before the state can make a determination that the designated use is not attainable and an adoption of an alternative use is needed.
6. Variances could provide regulatory flexibility under a variety of circumstances, including situations where natural or human-caused background pollutants already exceed a water quality standard, if adequately justified based on at least one of the factors at 40 CFR 131.10(g).
7. Variances could provide opportunities to use solutions such as offsets or trading where meeting a WQBEL is not feasible through end-of-pipe treatment.

DISADVANTAGES

1. The administrative process related to submitting and DEQ and EPA approval of a variance could be cumbersome.
2. Although DEQ regulation currently allows variances, DEQ has not received any variance requests to date and therefore, does not have a proven process in place.
3. EPA must approve each variance request. Some have stated concerns that EPA will not approve variance requests for the issues specific to Oregon.
4. Some permittees do not like the perception as being seen as "out of compliance", particularly in circumstances where background concentrations of pollutants contribute to a WQBEL exceedance and are not wholly attributed to point source discharges.
5. Some environmental stakeholders view variances as a mechanism to increase the number of discharges that will not meet water quality standards designed to protect aquatic life and human health.

ALTERNATIVES CONSIDERED

Some people perceive variances as a "last resort" option for facilities unable to comply with applicable water quality standards. As such, there have been a number of alternatives to variances discussed with the work group that have focused on compliance tools that attempt to avoid those factors leading to a variance.

For example, proposed rule language for intake credits has been developed for situations where the origin of a pollutant in a discharge is solely attributable to pollutants already present in the intake water for a facility (see discussion on intake credits in section IV.4). Availability of an intake credit would obviate the need for variances in at least some situations.

General permits that address process and non-process waters separately may be allowed in certain circumstances, thereby avoiding a request for a variance (See IV.1 for more information on General Permits). The final proposed site-specific background pollutant criteria provision will allow some increase in the receiving stream concentration, as long as the pollutant mass does not increase. This concept of allowing a certain amount of increase in concentration, while still being protective of the

designated use is further discussed in the site-specific background pollutant criteria provision section of this paper (See IV.3).

DEQ also considered not proposing revised variance language, and instead, continuing to rely on the existing variance regulatory language (*See 340-041-0061(2)*). The revisions in the final proposed variance rule intend to make variances more useful and workable for both sources and DEQ where DEQ determines a variance is appropriate and justified. The final proposed rule revisions streamline the administrative process by authorizing the DEQ Director to approve most variance requests instead of the EQC and aligning the variance process and duration better with the permitting process and duration. In addition, the required pollutant reduction plan will reduce the level of toxics present in effluent streams to the maximum extent possible through implementation of various pollutant reduction strategies. Despite these improvements included in the final proposed rule revisions, DEQ does have the authority to implement variances through the existing regulation. The existing variance regulations specify a three year variance duration, must be approved by the EQC, do not exclude aquatic life criteria eligibility, and do not include requirements for a pollutant reduction plan.

SUMMARY OF RWG DISCUSSION AND VIEWS

A substantial amount of discussion occurred within the stakeholder advisory workgroup during the development of the proposed rules on the topic of variances. During that time, the majority of workgroup members expressed some level of concern about implementing variances, primarily focusing on issues such as lack of a track record in Oregon, the EPA approval requirement, and a "slippery slope" perception of broadening permit implementation tools, including variances, beyond their original intended purposes. Environmental representatives provided both verbal and written comments to DEQ in regards to interpretation of certain regulatory language where they perceive an erosion of water quality standards regulations in order to provide greater flexibility to permittees in meeting requirements associated with very low toxics criteria. Although environmental representatives acknowledged that requirements based on the proposed toxics criteria will be challenging to achieve, any exceptions or flexibilities allowed within the permitting tools should not necessarily apply to other water quality standards without first setting the context of the complexity of technical concerns surrounding this rulemaking. DEQ responded[20] to some of the major comments received from these groups at the time the comments were received during the development of the proposed rule. Some of the comments and responses were superseded by the rule DEQ published for public comment.

Industrial representatives expressed concerns regarding whether or not their industries would meet any of the six justification factors at 40 CFR 131.10(g). In particular, 40 CFR 131.10(g)(6) addresses substantial and widespread economic impacts associated with controls more stringent than those

[20] DEQ. Toxics Rulemaking: DEQ recommendations on addressing workgroup issues associated with revised variance regulatory language. May 13, 2010.

required by sections 301 (b) (l) (A) and (B) and 306 of the CWA. A rationale based on this factor could be more difficult for industry to support than, for example, a POTW, given that financial impacts associated with the manufacture of their products may not have widespread impacts to the local economy and are not as easily definable as an expected rate increase to ratepayers. Thus, industrial representatives emphasized that they need assurances that background pollutant issues can actually be addressed through the variance process.

Representatives from ACWA also expressed strong reservations regarding the use of variances, particularly since the other proposed implementation tools will not be as straightforward for domestic wastewater utilities to use. Below is an excerpt taken from an ACWA proposal[21] describing a pollution prevention approach at the May 20, 2010 workgroup meeting:

> "Municipal wastewater treatment plants plan and operate their facilities over long investment periods. Facility planning is completed on a 20-year basis. Many process elements of a wastewater treatment are put in service for even longer periods than 20 years. A water quality variance process that is intended to be '*short term*' and '*temporary*' is not workable for municipalities and districts as a compliance strategy for toxics reduction under an increased fish consumption rate."

Municipal wastewater representatives also expressed concerns over the potential costs and challenges in putting together the data necessary to justify a variance application, and the uncertainties with how a variance application is processed in permit renewals (in terms of the timing of the variance application process, development of the variance permit conditions, and the review and approval).

Moreover, ACWA stated that municipal point sources are not the major contributors for the toxic pollutants of concern and that toxics reduction and control should include all sources. Instead, stronger use of effective pollution prevention tools should be incorporated into the overall program and approach, rather than relying on variances.

EPA generally expressed support for using variances as a permit tool. EPA staff stated that they are committed to making the variance process work and will strive to assure timely completion of variance review and approval.

F. Rule Language

Rule Proposed for Public Comment

DEQ proposes to replace the existing variance provision at OAR 340-041-0061(2) with a new provision at OAR 340-041-0059.

[21] ACWA. Increased Fish Consumption Rate. NPDES Compliance through Pollution Prevention. April 23, 2010.

OAR 340-041-0059

Variances

(1) Applicability. Subject to the requirements and limitations set out in sections (2) through (8) below, a point source may request a variance. The director of the department will determine whether to issue a variance for a source covered by an existing NPDES permit. The commission will determine whether to issue a variance for a discharger that does not have a currently effective NPDES permit.

(a) The variance applies only to the specified point source permit and pollutant(s); the underlying water quality standard(s) otherwise remains in effect.

(b) The department or commission may not grant a variance if:

(A) The effluent limit sufficient to meet the underlying water quality standard can be attained by implementing technology-based effluent limits required under sections 301(b) and 306 of the federal Clean Water Act, and by implementing cost-effective and reasonable best management practices for nonpoint sources under the control of the discharger; or

(B) The variance would likely jeopardize the continued existence of any threatened or endangered species listed under section 4 of the Endangered Species Act or result in the destruction or adverse modification of such species' critical habitat; or

(C) The conditions allowed by the variance would result in an unreasonable risk to human health; or

(D) A point source does not have a currently effective NPDES permit, unless the variance is necessary to:

- *(i) prevent or mitigate a threat to public health or welfare;*
- *(ii) allow a water quality or habitat restoration project that may cause short term water quality standards exceedances, but will result in long term water quality or habitat improvement that enhances the support of aquatic life uses;*
- *(iii) provide a widespread socioeconomic benefit that is demonstrated to outweigh the environmental cost of lowering water quality. This analysis is comparable to that required under the antidegradation regulation contained in OAR-041-0004(6)(b); or*
- *(iv) remediate water contamination pursuant to the Comprehensive Environmental Response Compensation and Liability Act (CERCLA, 42 U.S.C. 9601 et seq. as amended through July 1, 2006), or the Resource Conservation and Recovery Act (RCRA, 42 U.S.C. 6901 et seq. as amended through July 1, 2006); or*

(E) The information and demonstration submitted in accordance with section (5) below does not allow the department or commission to conclude that a condition in section (2) has been met.

(2) Conditions to Grant a Variance. Before the commission or department may grant a variance, it must determine that:

(a) no existing use will be impaired or removed as a result of granting the variance and

(b) attaining the water quality standard during the term of the variance is not feasible for one or more of the following reasons:

(A) Naturally occurring pollutant concentrations prevent the attainment of the use;

(B) Natural, ephemeral, intermittent, or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges to enable uses to be met without violating state water conservation requirements;

(C) 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;

(D) Dams, diversions, or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or to operate such modification in a way which would result in the attainment of the use;

(E) Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and unrelated to water quality preclude attainment of aquatic life protection uses; or

(F) Controls more stringent than those required by sections 301(b) and 306 of the federal Clean Water Act would result in substantial and widespread economic and social impact.

(3) Sections (2)(b)(A) and (2)(b)(C) of this rule include, but are not limited to, circumstances in which the department determines that all the following are demonstrated to be true:

(a) The background concentration of the pollutant to which the variance applies exceeds the underlying water quality standard for that pollutant;

(b) The background concentration of the pollutant would exceed the underlying water quality standard without pollutant loadings from sources regulated by the NPDES permit program; and

(c) Enforceable controls on other pollutant sources are not likely to achieve the underlying water quality standard within the term of the variance.

(4) Variance Duration.

(a) The duration of the variance shall not exceed the term of the NPDES permit. If the permit is administratively extended, the permit effluent limits and any other requirements based on the variance and associated pollutant reduction plan will continue to be in effect during the period of the administrative extension. DEQ will give priority to NPDES permit renewals for permits containing variances and where a renewal application has been submitted to the director at least one hundred eighty days prior to the NPDES permit expiration date.

(b) When the duration of the variance is less than the term of the permit, the permittee must be in compliance with the specified effluent limitation sufficient to meet the underlying water quality standard upon the expiration of the variance.

(c) A variance is effective only after EPA approval. The effective date will be specified in a NPDES permit or order of the commission or department.

(5) Variance Submittal Requirements. To request a variance, a permittee must submit the following information to the department:

(a) A demonstration that attaining the water quality standard for a specific pollutant is not feasible for the requested duration of the variance based on one or more of the conditions found in section (2)(b) of this rule;

(b) A description of treatment or alternative options considered to meet the applicable underlying water quality standard, and a description of why these options are not technically or financially feasible;

(c) Sufficient water quality data and analyses to characterize ambient and discharge water pollutant concentrations;

(d) A proposed pollutant reduction plan that includes any actions to be taken by the permittee that would result in reasonable progress toward meeting the underlying water quality standard. Such actions may include proposed pollutant offsets or trading or other proposed pollutant reduction activities, and associated milestones for implementing these measures. Pollutant reduction plans will be tailored to address the specific circumstances of each facility and to the extent pollutant reduction can be achieved; and

(e) If the discharger is a publicly owned treatment works, a demonstration of the jurisdiction's legal authority (such as a sewer use ordinance) to regulate the pollutant for which the variance is sought. The jurisdiction's legal authority must be sufficient to control potential sources of that pollutant that discharge into the jurisdiction's sewer collection system.

(6) Variance Permit Conditions. Effluent limits in the discharger's permit will be based on the variance and not the underlying water quality standard, so long as the variance remains effective. The department shall establish and incorporate into the discharger's NPDES permit all conditions necessary to implement and enforce an approved variance and associated pollutant reduction plan. The permit must include, at minimum, the following requirements:

(a) an interim permit limit or requirement representing the best achievable effluent quality based on discharge monitoring data and which is no less stringent than that achieved under the previous permit;

(b) a requirement to implement any pollutant reduction actions approved as part of a pollutant reduction plan submitted in accordance with section (5)(d) above and to make reasonable progress toward attaining the underlying water quality standard(s);

(c) any studies, effluent monitoring, or other monitoring necessary to ensure compliance with the conditions of the variance; and

(d) an annual progress report to the department describing the results of any required studies or monitoring during the reporting year and identifying any impediments to reaching any specific milestones stated in the variance.

(7) Public Notification Requirements.

(a) If the department proposes to grant a variance, it must provide public notice of the proposal and hold a public hearing. The public notice may be included in the public notification of a draft NPDES permit or other draft regulatory decision that would rely on the variance;

(b) The department will publish a list of all variances approved pursuant to this rule. Newly approved variances will be added to this list within 30 days of their effective date. The list will identify: the discharger; the underlying water quality standard the pollutant reduction plan was developed to achieve; the waters of the state to which the variance applies; the effective date and duration of the variance; the allowable pollutant effluent limit granted under the variance; and how to obtain additional information about the variance.

(8) Variance Renewals.

(a) A variance may be renewed if the permittee:

(A) makes a renewed demonstration pursuant to section (2) of this rule that attaining the water quality standard continues to be infeasible,

(B) demonstrates that all conditions and requirements of the previous variance and actions contained in the pollutant reduction plan are being met, and

(C) meets all other requirements of this rule.

(b) A variance renewal must be approved by either the department director or the commission, and by EPA.

(c) Renewal of the variance shall be denied if the permittee is not in compliance with the conditions of the previous variance, including those specified in section (6) of this rule, or otherwise does not meet the requirements of this rule.

340-041-0061

Other Implementation of Water Quality Criteria

DEQ deleted the existing variance rule at section (2).

(1) A waste treatment and disposal facility may not be constructed or operated and wastes may not be discharged to public waters without a permit from the department in accordance with ORS 468B.050.

~~*(2) Water quality variances. The commission may grant point source variances from the water quality standards in this Division where the following requirements are met.*~~

~~*(a) The water quality variance may apply only to the point source for which the variance is requested and only to the pollutant or pollutants specified in the variance; the underlying water quality standard otherwise remains in effect.*~~

~~*(b) A water quality standard variance may not be granted if:*~~

~~*(A) Standards will be attained by all point source dischargers implementing effluent limitations required under sections 301(b) and 306 of the federal Clean Water Act and by nonpoint sources implementing cost-effective and reasonable best management practices; or*~~

~~*(B) The variance would likely jeopardize the continued existence of any threatened or endangered species listed under section 4 of the Endangered Species Act or result in the destruction or adverse modification of such species' critical habitat.*~~

~~*(c) Before a variance is granted, the applicant must demonstrate that attaining the water quality standard is not feasible for one of the following reasons:*~~

~~*(A) Naturally occurring pollutant concentrations prevent the attainment of the use.*~~

~~*(B) Natural, ephemeral, intermittent, or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges to enable uses to be met without violating state water conservation requirements.*~~

~~*(C) 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.*~~

~~*(D) Dams, diversions, or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or to operate such modification in a way which would result in the attainment of the use.*~~

~~*(E) Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and unrelated to water quality preclude attainment of aquatic life protection uses.*~~

~~*(F) Controls more stringent than those required by sections 301(b) and 306 of the federal Clean Water Act would result in substantial and widespread economic and social impact.*~~

~~*(d) Procedures. An applicant for a water quality standards variance must submit a request for a variance to the department. The application must include all relevant information showing that the requirements for a variance have been satisfied. The burden is on the applicant to demonstrate that the designated use is unattainable for one of the reasons specified in subsection (c) of this section. If the department preliminarily determines that grounds exist for granting a variance, it must provide public notice of the proposed variance and an opportunity for public comment.*~~

~~*(A) The department may condition the variance on the performance of additional studies, monitoring, management practices, and other controls deemed necessary. These terms and conditions will be incorporated into the applicant's NPDES permit or department order.*~~

~~*(B) A variance may not exceed three years or the term of the NPDES permit, whichever is less. A variance may be renewed if the applicant reapplies and demonstrates that the use in question is still not attainable. Renewal of the variance may be denied if the applicant does not comply with the conditions of the original variance or otherwise does not meet the requirements of this section.*~~

~~*(C) DEQ approval of a variance for a point source is not effective under the federal Clean Water Act until submitted to and approved by EPA.*~~

Final Rules Recommended by DEQ

OAR 340-041-0059

Variances

This rule (OAR 340-041-0059) does not become applicable for purposes of ORS chapter 468B or the federal Clean Water Act unless and until EPA approves the provisions it identifies as water quality standards pursuant to 40 CFR 131.21 (4/27/2000).

(1) Applicability. Subject to the requirements and limitations set out in sections (2) through (7) below, a point source may request a water quality standards variance where it is demonstrated that the source cannot feasibly meet effluent limits sufficient to meet water quality standards. The director of the department will determine whether to issue a variance for a source covered by an existing NPDES permit. The commission will determine whether to issue a variance for a discharger that does not have a currently effective NPDES permit.

(a) The variance applies only to the specified point source permit and pollutant(s); the underlying water quality standard(s) otherwise remains in effect.

(b) The department or commission may not grant a variance if:

(A) The effluent limit sufficient to meet the underlying water quality standard can be attained by implementing technology-based effluent limits required under sections 301(b) and 306 of the federal Clean Water Act, and by implementing cost-effective and reasonable best management practices for nonpoint sources under the control of the discharger; or

(B) The variance would likely jeopardize the continued existence of any threatened or endangered species listed under section 4 of the Endangered Species Act or result in the destruction or adverse modification of such species' critical habitat; or

(C) The conditions allowed by the variance would result in an unreasonable risk to human health; or

(D) A point source does not have a currently effective NPDES permit, unless the variance is necessary to:

- *(i) Prevent or mitigate a threat to public health or welfare;*
- *(ii) Allow a water quality or habitat restoration project that may cause short term water quality standards exceedances, but will result in long term water quality or habitat improvement that enhances the support of aquatic life uses;*
- *(iii) Provide benefits that outweigh the environmental costs of lowering water quality. This analysis is comparable to that required under the antidegradation regulation contained in OAR-041-0004(6)(b); or*

(E) The information and demonstration submitted in accordance with section (4) below does not allow the department or commission to conclude that a condition in section (2) has been met.

(2) Conditions to Grant a Variance. Before the commission or department may grant a variance, it must determine that:

(a) No existing use will be impaired or removed as a result of granting the variance and

(b) Attaining the water quality standard during the term of the variance is not feasible for one or more of the following reasons:

(A) Naturally occurring pollutant concentrations prevent the attainment of the use;

(B) Natural, ephemeral, intermittent, or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges to enable uses to be met without violating state water conservation requirements;

(C) 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;

(D) Dams, diversions, or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the waterbody to its original condition or to operate such modification in a way which would result in the attainment of the use;

(E) Physical conditions related to the natural features of the waterbody, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and unrelated to water quality preclude attainment of aquatic life protection uses; or

(F) Controls more stringent than those required by sections 301(b) and 306 of the federal Clean Water Act would result in substantial and widespread economic and social impact.

(3) Variance Duration.

(a) The duration of a variance must not exceed the term of the NPDES permit. If the permit is administratively extended, the permit effluent limits and any other requirements based on the variance and associated pollutant reduction plan will continue to be in effect during the period of the administrative extension. The department will give priority to NPDES permit renewals for permits containing variances and where a renewal application has been submitted to the director at least one hundred eighty days prior to the NPDES permit expiration date.

(b) When the duration of the variance is less than the term of a NPDES permit, the permittee must be in compliance with the specified effluent limitation sufficient to meet the underlying water quality standard upon the expiration of the variance.

(c) A variance is effective only after EPA approval. The effective date and duration of the variance will be specified in a NPDES permit or order of the commission or department.

(4) Variance Submittal Requirements. To request a variance, a permittee must submit the following information to the department:

(a) A demonstration that attaining the water quality standard for a specific pollutant is not feasible for the requested duration of the variance based on one or more of the conditions found in section (2)(b) of this rule;

(b) A description of treatment or alternative options considered to meet limits based on the applicable underlying water quality standard, and a description of why these options are not technically, economically, or otherwise feasible;

(c) Sufficient water quality data and analyses to characterize ambient and discharge water pollutant concentrations;

(d) Any cost-effective and reasonable best management practices for nonpoint sources under the control of the discharger that addresses the pollutant the variance is based upon;

(e) A proposed pollutant reduction plan that includes any actions to be taken by the permittee that would result in reasonable progress toward meeting the underlying water quality standard. Such actions may include proposed pollutant offsets or trading or other proposed pollutant reduction activities, and associated milestones for implementing these measures. Pollutant reduction plans will be tailored to address the specific circumstances of each facility and to the extent pollutant reduction can be achieved; and

(f) If the discharger is a publicly owned treatment works, a demonstration of the jurisdiction's legal authority (such as a sewer use ordinance) to regulate the pollutant for which the variance is sought. The jurisdiction's legal authority must be sufficient to control potential sources of that pollutant that discharge into the jurisdiction's sewer collection system.

(5) Variance Permit Conditions. Effluent limits in the discharger's permit will be based on the variance and not the underlying water quality standard, so long as the variance remains effective. The department must establish and incorporate into the discharger's NPDES permit all conditions necessary to implement and enforce an approved variance and associated pollutant reduction plan. The permit must include, at a minimum, the following requirements:

(a) An interim concentration based permit limit or requirement representing the best achievable effluent quality based on discharge monitoring data and that is no less stringent than that achieved under the previous permit. For a new discharger, the permit limit will be calculated based on best achievable technology;

(b) A requirement to implement any pollutant reduction actions approved as part of a pollutant reduction plan submitted in accordance with section (4)(e) above and to make reasonable progress toward attaining the underlying water quality standard(s);

(c) Any studies, effluent monitoring, or other monitoring necessary to ensure compliance with the conditions of the variance; and

(d) An annual progress report to the department describing the results of any required studies or monitoring during the reporting year and identifying any impediments to reaching any specific milestones stated in the variance.

(6) Public Notification Requirements.

(a) If the department proposes to grant a variance, it must provide public notice of the proposal and hold a public hearing. The public notice may be included in the public notification of a draft NPDES permit or other draft regulatory decision that would rely on the variance;

(b) The department will publish a list of all variances approved pursuant to this rule. Newly approved variances will be added to this list within 30 days of their effective date. The list will identify: the discharger; the underlying water quality standard addressed by the variance; the waters of the state to which the variance applies; the effective date and duration of the variance; the allowable pollutant effluent limit granted under the variance; and how to obtain additional information about the variance.

(7) Variance Renewals.

(a) A variance may be renewed if:

(A) The permittee makes a renewed demonstration pursuant to section (2) of this rule that attaining the water quality standard continues to be infeasible,

(B) The permittee submits any new or updated information pertaining to any of the requirements of section 4,

(C) The department determines that all conditions and requirements of the previous variance and actions contained in the pollutant reduction plan pursuant to section (5) have been met, unless reasons outside the control of the discharger prevented meeting any condition or requirement, and

(D) All other requirements of this rule have been met.

(b) A variance renewal must be approved by the department director and by EPA.

G. Authority and Precedence

HISTORY OF EPA POLICY/ GUIDANCE

EPA first addressed the use of state WQS variance provisions in a 1976 decision from EPA's General Counsel, which specifically considered an Illinois variance provision. Since then, EPA has continuously expanded upon the acceptability of state WQS variance procedures through several policy memos,

Federal Register notices for various proposed and final rules, and in EPA's 1994 *Water Quality Standards Handbook, 2nd Edition*.

STATES' UTILIZATION OF VARIANCES

Most states have general authorizing provisions and procedures for variances. Over 20 states covering all but one of the EPA regions have granted variances to state water quality standards under their variance provisions. Parameters covered by the variances range from metals such as mercury and copper, to conventional parameters such as bacteria, ammonia and dissolved oxygen. EPA Region 10 has approved a variance for a municipal facility in Idaho. The degree of use of variances in these twenty states varies, as well as the approaches that these states have taken in granting variances.

H. Other Supporting Information

None

I. Implementation Information

This section outlines DEQ's proposed general approach and procedures in implementing variances. Detailed guidance will be developed through an Internal Management Directive. See Appendix D for an illustration of variance scenarios.

REQUIREMENTS AND CONDITIONS FOR A VARIANCE

Approved variances, including interim conditions and requirements, will be incorporated into NPDES permits. Interim variance conditions and requirements including elements of pollutant reduction plans will be developed on a case by case basis depending on the circumstances of the permittee requesting the variance. At a minimum, each permittee requesting a variance will be required to submit the following information to DEQ for review and approval:

General

- An applicant for a water quality standards variance must submit a request for a variance to DEQ. The application must include all relevant information showing that the requirements for a variance have been satisfied. The burden is on the applicant to demonstrate that attaining the designated use is not feasible for one of the reasons specified in 40 CFR 131.10(g).
- Variances will be granted for the minimum amount of time needed, however, DEQ expects that generally, the duration of a variance will coincide with the term of a NPDES permit since if a shorter time frame is identified, alternative permitting tools may be used, such as compliance schedules. The duration will be determined based on the justification provided by each applicant. The applicant must either meet limits based upon the water quality standards upon the expiration of this time period or renew its demonstration as described in DEQ's regulations.

- Each variance is subject to public notification requirements. DEQ expects that the variance public comment opportunity will be concurrent with the opportunity to comment on the draft permit.
- An individual variance is granted for a specific pollutant(s) and beneficial use and does not otherwise modify the water quality standards for the waterbody.
- A variance does not exempt the permittee from compliance with applicable technology-based limits or water quality-based limits for other pollutants.
- Sources must continue to achieve the lowest effluent concentration possible under their current operations and treatment. At a minimum, these requirements will reflect the best effluent quality achieved under current operations and treatment, presuming the permittee is operating the system at optimum performance levels under a variety of environmental conditions. Where pollutant reduction plans are expected to result in improved effluent quality, milestones and/or more stringent effluent quality requirements will be incorporated in the permit as part of the pollutant reduction plan.
- The permittee must demonstrate that advanced treatment technology is necessary to achieve limits based on the water quality standard for which the variance is sought.
- The permittee must describe treatment or alternative options considered to meet limits based on the water quality standard for which the variance is sought, and describe why these options are either not feasible or how the variance would satisfy the condition described at 40 CFR 131.10(g).
- The permittee must develop a pollution reduction plan to identify reasonable and cost effective measures for reducing or eliminating pollutant loading. Measures may include, but are not limited to the following: treatment optimization, investigating inflow and infiltration issues; exploring alternate source waters; or examining pre-treatment local limits. Other measures could include trading or offsets. Milestones will be established for pollutant reduction plans to ensure implementation of the measures described in the plan.
- The requirements of the variance and associated pollutant reduction plan, as appropriate, will be included as conditions of the NPDES permit.
- The variance is effective only after EPA approval.
- The permittee must demonstrate that an impairment or loss of an existing use would not result from the granting of the variance
- Any cost effective and reasonable BMPs for nonpoint sources under the control of the discharger must be submitted to DEQ as part of the variance submittal requirements. These BMPs may be implemented either before or as part of the PRP. In a few cases, a variance may not be needed if BMPs implemented before the expiration of a permit result in meeting effluent limits.

ADMINISTRATIVE PROCESS

1. Request for Variance

If a permittee will ultimately be able to meet effluent limits based on the water quality criterion and WQBEL, but needs additional time to comply (e.g. secure funding, install or optimize treatment technology, etc.), an enforceable compliance schedule is the most appropriate implementation tool and will be developed by the permit writer.

In other cases, permittees may not be able to achieve a more stringent WQBEL in the foreseeable future due to factors such as background concentrations of pollutants, high costs for treatment technologies, or lack of technology that has been consistently shown to remove specific pollutants to very low levels. A permittee may be eligible for a variance if it can demonstrate that attaining a designated use is not feasible due to one of the six conditions found under 40 CFR 131.10(g). Another case where a variance may be appropriate is when a permittee cannot meet the designated use in the short term but has opportunities to improve its water quality (and possibly meet criteria), but implementation of those measures will occur over time and uncertainty exists regarding the ultimate water quality that the permittee is capable of achieving.

In some cases, the most appropriate long term solution may be a change to the water quality standards addressing either the designated use or criteria or both. A variance may be issued as an interim measure before adequate information is available and rulemaking can occur to establish the correct attainable use and appropriate criteria.

2. Variance Evaluation Report

As part of the public notice package, the permit writer will prepare a Variance Evaluation Report. The report will describe the reason for the variance and why the permittee is eligible for the variance, including cross-references to information DEQ relied on in making its findings. The evaluation report should include, but is not limited to, the information numbered below.

Specific requirements for variance requests and how to include variance requests as part of a permit renewal will be further developed in an Implementation Management Directive (IMD).

1. Pollutant source investigation report
2. Water quality standards at issue
3. Water quality data summary
4. Effluent data summary
5. Reason for variance request per 340-041-0059(2) and a factual description of why the water quality-based effluent limit cannot be achieved.

6. Demonstration that treatment beyond applicable technology based limits is necessary to achieve compliance with effluent limits derived from the water quality standards for which a variance is sought.

7. Treatment or alternative options to treatment considered, and explanation of why these options are either not technically feasible or satisfy the condition described at OAR 340-041-0059(2)(b). This analysis also includes any facility-controlled nonpoint source actions to reduce the pollutant of concern.

8. Proposed duration and justification for the requested variance team.

9. Proposed interim discharge limits/conditions representing the lowest level of pollutant(s) achievable during the term of the variance.

10. Characterization of risk to human health and aquatic life as a result of the variance.

3. DEQ Review and Decision

Once DEQ receives the application, standards and permitting staff will review it for completeness and adequacy and will make approval recommendations to the Director (or, if the applicant does not have a currently effective NPDES permit, to the EQC). DEQ staff will coordinate review of the application with the permit development and issuance process. This process will be detailed in the IMD. An applicant will need to provide adequate justification showing that at least one of the six variance conditions prevents attainment of the designated use. A description of each variance condition is given below, including the types of situations DEQ is now aware of that may be appropriate for consideration under the different factors.

1. Naturally occurring pollutant concentrations prevent the attainment of the use

This variance condition describes a situation where natural background concentrations of a pollutant, such as a naturally occurring earth metal, already exceeds or contributes to a water quality criterion violation. This occurrence may be more frequent given proposals to make human health criteria more stringent, use of more robust analytic methods and the expansion of toxics monitoring throughout the state. These pollutants are naturally occurring and may contaminate a permittee's wastewater through the facility's intake water.

In some cases, permittee's may only be using intake water for non-contact cooling processes which do not increase mass of the pollutant, but can concentrate the pollutant through evaporative processes and water re-use. This may lead the permittee to install cost prohibitive treatment to remove very small amounts of pollutant for very little, if any, environmental gain. In addition, some treatment technologies have not yet been proven to

reduce pollutants to the regulated level. Some permittees falling into this category may be able to employ an intake credit, but others would likely need a variance. Applicants should include, at a minimum, the information below in support of this rationale.

- Sufficient upstream ambient data to adequately characterize pollutant concentrations.
- Sufficient effluent and mixing zone analysis data (if receiving waterbody is not water quality limited).
- Information demonstrating that the pollutant is naturally occurring, including the source or sources of the pollutant and how they enter the facility discharge. In some cases, it can be difficult to distinguish whether the source of the pollutant is naturally occurring or from human-caused pollution. Ultimately, this determination could be based on best professional judgment, however, DEQ staff will review the pollutant investigation report to evaluate whether or not the permittee has provided a sound rationale in determining the source of the pollutant.

2. ***Natural, ephemeral, intermittent, or low- flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating State water conservation requirements to enable uses to be met;***

DEQ anticipates that this factor is most suitable for use attainability analysis situations where assessments are being done to evaluate water flow conditions related to the attainability of the aquatic life uses. Some states have also used this factor to evaluate the attainability of recreational uses. At this time, DEQ is not aware of any specific situation where this condition would be applicable. As result, DEQ does not foresee variances being requested based on this factor in the short term. However, if a situation developed where a variance could be considered under this condition, DEQ will work with EPA to determine course of action.

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;***

Similar to condition #1 above, this factor may be applicable in circumstances where pollutant concentrations already exceed the applicable water quality criteria within the waterbody, but in this instance the source of the pollutant is anthropogenic, as opposed to naturally occurring. An example of this type of human-caused condition is “legacy” pollutants which are ubiquitous in the environment and result from past use of toxic

chemicals such as DDT, PCBs, or dieldrin. Although many of these products have since been banned, some will persist in the environment for many more years and may continue to be discharged into waterbodies by nonpoint sources. As with naturally occurring pollutants, permittees may bring the contaminant into their facilities through process waters (e.g. non-contact cooling), and then discharge the same contaminant (without adding mass) to the receiving waterbody, where the concentration may slightly increase.

One way permittees may use this factor to justify a variance would be to demonstrate that for an individual facility, it is not able to affect the presence of one or more pollutants in their effluent (i.e., "…sources of pollution … cannot be remedied…"). The sources of the pollutant within the watershed may be so diffuse as to make quantifiable estimates difficult (i.e. impeding the facilities' ability to reduce at the source concept), or the amount of treatment needed to reduce the pollutants of concern to necessary effluent concentrations is cost prohibitive or not proven.

Another use of this factor would be to describe how taking an alternative approach would have adverse environmental consequences (i.e., "… would cause more environmental damage to correct than to leave in place"). For example, for a facility that has non-contact cooling water as part of their process, the cooling water can be used multiple times prior to being discharged. This leads to a reduction in the amount of water the source draws from the river, thereby conserving in-stream water flow and minimizing temperature impacts. The permittee could alternatively consider reducing the number of passes to decrease pollutant concentrations in its effluent, but that alternative may contribute to temperature increases in the river and would reduce streamflow in the reach between the withdrawal and the discharge. Other alternatives could include consideration of additional treatment, which could result in other unintended environmental effects, such as potential disposal issues with waste generated from various treatment technologies (e.g. brines, spent resin); or alternative water source issues (e.g. high levels of arsenic in groundwater), etc.

4. ***Hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in the attainment of the use;***

DEQ anticipates that this factor is most suitable for use attainability analysis situations where assessments are being done to evaluate water flow conditions related to the attainability of the aquatic life uses. Some states have also used this factor to evaluate the attainability of recreational uses. At this time, DEQ is not aware of any specific situation where this condition would be applicable. As result, DEQ does not foresee variances being requested based on this factor. However, if a situation developed where a variance could be considered under this condition, DEQ will work with EPA to determine course of action.

5. ***Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to [chemical] water quality, preclude attainment of aquatic life protection uses; or***

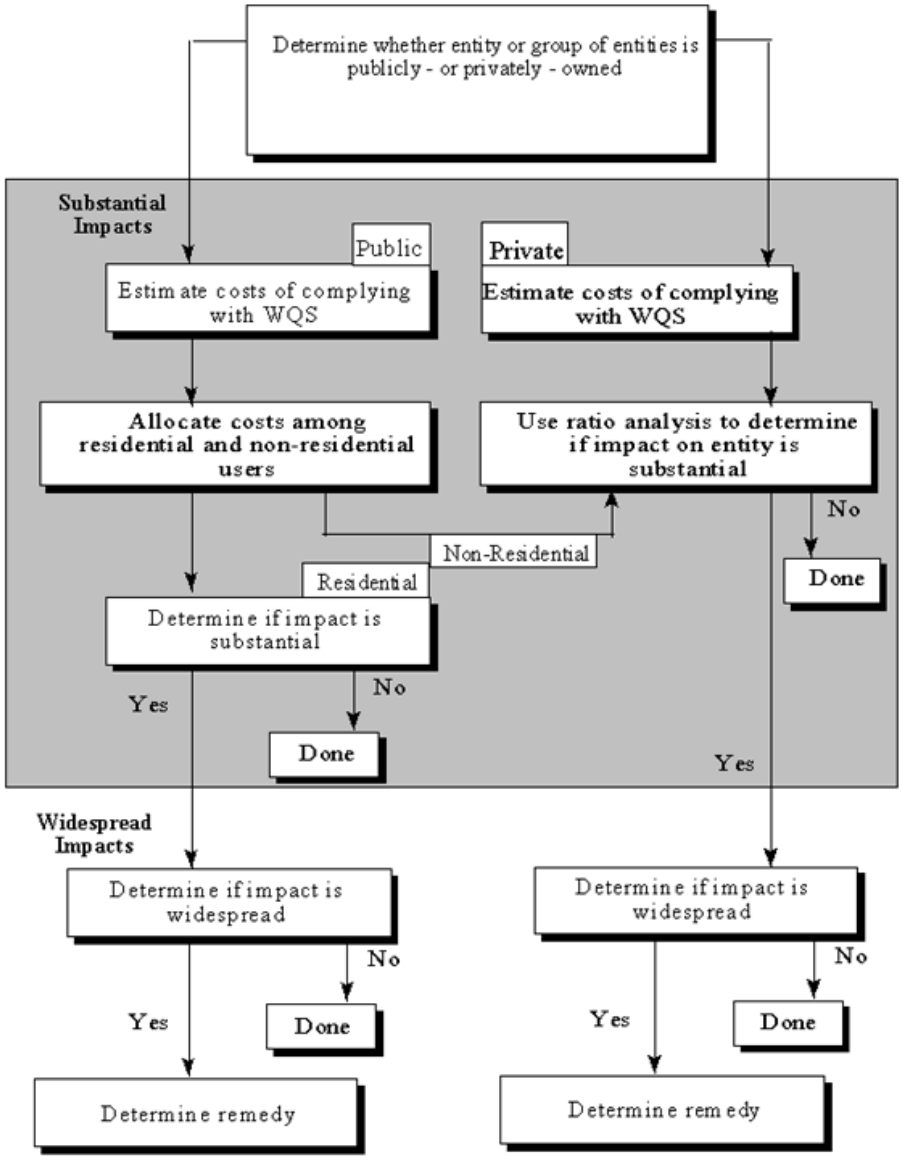
   DEQ anticipates that this factor is most suitable for use attainability analysis situations where assessments are being done to evaluate water flow conditions related to the attainability of the aquatic life uses. At this time, DEQ is not aware of any specific situation where this condition would be applicable. As result, DEQ does not foresee variances being requested based on this factor. However, if a situation developed where a variance could be considered under this condition, DEQ will work with EPA to determine course of action.

6. ***Controls more stringent than those required by sections 30l (b) (l) (A) and (B) and 306 of the Act would result in substantial and widespread economic and social impact.***

   EPA has developed a guidance describing the steps involved in the determination of "substantial and widespread economic and social impact" for point sources covered by sections 301(b) and 306 of the Clean Water Act. While EPA's 1995 Economic Interim Guidance for Water Quality Standards (EPA-823-B-95-002) is not an exhaustive description of all appropriate economic analyses, a justification submitted consistent with this guidance would most likely be approved by EPA. Figure 3 is a diagram taken from the guidance which describes the basic steps in determining substantial and widespread economic impact for both private and public entities.

Figure 3: Steps in Determining Substantial and Widespread Economic Impact

Figure 1-1:
Steps in the Economic Impact Analysis
Determining Whether Impacts Will be Substantial and Widespread



4. Public Notification Process

If DEQ proposes to grant a variance, it must provide public notice of the proposed variance and an opportunity for public comment and hearing. This requirement can be done in conjunction with the public notice and comment period of a NPDES permit.

5. EPA Approval Process

The final proposed rule requires that variances must be approved by the DEQ Director, except for variances for a new permittee, which are approved by the EQC. The variance is not effective, however, until it has been approved by EPA. DEQ will submit the variance evaluation report along with DEQ approval documentation to EPA Region 10. EPA standards staff will evaluate the variance package and determine whether or not the documentation supports the requested variance.

Aquatic life criteria variances submitted to EPA for approval are subject to Endangered Species Act (ESA) consultation requirements. Section 7(a)(2) of the ESA requires that federal agencies, in consultation with the U.S. Fish and Wildlife Service and the National Oceanic and Atmospheric Administration Fisheries Service, ensure that their actions are not likely to jeopardize the existence of federally listed species or result in the adverse modification of designated critical habitat of such species. EPA will need to address obligations under the Endangered Species Act. EPA envisions the consultation be tiered such that the detailed assessment of potential affects will occur at the time of EPA action on individual variances. Extended time for ESA consultation will need to be built into the standard variance approval timeframe for variances that require such consultation.

EPA has up to 90 days to review and act upon the variance (per 40 CFR 131.21(a)). The effective date of the variance will be no earlier than the date of EPA approval.

6. Public Information on Variances

As described in the final proposed rule, DEQ will publish a list of all approved variances to state water quality standards that have been granted by the state and approved by EPA on DEQ's website. Newly granted variances will be added to this list within 30 days of their effective date. The list will identify: (1) the person or entity for which the variance was granted; (2) the underlying water quality standards to which the variance was granted; (3) the water(s) affected; (4) the effective and expiration dates of the variance; (5) the allowable pollutant effluent limit granted under the variance; and (6) where additional information on the variance may be found.

7. Renewal Process

The final proposed rule describes the requirements for variance renewals. Variances may be renewed if an applicant reapplies and demonstrates that the designated use is still not

attainable or that the conditions upon which the variance was granted continue to exist at the time of the permit renewal. The renewal request must be submitted at least 180 days prior to the expiration of the NPDES permit. Renewal of the variance may be denied if the applicant does not comply with the conditions of the original variance or otherwise does not meet the requirements set forth in variance regulations. In addition DEQ will require the permittee to submit information demonstrating that reasonable progress has been made towards achieving the underlying water quality standard.

DEQ's intent is to renew NPDES permits that contain variances in a timely manner. NPDES permits with variances that expire within a year will be considered a priority for DEQ.

POLLUTION REDUCTION PLAN (PRP)

The final proposed rule requires a pollutant reduction plan for facilities requesting a variance and will be tailored to specific circumstances of each permittee. In some cases, PRPs will be quite extensive, depending upon the degree to which the permittee contributes to pollutant loading. In other cases, the contribution could be quite small, or the opportunities to reduce pollutant loadings may be limited. For example, a facility that only uses intake water for non-contact cooling purposes may only slightly increase the pollutant concentration (but not add mass) from background pollutant concentrations due to evaporative processes. A PRP would be required, but the expectation of identifying additional opportunities to further reduce pollutant concentrations would be lowered.

Conversely, where a discharge results in a water quality criterion exceedance through a facility's industrial process, source materials used, and/or inflow and infiltration issues, and treatment to reduce effluent concentrations are not available, DEQ will work with the permittee to develop a more robust PRP to reduce the pollutant of concern through interim milestones for implementation. PRPs would be reviewed by the DEQ permit writer on a yearly basis to assess progress and identify impediments in reaching specific milestones, as well as affirm that conditions on which the variance was based on have not changed.

The objective of a PRP is to implement, where possible, activities which could reduce the amount of pollutant reaching a waterbody and achieve progress toward meeting the water quality standards. The intent is to reduce pollutant contributions to the maximum extent practicable and, while requirements based on water quality standards may be achieved following implementation, achievement of water quality standards is not an explicit requirement of the PRP. PRP activities could include, but not be limited to the following:

1. **Source Reduction**

   In some cases, a permittee may be able to identify major contributors of a pollutant of concern. In other cases, sources are unclear and not quantifiable. The most economic and effective way of reducing overall toxics in the environment may be to reduce the use of these materials

whenever possible, as described below. Interim milestones could be developed based on the time needed to set up and implement public education campaigns, a mercury take back program, or develop additional requirements for a pre-treatment program, etc.

- **explore alternate sources for intake water**

  For example, there may be a ground water or surface water source that could be available to the facility, thus avoiding a water quality criterion violation which would have otherwise occurred. However, the permittee would need to balance the advantages and disadvantages of using this source. If a permittee knows that an alternate source is available which would meet water quality criteria, a compliance schedule to allow time needed to implement the change in process could be the better alternative. If the outcome is uncertain, then a variance may still be the appropriate tool.

- **material substitution**

  In the case of source material, some pollutants "hitchhike" onto raw materials used in industrial processes, such as wood forest products or the electronics industry. Permittees may be able to substitute materials containing pollutants with other, less toxic, materials. Manufacturers may also be able to reformulate products to be environmentally safer, cost competitive, and effective. If a permittee is able to substitute materials used in their industrial process for less toxic ones, it may want a compliance schedule to allow time needed to implement the change in process. If the outcome is uncertain, then a variance may be the appropriate tool.

- **pollution prevention programs**

  In some circumstances, the permittee may not be responsible for background pollutants, but may be able to help fund or initiate outreach and education efforts to reduce the pollutant source entering their facility (e.g. mercury take back programs).

- **develop and implement pre-treatment local limits**

  A POTW may have a pre-treatment program for a categorical standard, but those limits do not necessarily reduce the amount of another toxic pollutant not covered by that standard. A POTW could develop a local limit for all the indirect industrial users to help reduce the pollutant of concern from entering the collection system, thus reducing potential treatment costs and receiving water concentrations. Other options could be explored as well.

- **offsets/trading**

Offsets may allow a permittee to reduce loading from an upstream source in order to create the assimilative capacity they need to meet water quality standards downstream at the discharge point. If sufficient assimilative capacity was reached and a water quality criterion met, the permittee would not need to apply for a variance. This may not be feasible in situations where legacy or naturally-occurring pollutants are diffuse in the environment and are not easily identifiable or preventable.

2. Treatment/Process Optimization Strategies

- **Investigate inflow and infiltration interactions**

  For example, a POTW may have an antiquated collection system which allows arsenic from ground water to seep through cracked pipes and be carried as influent to the treatment plant, thus contributing to an exceedance of the arsenic water quality criterion. DEQ could develop interim limits based on the permittee's expected capital improvements to the collection system. For instance, the variance could include a requirement that **X** feet of leaking pipes would be replaced, or that **X%** of capital improvements would be made over a certain time period.

- **Optimize current treatment technology**

  Treatment optimization may be most feasible where relatively small pollutant reductions are needed, or where sampling data show that pollutant loads increase throughout the treatment process as a result of chemical additions or treatment techniques. It may, however, be difficult to see improvements in removal efficiencies if the facility is already well maintained and operated. Some optimization strategies include:

  - ✓ Operator training
  - ✓ Maintenance activities
  - ✓ Adjusting coagulant doses
  - ✓ Increasing filter maintenance and backwash cycles
  - ✓ Installation of automation equipment

5. Compliance Schedules

A. Description

NPDES permits may include a compliance schedule, which is a series of required steps and deadlines which, upon completion, enables the permittee to meet the permit's water quality based effluent limits (see 40 CFR § 122.47 and OAR 340-041-0061(16)). Interim effluent permit limits may also be included in certain circumstances.

B. Applicability/Scope

A current DEQ rule (OAR 340-041-0061(16)) authorizes the use of compliance schedules in NPDES permits in conformance with the EPA rule authorizing the use of compliance schedules (40 CFR 122.47). A compliance schedule can be used only to implement water quality-based effluent limits newly applicable to the permit that the permittee is unable to meet upon issuance of the permit, and must ensure that the limits are achieved as soon as possible.

C. DEQ Recommendation

There is no need to adopt a rule authorizing compliance schedules specifically for implementation of human health criteria, because DEQ's existing rule authorizes the use of compliance schedules for all newly applicable WQBELs in water quality permits.

D. Issues and Objectives

In 2007, the Northwest Environmental Defense Center, Northwest Environmental Advocates, Columbia Riverkeeper and Willamette Riverkeeper filed a lawsuit against EPA, alleging that EPA failed to complete an Endangered Species Act consultation with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service before approving DEQ's 2006 rule authorizing the use of compliance schedules. DEQ intervened in the litigation and agreed not to issue any compliance schedules until resolution of the litigation. In June 2010, the parties executed an agreement settling the litigation.

As required by the settlement agreement, DEQ issued an Internal Management Directive to guide staff on when and how to grant compliance schedules in permits. DEQ may now grant compliance schedules in accordance with the rule and the Internal Management Directive.

The purpose of compliance schedules is to give permittees time to make upgrades or changes in operations or facilities necessary to meet newly applicable water quality based effluent limits. As long as the permittee meets the milestones set forth in the compliance schedule, the permittee will not be subject to enforcement for failing to meet the WQBEL(s) addressed by the compliance schedule. (If a permittee is unable to meet *existing* WQBELs, DEQ will take appropriate enforcement action, which may

include a compliance order or mutual agreement and order that includes enforceable deadlines and milestones.)

E. Policy Evaluation

Not applicable, because it is not necessary to make changes to existing rules which allow DEQ to use compliance schedules in permits implementing newly applicable WQBELs.

F. Proposed Rules

Not applicable

G. Authority and Precedence

DEQ is authorized by OAR 340-041-0061(16) and 40 CFR 122.47 to use compliance schedules in water quality permits under certain circumstances as discussed in sections A, B and D above.

H. Other Supporting Information

None

I. Implementation Information

The Internal Management Directive on Use of Compliance Schedules in Permits describes the circumstances under which DEQ may grant a compliance schedule in a permit, including the information the permittee must submit to support the request, the contents of the compliance schedule (including milestones and interim effluent limits), and tracking the permittee's compliance with the requirements of the compliance schedule. As of December 2010, DEQ has issued only one permit containing a compliance schedule since the litigation was settled in June 2010.

V. APPROACHES NOT RECOMMENDED FOR CURRENT RULEMAKING

1. Water Quality Restoration Standards

A. Description of Tool

DEQ evaluated the concept of "restoration water quality standards" for use in situations where waterbodies cannot meet water quality standard goals set by state and federal regulations and are not expected to meet standards for a long period of time due to the magnitude of the exceedence, source of pollutants, or availability of treatment technologies to consistently remove very low levels of contaminants. On January 26, 2010, EPA published proposed water quality standards for nutrients for the state of Florida[22] in the Federal Register. As part of this proposed rulemaking, EPA sought comments on the overall viability of implementing restoration standards as an alternative to compliance tools such as variances. This specific requirement of the proposed rule would apply to water quality standards for nutrients in Florida waters. However, the principles and implementation strategies discussed in the proposed rule and associated Federal Register notice can be considered by other states seeking a similar approach under the current federal regulations. The majority of the discussion here references this document.

As proposed in the Federal Register and other discussions outside the proposed Florida rule, water quality restoration standards would be a waterbody-specific water quality standard that a state could adopt for an impaired water. The state would retain the current designated use as the ultimate designated use. However, under this approach, the state would also adopt interim, less stringent designated uses and criteria that would be the basis for enforceable permit requirements and other control strategies during a prescribed timeframe. The state would need to demonstrate that the interim uses and criteria and applicable timeframe are based on a use attainability analysis evaluation of what is attainable and by when. The water quality standards revision for the waterbody, including the interim uses, criteria, and timeframe, would all be incorporated into a state WQS on a site specific basis, just as would be required for any other designated use change or adoption of a site specific criterion.

[22] Environmental Protection Agency, Federal Register Notice, 40 CFR Part 131, Water Quality Standards for the State of Florida's Lakes and Flowing Waters; Proposed Rules. January 26, 2010.

B. Applicability/Scope

As proposed, any waterbody not meeting water quality standards could be eligible to implement a water quality restoration standard for a pollutant once an adequate assessment had been performed (and subsequently adopted into state standards and approved by EPA). Elements of this assessment as described in the proposed Florida regulation would include:

- an inventory of point and nonpoint sources within the watershed
- an evaluation of current ambient conditions and the necessary reductions to achieve the numeric criteria
- a determination of control strategies and management practices available and resources to implement them
- a demonstration that it is infeasible to attain the long-term designated use in the short term
- a timeframe to establish each restoration phase which would include interim restoration designated uses and associated water quality criteria

C. DEQ Recommendations

DEQ does not recommend that restoration standards be included within this rulemaking. A specific waterbody has not yet been identified where restoration standards could be applied as part of this rulemaking, however, DEQ is open to pursuing restoration standards, where applicable, under a separate rulemaking. Based on the information provided in Florida's proposed Federal Register Notice, DEQ sees the potential for using restoration standards to make water quality standards improvements in a logical, step wise fashion for waterbodies where meeting water quality standards may take many years. However, before restoration standards can be adopted, work must be done to conduct the assessment described above and to develop the interim uses and criteria. Once these waterbodies are identified, DEQ anticipates further discussions on determining enforceable interim designated uses and water quality criteria.

D. Policy Issues and Objectives

The objective of restoration standards is to provide an alternative approach to compliance in situations where impaired water quality conditions have been identified and the expectation for that waterbody is that it will take many years to show improvement. In some cases, it may not be feasible within a relatively long time horizon (e.g.,20 years) to attain water quality standards established to meet goals of the CWA. Developing interim goals within a regulatory framework can provide a clear regulatory pathway to promote active restoration, maintain progressive improvement, and ensure accountability.

One of the most significant issues with implementing this approach is collecting and evaluating the data necessary to establish load reductions needed to meet enforceable interim criteria and designated uses. In watersheds where a TMDL has not been completed, gathering this information to do a Use Attainability Analysis would require a significant amount of monitoring and analysis.

E. Policy Evaluation

ADVANTAGES AND DISADVANTAGES

Advantages:

- This approach provides a regulatory alternative to compliance in situations where waterbodies are impaired for pollutants which may take many years to reduce (e.g. nutrients, legacy pollutants).
- Promotes active restoration from both point and nonpoint sources

Disadvantages:

- The regulation needed to use this approach only applies to a specific waterbody —This tool does not apply on a statewide waterbody scale
- Enforceable interim designated uses and criteria must be determined and approved through rulemaking. Determining what these criteria levels should be at a point sometime in the future could be challenging.
- A significant amount of information needs to be collected in order to do the analysis. In the absence of a TMDL, data collection would be challenging.

ALTERNATIVES CONSIDERED

Not applicable

SUMMARY OF RWG DISCUSSION AND VIEWS

At the May 20, 2010 RWG meeting where the topic of restoration standards was discussed, some workgroup members expressed concern that DEQ has not systematically thought through how some of the implementation tools associated with adopting a higher fish consumption rate will be implemented once the criteria become effective. There was acknowledgement that although DEQ and other workgroup members have not identified a specific waterbody for restoration standard rulemaking at this time, there is a need to consider other compliance options, so that some type of step-wise approach could be developed to smooth this transition. DEQ presented an issue paper on "delayed implementation" at the June 30, 2010 work group meeting which discussed various options in implementing new human health water quality criteria in a step wise manner (See section VII).

F. Proposed Rules

Rulemaking is not applicable at this time.

G. Authority and Precedence

To date, there are no water quality restoration standards that have been approved by EPA, however, DEQ current standards allow it to pursue water quality restoration standards in the future if a situation was identified for which the approach was appropriate, and authorizing rule language is not needed. However, specific rule language would be needed once a waterbody was identified. The use of restoration standards in the future does not depend on the outcome of the proposed Florida rule, although that will help inform EPA and others on public opinion.

H. Other Supporting Information

None

I. Implementation Information

To be determined.

2. Multiple Discharger Variance

A. Description of Tool

A variance is a standards provision that provides a mechanism for a permittee to meet alternate requirements where it cannot meet limits based on 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 section IV.4.

Rather than issuing one variance per permittee, a multiple discharger variance (MDV) is a variance that applies to more than one discharger who cannot meet limits for certain standards. In the case of Oregon, DEQ considered 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). Once a MDV has been established (through rule adoption of the MDV into the water quality standards) and approved by EPA, multiple dischargers may be granted coverage under a MDV by submitting 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.

As a change to the water quality standards regulation, the MDV provision is submitted to EPA for review and approval under CWA § 303(c), with an accompanying feasibility demonstration to justify why a category of dischargers is eligible for receiving variances, including information showing why they will be unable to achieve water quality based effluent limits for a particular pollutant(s). 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 beyond the existing requirements for issuing a draft NPDES permit.

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

During the public comment period, DEQ received comments to develop a multiple discharger variance. DEQ continues to not recommend including a multiple discharger variance as part of this rulemaking. During the stakeholder rulemaking development process, stakeholders did not identify a specific pollutant(s) to include under a multiple discharger variance. In addition, DEQ's analysis given available information at that time did not identify pollutants that would cause widespread exceedance of discharge effluent limits. Commenters did not provide additional data, information, or analyses to support the development of a multiple discharger variance. DEQ acknowledges that as additional data and information are developed through the implementation of the revised human health criteria in NPDES permits, development of a multiple discharger variance may be appropriate. DEQ will evaluate the scope of such a rulemaking to adopt a multiple discharger variance at that time. The final recommended rule does not preclude multiple similarly-situated dischargers from applying for variances at the same time using the same or similar justification; however, each variance must be approved by either the DEQ director or EQC, and by EPA.

B. Applicability/Scope

Multiple discharger variances allow states 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 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 permittees and DEQ. The proposed rule option developed for discussion would only apply to industries with non-contact cooling waters meeting certain specified conditions. Municipal wastewater treatment facilities were not included in this specific proposal 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 will need to determine in conjunction with its adoption of the MDV regulation 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[23] in Oregon, DEQ identified 39 (7 major and 32 minor) permittees due to their primary industrial categories as having the potential to possess non-

[23] April 27, 2010 (approximate date of information)

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 four listings for toxic pollutants. There are nine waterbodies listed for iron, manganese, or arsenic, however, DEQ does not expect most permittees to have compliance issues associated with these three pollutants once the revised 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 that discharge to six waterbodies currently listed for toxics (does not include facilities where the receiving stream is only listed for arsenic, iron, manganese, or ammonia).

Most industrial permittees in Oregon are required to monitor for toxic pollutants "known" to be in their processes, although those permittees 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 8: 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)	

Potential Non-Contact Cooling Facility Receiving Waterbodies (# of facilities)	Toxics 303(d) Listing
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, three permittees are categorized as major facilities. The other 12 permittees 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, states have only developed and 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 DEQ has some waterbody data for toxic pollutants, the data isn't sufficient to indicate which pollutant(s) should be included within a MDV. DEQ needs to identify the pollutant(s) that, based on the information available, are most likely to present issues for permittees 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 other states and EPA indicate that DEQ needs to be prepared to provide a robust justification (per 131.10(g)(1) or (3)) that would be equally applicable to the discharger/pollutant combination included in the MDV. Other specific details will need to be developed as well.

While DEQ concluded that the data and analyses are not ripe to include a multiple discharger variance to address background pollutants as part of this rulemaking package, DEQ does not rule out this approach as part of future rulemakings. DEQ expects to gain knowledge and experience relative to ambient and facility data and develop a better understanding of the types and numbers of permittees that could request variances, potential pollutants of concern, and the review and approval process. DEQ will evaluate the need for a MDV in the future based on its experience issuing variances and additional data and information collected in the interim.

D. Policy Issues and Objectives

Some permittees in Oregon will likely find it difficult to meet limits based on more stringent human health criteria and may request water quality standards variances. Further, stakeholder advisory committee members identified non-contact cooling facilities as a situation where a number of permittees may request a variance based on the same applicability factors, as described in section B above. Workgroup members did not identify any other scenarios during the advisory workgroup discussions. 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 and permittees 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, WI, and IN). States with approved MDVs address a single pollutant (i.e., mercury) and a single facility type (i.e., municipal wastewater treatment plants). 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

permittees. More discussions with EPA are necessary to explore how the inclusion of more than one pollutant could be accomplished within a MDV.

Similar to an individual variance, a MDV variance may only be established 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 a MDV addressing background pollutants concentrated through non-contact cooling water would rely on one 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 developing and issuing a variance for each permittee in addition to a 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 workgroup discussions was to develop a separate provision within the variance rules describing the kind 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 permittees meeting the general criteria as well as to provide more specificity and certainty regarding the kind of information DEQ would expect to receive from permittees 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 permittee 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.

A member of the stakeholder group suggested language in the variance rule to capture this idea; however, DEQ removed this section in the final recommended rule because several commenters expressed confusion with the language during the public comment period.

Additional Detail in IMD

DEQ briefly discussed with the work group members[24] not including any provisions in the variance rule to address background concentration issues. Instead, DEQ suggested that 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 a conference call on January 15, 2010 and a more substantive work group discussion on April 27, 2010.

Discussions during the stakeholder advisory committee process indicated some members were not comfortable with DEQ adopting and implementing a MDV with the information presented at that point in time. Others 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 the absence of a MDV, expliciting addressing background pollutant issues within the variance rule would provide greater confidence that either DEQ or EPA would approve the variance based on certain background pollutant conditions. As previously noted, DEQ proposed language in the variance rule to capture this idea, but this section was later removed in the final recommended rule based on confusion expressed by several commenters during the public comment period.

[24] January 15, 2010 conference call

Municipal wastewater representatives stated that a MDV has potential benefits in facilitating the variance process in those situations where the variance is based upon the unavailability or unaffordability of technology to remove toxics to the level required by WQBELs derived from the revised water quality standards. A MDV which makes one demonstration of the state of technology, one cost assessment of impact, and which outlines the variable factors that an applicant must document for coverage under the MDV would greatly reduce the overall cost to permittees to apply for a variance and to DEQ in reviewing and approving the variances.

After further analysis by DEQ staff in determining the potential scope of facilities with a potential to concentrate background pollutants through non-contact cooling processes, DEQ determined that a multiple discharger variance was not yet ripe for current rulemaking. Some stakeholders concurred with this assessment based on comments from workgroup members, although there was not enough time allotted for a formal gauge of the work group.

F. Proposed Rule Language

MULTIPLE DISCHARGER VARIANCE

As part of DEQ and the RWG's evaluation of this permitting tool, DEQ drafted two rule language options for discussion. The first describes how DEQ would develop any multiple discharger variance rules in the future and the second describes an approach that could be taken for facilities that use non-contact cooling water. **This rule language was not proposed as part of this rulemaking.**

340-041-0059

Water Quality Variances

(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.

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, see Appendix C.

There are few states with an EPA approved multiple discharger variance. While many, if not all of the Great Lakes 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[25].

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

Michigan

Michigan developed and EPA approved a MDV for a wildlife mercury criterion. That MDV has been subsequently renewed. 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. 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 Michigan's MDV, see Appendix B.

Indiana and Ohio

Unlike Michigan's implementation strategy which is not part of the state's WQS regulations, the states of Indiana and Ohio 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 by the state and EPA.

H. Other Supporting Information

None

I. Implementation Information

Although DEQ will conduct more research on implementing a MDV if a provision is adopted in the future, this section describes how a MDV could be implemented based on the situations discussed during the stakeholder meetings. .

DEQ expects that in developing its own MDV, 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 permittee meets applicability criteria; however, the expectation is that the process will be less burdensome, since DEQ will have provided a sound demonstration rationale at the time it adopts a separate MDV provision. Since the option considered within this rulemaking process would have effectively limited the scope of facilities to those who only concentrate pollutants through a non-contact cooling process and do not add mass, DEQ did not include a pollutant minimization plan as part of that option.

Under DEQ's draft option:

- 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.

3. Delayed Implementation of Rulemaking Components

A. Description of Tool

In order to address compliance challenges in implementing very low toxics criteria for human health, some workgroup members expressed a desire for a step-wise implementation approach to compliance, rather than requiring implementation immediately following EQC adoption and EPA approval. DEQ evaluated several different delayed implementation approaches to achieve this objective. Alternatives considered included postponing the effective date of compliance and allowing a lower fish consumption rate (FCR) or a higher risk factor to be used in the criteria calculations on a short term basis.

DEQ received comments from the public that requested delaying the effective date of the rulemaking. Several commenters said that the extra time should be utilized to develop a pilot variance, develop multi-discharger variance language, and to identify pollutants and waters where the human health criteria will be naturally exceeded. DEQ continues to not recommend delaying the effective date of these rules based on reasons noted under DEQ Recommendations.

B. Applicability/Scope

Options that would delay implementation of the revised criteria could be fairly narrow to rather broad. The section below lists alternatives considered and more fully describes the scope associated with each option.

C. DEQ Recommendations

DEQ acknowledges the concerns expressed by workgroup members regarding permittees ability meet limits based on very low toxic human health criteria. Additionally, DEQ staff may need time to develop protocols and other materials associated with reviewing and implementing some of the permitting tools discussed by the rulemaking workgroup and EPA staff may need time to prepare for potential variance approval requests. DEQ's analysis described in the Policy Evaluation section indicates that many of the approaches to delaying implementation of the revised human health criteria are fairly limited due to legal or risk-based concerns.

Of the alternatives considered, delaying the effective date of the revised human health criteria is the most straight forward option. However, given EPA's June 2010 disapproval of Oregon's 2004 human health criteria based on a fish consumption rate of 17.5 g/day, delaying an effective date until sometime after EPA approval is not likely to be approved by EPA. In order to approve this approach, EPA would need to conclude that the existing human health toxics criteria protect designated uses until such time DEQ made the new criteria effective. EPA stated in its disapproval letter that human health criteria based on a fish consumption rate of 17.5 g/day is not sufficient, so similarly, DEQ reasonably expects that EPA would not approve an implementation scheme that relies on DEQ's currently effective criteria which is based on 6.5 g/day.

Furthermore, based on DEQ's past experience with segregating water quality criteria into two tables (one effective in advance of EPA's action and one *not* effective until EPA action), DEQ has found this approach confusing to many stakeholders, as well as DEQ staff. Therefore, DEQ recommends that the effective date for the human health toxics criteria, including the NPDES implementation tools that are considered water quality standards, will be applicable upon EPA approval. DEQ included language that reflects applicability date in OAR 340-041-0033(1) (site-specific background pollutant criteria) and OAR 340-041-0059 (variance rule) in its final proposed rules.

D. Policy Issues and Objectives

Described under Description of Tool section.

E. Policy Evaluation

ADVANTAGES AND DISADVANTAGES

There are several advantages and disadvantages to consider in regards to DEQ's recommended option.

Advantages:

- ✓ Limits confusion by specifying in the rule language a single date (upon EPA approval) on which the revised human health criteria become effective
- ✓ This approach is likely the most legally defensible option of the alternatives listed in this section

Disadvantages:

- ✓ Does not allow for an extended period of time to collect data, conduct analysis, explore compliance options, and develop variance or other compliance permitting tools documentation
- ✓ The current human health criteria for toxics, which are less protective of human health, will remain effective for CWA purposes until such time that the more stringent criteria become effective. This discrepancy is more pronounced given EPA's June 2010 disapproval of Oregon's 2004 human health toxics criteria based on 17.5 g/day. The interim effective human health criteria are based on 6.5 g/day.

ALTERNATIVES CONSIDERED

1. Delayed effective date

The objective of this option is to delay implementation of the numeric human health criteria, so that both the regulated entities and DEQ have additional time to prepare for implementation. Two variations to this approach are described below. The first approach outlines DEQ's recommended approach. In either case, the effective date occurs some time after EQC adoption.

Date for implementation aligns with date of EPA approval (DEQ's Recommended Approach)

Under this option, the date that the criteria become effective for both state and federal purposes is the date of EPA approval. For example, if the EQC adopts the revised human health criteria in June 2011, the rules would specify that the revised criteria become effective for state and federal purposes (e.g. NPDES permitting, development of 303(d) list) on the date of EPA approval. As DEQ cannot predict the exact timing of EPA action, the exact date on which the revised human health criteria become effective is not known in advance of that date. However, federal regulations require that EPA must approve the

revised water quality standards within 60 days of DEQ's submission, or disapprove them within 90 days (Per 40 CFR 131.21(a)(1) and (2)).

In 2004, DEQ's rule provided that toxics criteria that were more stringent than older criteria (i.e. Table 33A under the 2004 rulemaking) were effective under state regulations for implementation in NPDES permits before EPA approved the revised criteria. Although this approach provides greater environmental protection in the short term (until EPA approval), it also led to confusion when interpreting the criteria tables. Furthermore, this approach can lead to confusion if EPA later disapproves the criteria as is currently the case following EPA's June 2010 disapproval of the human health criteria.

The most significant disadvantage of this option is that it would not significantly delay an effective date past the EQC adoption date, given that the EPA must approve the criteria within 60 days or disapprove within 90 days of DEQ's submission of criteria (Per 131.21(a)(1) and (2)).

State effective date is established at a date after EPA approval (e.g. one year from EQC adoption).

Under this option, the rule would specify that the revised human health criteria become effective on some date in the future (e.g. one year after EQC adoption). This delay in the effective date allows permittees to conduct additional studies, explore other compliance strategies, or seek additional funding. In the interim, Clean Water Act programs (permits, etc.) would be implemented using the currently effective criteria. Additionally, this delay would allow more time for DEQ staff to "ramp up" and prepare to implement various tools used for compliance with a higher fish consumption rate.

A challenge with this approach is that Oregon would need to use CWA approved criteria in the interim period (between EPA approval and the effective date of the new criteria). Thus, DEQ expects that EPA would have to determine that the currently effective criteria (i.e. human health criteria based on 6.5 g/day) is protective of human health during this interim period. Given that EPA disapproved DEQ's 2004 criteria based on 17.5 g/day on June 1, 2010, DEQ expects that EPA would not conclude that 6.5 g/day protects the designated use.

2. Establish Less Stringent Criteria on a Short Term Basis

In consideration of various implementation challenges, DEQ could implement a step-wise approach to implementation by adopting human health criteria based on a lower interim fish consumption rate or alternative risk levels in the short term. This option establishes alternate criteria for specific periods of time (e.g. one to five years) and provides that the human health criteria based on a FCR of 175 g/day

and a 10^{-6} risk level[26] would become effective at a set date in the future. The following are two variations to this approach.

Alternate Fish Consumption Rate

Under this option DEQ would adopt human health criteria based on a lower interim fish consumption rate for a specified period of time (e.g. one to five years) and establish the effective date for human health criteria based on 175 g/day at some future date. Two obvious challenges of this approach would be selecting the appropriate FCR for the interim step and the length of time those interim criteria would be effective. As a starting point, values in the CRITFC[27] study could be used as interim rates, but ultimately determining an appropriate FCR would depend on the level of protection the FCR provided to fish consumers. EPA notes in its Technical Support Document[28] to its June 1, 2011 action that its disapproval is based on a conclusion that DEQ's 2004 toxic human health criteria were based on a FCR that was too low (17.5 g/day). Criteria based on anything less than 17.5 g/day will not be consistent with EPA's recent action. Once a FCR was determined, DEQ would need rulemaking to establish interim toxics human health criteria based on the alternate FCR.

Another primary question for discussion and analysis is whether an alternate FCR would ultimately assist a discharger in meeting toxics criteria. For example, data from the SAIC report[29] indicate that increasing the fish consumption rate from 17.5 g/day to 175 g/day has a small impact on what additional parameters would have reasonable potential to exceed water quality standards. However, the analysis was derived from a sample of 16 facilities, so it is not a comprehensive analysis of other potential toxics which may have compliance issues. The parameters for which the higher fish consumption rate would make a difference are listed in the table below.

[26] A risk management decision that DEQ has made when adopting water quality standards for carcinogens. A risk level set at 10^{-6} means that there is no more than 1 in a million chance of cancer.

[27] Columbia River Inter-Tribal Fish Commission. October 1994. A Fish Consumption Survey of the Umatilla, Nez Perce, Yakama, and Warm Springs Tribes of the Columbia Basin, Technical Report 94.3.

[28] Environmental Protection Agency. June 1, 2010. Technical Support Document for EPA' Action on Oregon's New and Revised Human Health Criteria.

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

Table 9: Number of facilities impacted by increasing the fish consumption rate

Parameter	No. of facilities w. detects *(n=16)*	*RPA = yes with lower rate of fish consumption (17.5 g/day)	RPA = yes with higher rate of fish consumption (175 g/day)
Arsenic	13	10	11
Bis(2-Ethylhexyl)Phthalate	6	1	4
Mercury	12	4	11
Tetrachloroethylene	1	0	1

*Reasonable Potential Analysis

According to the SAIC study, increasing the fish consumption rate changes the reasonable potential analysis results for only **four** parameters. The most significant is for mercury, with the number of permittees that show reasonable potential to cause or contribute to an exceedance of the revised mercury criteria increasing from four to 11. However, as part of the 2004 rule revision, Oregon withdrew its total mercury criterion based on the old EPA human health criterion and replaced it with a new fish tissue-based "organism only" human health criterion for methylmercury. Until this rulemaking is complete, DEQ will not have a methylmercury criterion. Consequently, until data on methylmercury are collected and analyzed, it is unclear what the state of compliance will be. The SAIC report also highlight potential permitting issues associated with arsenic. As noted elsewhere in this issue paper, the commission adopted human health arsenic criteria in April 2011 that are less stringent than the arsenic criteria analyzed as part of the SAIC report. Therefore, some of the arsenic compliance issues identified with arsenic may no longer exist once the revised criteria are approved and implemented by DEQ.

In exploring alternate FCRs, there could be several variations to this approach:

i) In the short term, criteria, and subsequently, implementation, are based on a lower fish consumption rate (i.e. >17.5 g/day, but < 175 g/day) *on a statewide basis*. The idea is that the FCR would increase to 175 g/day at a later specified date.

ii) In the short term, criteria, and subsequently, implementation, are based on a lower fish consumption rate (i.e. >17.5 g/day, but < 175 g/day) *on selected reaches, or in a specific geographic area*. This approach targets those areas where people actually eat fish. The FCR would then increase to 175 g/day at a later specified date.

iii) In the short term, *implementation of requirements in NPDES permits* is based on values associated with a lower fish consumption rate (i.e. >17.5 g/day, but < 175 g/day), while the

newly proposed criteria apply for all other CWA purposes (e.g. 303(d) and 305(b)). The FCR would then increase to 175 g/day for NPDES permitting at a later specified date.

Alternate risk level

A variant on modifying the criteria based on fish consumption rates would be for DEQ to adopt criteria based on an alternative risk level (e.g., 10^{-5} risk level for carcinogens) in the short term with criteria based on 175 g/day at a 10^{-6} risk level becoming effective at a set date in the future. However, for non-carcinogens which are based on specific reference doses, DEQ is unaware of any defensible analogous approach. The reference dose serves as a threshold level to which a person should not suffer from appreciable risks of deleterious effects over a lifetime of exposure. Similar to the approach described using an alternate fish consumption rate, DEQ needs to conduct rulemaking to establish interim toxics criteria that would require EPA approval prior to becoming effective.

SUMMARY OF RWG DISCUSSION AND VIEWS

Some workgroup members asked if DEQ could explore changing the acceptable risk level for a period of time (i.e. utilizing a higher risk level for carcinogens at 10^{-5} rather than 10^{-6}) to implement the more stringent human health criteria in a step-wise fashion. Proponents of this approach conclude that less stringent criteria on a short term basis could give permittees additional time to research compliance strategies, make capital improvements, etc. to meet any more stringent requirements associated with the revised criteria. DEQ indicated that every time a request to increase the acceptable risk level from 10^{-6} to 10^{-5} has been raised, the EQC has rejected it. As a matter of policy, DEQ has used 10^{-6} in many of its programs. In addition, the SAIC report indicated that even at a FCR of 17.5 g/day, many permittees would still have compliance issues, so changing the risk level may not solve concerns, even in the short term. The CTUIR representative voiced opposition to using higher risk levels and/or using different FCRs that do not adequately protect people.

Despite EPA and DEQ concerns regarding adopting and approving interim human health criteria to protect human health uses until such time DEQ fully implements the revised human health criteria, many of the workgroup members representing the regulated community felt strongly about the need for other types of thoughtful, step-wise strategies to assist permittees and DEQ staff in the implementation of this rule.

F. Rule Language

Rule Proposed for Public Comment

340-041-0033

Toxic Substances

(1) Amendments to this rule OAR 340-041-0033 and associated revisions to Tables 20, 33A, 33B or 40 become effective upon approval by the Environmental Protection Agency.

Final Rules Recommended by DEQ

In the final recommended rule, DEQ proposed that the rules identified as water quality standards will become applicable upon EPA approval.

340-041-0033

Toxic Substances

(1) Amendments to sections (4) and (6) of this rule (OAR 340-041-0033) and associated revisions to Tables 20, 33A, 33B or 40 do not become applicable for purposes of ORS chapter 468B or the federal Clean Water Act unless and until EPA approves the provisions it identifies as water quality standards pursuant to 40 CFR 131.21 (4/27/2000).

OAR 340-041-0059

Variances

This rule (OAR 340-041-0059) does not become applicable for purposes of ORS chapter 468B or the federal Clean Water Act unless and until EPA approves the provisions it identifies as water quality standards pursuant to 40 CFR 131.21 (4/27/2000).

G. Authority and Precedence

Once EPA approves Oregon's water quality standards, the water quality standards become applicable for the following Clean Water Act purposes: (1) identifying impaired waters, (2) developing NPDES permit limits and requirements, (3) evaluating proposed discharges of dredged or fill material under section 404, and (4) issuing certifications under section 401 of the Act (Per 131.21(c)). For revised criteria that are more stringent than the old criteria and have been adopted by the EQC, federal law allows DEQ to choose to implement those more stringent criteria for state regulatory purposes, until such time EPA either approves or disapproves them. For example, the toxic standards criteria that were adopted by the EQC in 2004 became effective for state NPDES permitting purposes for those criteria that were more stringent than criteria in Table 20. Based on recent experience with implementing the

2004 criteria that attempted to make this distinction and the subsequent complications resulting from EPA's June 1, 2010 disapproval, DEQ does not recommend this approach, although it is allowed under federal law.

With regard to the option to adopt interim criteria, or rely on currently effective water quality standards prior to criteria based on 175 g/day and a 10^{-6} risk level criteria becoming effective, EPA would need to determine that the human health criteria effective in the interim fully met the statutory and regulatory requirements to protect beneficial uses.

DEQ is not aware of any other state that has implemented criteria based on lower fish consumption rates or alternate risk levels as an interim step, until such time more stringent human health criteria became effective.

H. Other Supporting Information

None

I. Implementation Information

To be determined.

APPENDIX A: IMPAIRED WATERBODIES

Waterbodies* Listed for Toxics on the 2004/2006 Integrated Report[30]

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

[30] 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
GOOSE LAKE	Thomas Creek	Iron
JORDAN	Jack Creek / Antelope Reservoir	Mercury
JORDAN	Jordan Creek	Arsenic, Mercury
LOST	Klamath Strait	Ammonia
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

Watershed (USGS 4th Field Name)	Water Body (Stream/Lake)	303(d) Toxics Listing
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
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

Watershed (USGS 4th Field Name)	Water Body (Stream/Lake)	303(d) Toxics Listing
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
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

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**.

APPENDIX C: EPA POLICY AND GUIDANCE ON VARIANCES

History of EPA Policy and Guidance on Variances

1976 EPA first formally indicated allowability of state WQS variance provisions in Decision of the General Counsel No. 44, dated June 22, 1976 (PDF) (8 pp., 338 K), which specifically considered an Illinois variance provision.

1977 EPA expanded upon the acceptability of state WQS variance procedures in Decision of the General Counsel No. 58 (OGC No. 58) (PDF) (11 pp., 533 K), dated March 29, 1977 (published, in part, at 44 F.R. 39508 (July 6, 1979)).

1979 The Director of EPA's Criteria and Standards Division transmitted EPA's definition of a WQS variance (PDF) (1 pp., 78 K) to the Regional WQS Coordinators on July 3, 1979.

1983 The Preamble to the 1983 WQS regulation revision suggested that substantial and widespread social and economic impact, the sixth element for use removal under 40 CFR § 131.10(g), is an important and appropriate test that, if met, could be used as the basis for granting a variance (see 48 FR 51403).

1985 On March 15, 1985, the Director of the Office of Water Regulations and Standards, responding to questions raised on WQS variances, issued a reinterpretation of the factors that could be considered when granting variances (PDF). It explained that it would be appropriate to grant short-term variances to individual dischargers based on any of the six factors for removing a designated use as listed at 40 CFR § 131.10(g).

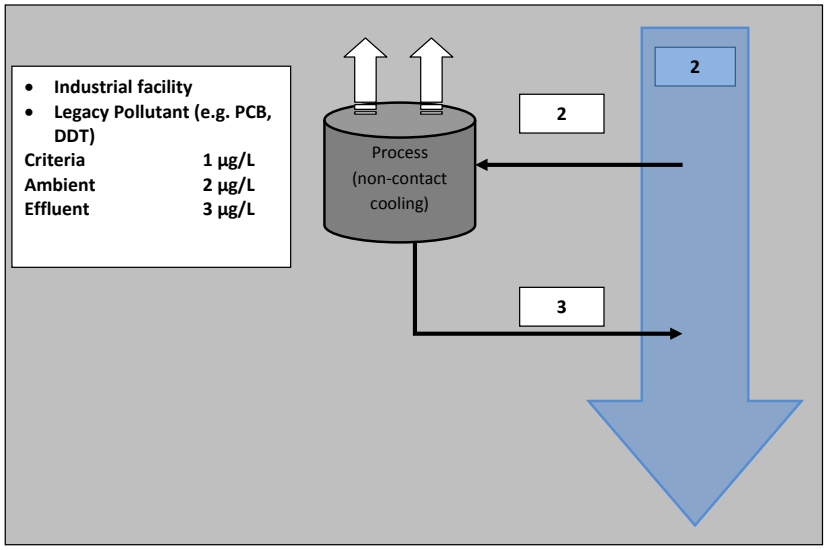
1989 In Guidance for State Implementation of Water Quality Standards for CWA Section 303(c) (2) (B) (December 1988) (PDF), EPA described State variance procedures as a potential mechanism for addressing circumstances where feasibility issues in attaining WQS may arise as a result of a State's adoption of statewide criteria for a large number of toxic pollutants for human health or aquatic life protection.

APPENDIX D: HYPOTHETICAL VARIANCE SCENARIOS

Hypothetical Variance Scenarios

Scenario 1

Description: Scenario 1 describes an industrial facility where water from the receiving stream is used for non-contact cooling. The ambient background concentration of 2 ug/L of Pollutant **X**-- a legacy pollutant (e.g. PCB/DDT)--is higher than the human health criterion of 1 ug/L. The facility does not add any mass of Pollutant **X** as part of their process. Evaporative processes from cycling of the non-contact cooling water reduces water quantity, and therefore increases the concentration of Pollutant **X** in the effluent to 3 ug/L when compared with the ambient background concentration upstream at 2 ug/L. Upon complete mixing with the stream, there is no more than a *de minimus* increase (need to define, e.g. 1%?) in pollutant concentration in-stream.



Variance Justification for HHC: 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.

In this scenario the facility is using multiple-pass cooling, which is environmentally preferable to single-pass cooling when considering water conservation, temperature, and other adverse effects that can occur with the intake of cooling water. The facility could reduce the number of passes to decrease concentrations in its effluent, but it may come at other environmental costs. This analysis is focused on these issues as described below.

Supporting Information and Rationale:

- Sufficient monitoring data from intake source, upstream and downstream receiving waterbody, and effluent samples shall be collected to adequately assess ambient background levels of pollutant, as well as the downstream ambient concentration after mixing.
- Documentation demonstrating that treatment more advanced than that required by sections 301(b)(l)(A) and (B) and 306 of the Clean Water Act (i.e. Technology Based Requirements) has been carefully considered and that alternative effluent control strategies have been evaluated. Environmental benefits, such as water conservation practices used for non-contact cooling, could be part of this analysis.
- DEQ determination that effluent concentration would not be expected to increase the risk to human health above what would already be present in the waterbody absent the facility's discharge.

Interim Conditions and Requirements of a Variance:

- Variance requirements which allow no increase in effluent concentration above that of current operation. In this scenario, it has been determined that the current effluent concentration will not increase the ambient pollutant concentration more than a *de minimis* amount.
- In this case, a pollution minimization plan would most likely not be warranted. However, if feasible pollutant reduction actions were identified, these measures would be incorporated into the variance.

Precedence for EPA Approval: NY is currently looking at human caused conditions as a justification supporting a Hg multiple discharger variance.

Scenario 2

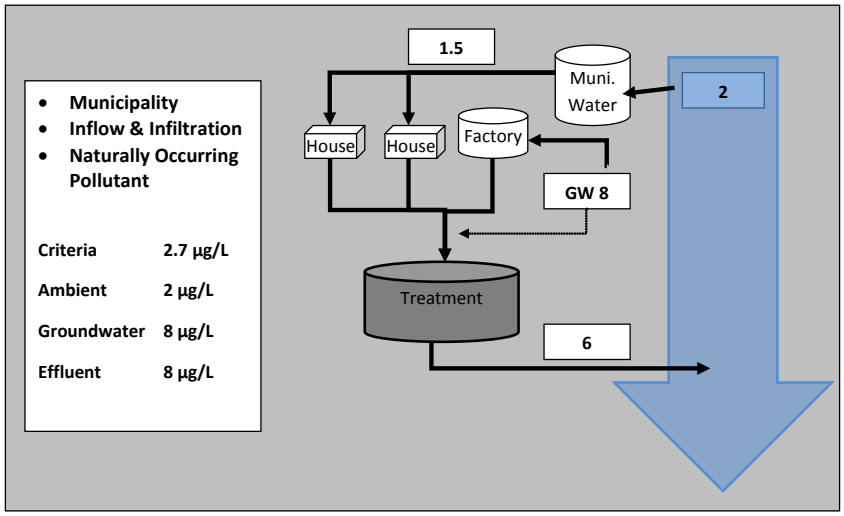
Description: The City of Petersville located in the State of Oregon operates a sewage treatment plant (STP) which discharges to the Blue River.

- The Blue River upstream of the STP's discharge has ambient concentrations of arsenic (2 ug/L) below the applicable human health water quality criterion (2.7 ug/L).
- The City of Petersville STP has a high level of arsenic in its discharge effluent (6 ug/L) that causes it to exceed the applicable human health water quality criterion for the Blue River after complete mixing.
- Influent data for this facility indicates that there is a high concentration of arsenic flowing into the treatment plant (7 ug/L).

The City of Petersville has a formal pretreatment program with the Oregon Department of Environmental Quality (ODEQ), and is has developed local limits (1.5 ug/L) for industrial facilities that discharge to the STP to minimize sources of arsenic where that pollutant may be present. Therefore, these industries are not the source of concern.

A substantial portion of the City of Petersville is built upon soils that have naturally elevated concentrations of arsenic. This includes the collection system for the STP, which is old and believed to be cracked in places. The ground water in the area, which contains natural levels of arsenic, enters the cracked collection system piping and is carried as influent to the treatment plant, along with the domestic untreated sewage entering the system (also as influent). This suggests that the inflow and infiltration problem is likely a significant contribution of the arsenic loading into the treatment plant.

Without additional controls for removal of arsenic, the effluent from the City of Petersville STP would not meet the water quality-based NPDES permit limits for arsenic. In order to meet water quality-based NPDES permit limits, the City of Petersville STP would need to reduce the arsenic concentration by approximately 55%. In order to accomplish these reductions, the facility will need to make improvements to the collection system to reduce seepage into the pipes along with the installation of expensive arsenic removal treatment.



Variance Justification for HHC: Economic Justification - 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.

In this scenario, the facility has opportunities to improve its water quality, but implementation of those measures will occur over time and the ultimate water quality that the facility is capable of achieving is uncertain. In the short term (within 5-10 years), while the facility may begin implementing improvements, the facility cannot economically achieve limits based on the arsenic criterion.

Supporting Information and Rationale:

- Analyses regarding the source and quantity of arsenic in the facility's influent and effluent, ambient concentrations and river and effluent flow volumes, and mixing analysis.
- Documentation on the source of arsenic that supports the conclusion that it is from I&I and there are no other significant sources that could be controlled or reduced.
- Analyses related to the improvements that are planned or could be implemented to address I&I. This would include cost, timing, and expected water quality improvement.
- Information on whether there is a community drinking water supply intake downstream from the discharge and, if so, whether the STP discharge is impacting the level of arsenic in the water supply.
- Estimated costs for the treatment(s) and alternative effluent control strategies have been considered.
- Documentation that treatment more advanced than the applicable technology based requirements (sections 301(b)(l)(b) and 306 of the Clean Water Act) has been carefully considered.

- Economic analysis based upon the least cost alternative evaluated using EPA's 1995 *Interim Economic Guidance.*

Interim Conditions and Requirements of a Variance :

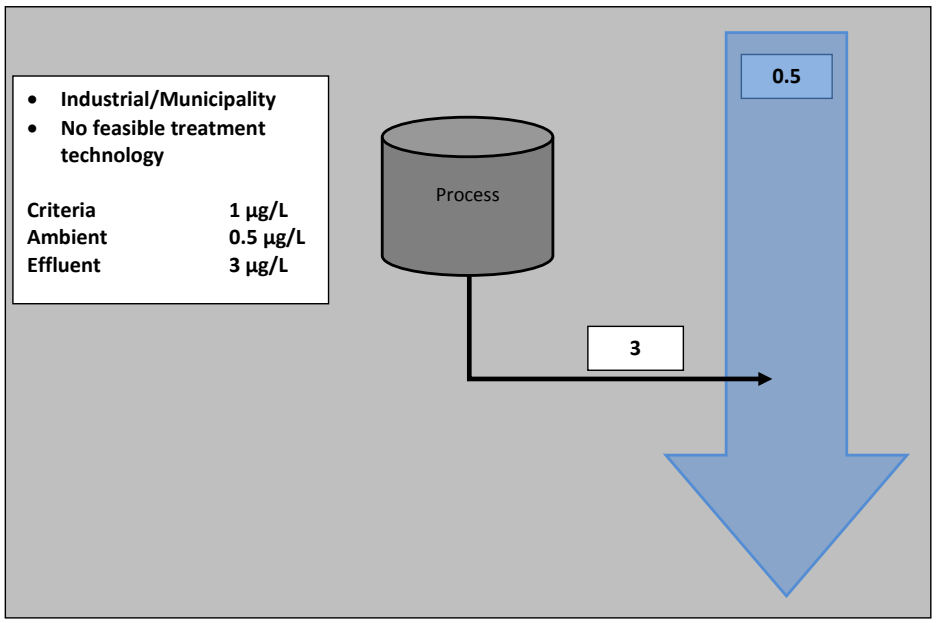
- Requirements based on the pollutant minimization plan. In this scenario, the source could demonstrate that inflow and infiltration improvement measures would result in a reduction of arsenic entering the treatment system over time.
- Based on the analyses related to improvements to the collection system to control I & I, either require maintenance of current discharge levels and incorporate milestones related to the capital improvements to the collection system, or, if the expected improvement in water quality is quantifiable, include requirements for discharge levels that reflect the expected improvement during the term of the variance. For example, the variance could include a requirement that **X** feet of leaking pipes would be replaced, or that X% of capital improvements would be made over a certain time period.
- Incorporate any other interim milestones based on implementation measures identified in the plan, as appropriate (e.g., if alternatives to existing treatment technologies has been identified).

Precedence for EPA Approval: ID case example where the discharge from 3 municipal facilities exceeded the criteria associated with an aquatic life designated use for Cd, Pb, and Zn for the SF Coeur d'Alene River.

Scenario 3

Description: Scenario 3 describes a situation where the facility's effluent is contributing to a Pollutant **X** concentration (3 ug/L) in the receiving stream. Ambient concentration of Pollutant X is 0.5 ug/L and the human health water quality criterion applicable to Pollutant X in the receiving stream is 1 ug/L.

Cost-effective feasible treatment technologies that can remove Pollutant **X** to the level of their calculated water quality-based effluent limitation do not exist. While treatment technologies theoretically exist, implementation of such controls would cause substantial and widespread social and economic impact and may have other associated undesirable environmental effects (e.g., require huge amounts of energy, produce brine that would need to be disposed of).



Variance Justification for HHC: Economic Justification - 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.

In this scenario, cost-effective treatment technologies are not available that would reduce the human health pollutant to levels that would be required to meet water quality standards. In this instance, an evaluation of potential treatment technologies, what water quality can be achieved (even if it is short of

the water quality-based effluent limit), and an evaluation of other reduction measures both within the facility and elsewhere through trading or offsets would guide the development of the variance and associated requirements.

Supporting Information and Rationale:

- Sufficient ambient monitoring data from receiving stream, as well as effluent concentrations after treatment and mixing analysis must be collected and submitted to DEQ.
- Develop a pollution minimization plan and evaluate options such as treatment optimization/enhancement, source reduction efforts (e.g. take back programs for Hg), and opportunities for trading or offsets.
- Evaluation of treatment options and effluent control strategies (including treatment more advanced than the applicable technology based requirements). The analysis must also include estimated costs for the treatment(s) and alternatives.
- Economic analysis based upon the least cost alternative evaluated using EPA's 1995 *Interim Economic Guidance.*
- Information evaluating potential human health or environmental impacts.

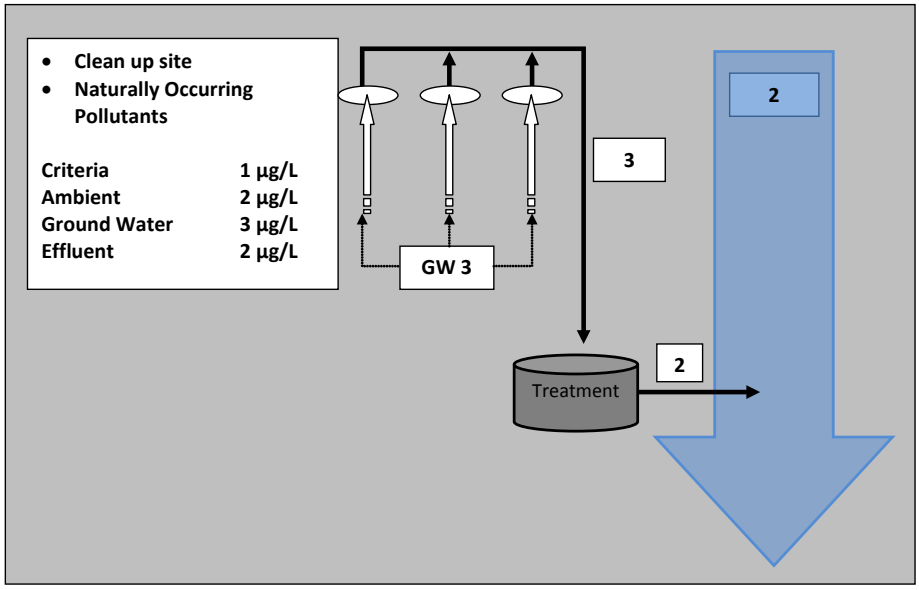
Interim Conditions and Requirements of a Variance:

- If analyses demonstrate that treatment or alternative effluent control strategies are likely to improve water quality, those improvements will be included as part of the variance requirements as either milestones or water quality requirements or both.
- Where improvements in effluent quality are unlikely, the variance would require no increase in effluent concentration based on current operation.
- Requirements based on the applicant's pollution minimization plan, such as treatment optimization/enhancement, source reduction efforts (e.g. take back programs for Hg), and opportunities for trading or offsets.
- Interim milestones would be established based on implementation measures identified in the plan. For example, the facility may be able to optimize its current treatment technology thereby reducing Pollutant **X** by Y% in 3 years. In addition, they may agree to provide funding for source reduction programs.

Precedence for EPA Approval: Examples have not been identified.

Scenario 4

Description: Scenario 2 describes a situation where contaminated ground water is being extracted and treated prior to discharge to a waterbody. The ground water also contains naturally occurring Pollutant **X** at 3 ug/L. The human health criterion for Pollutant **X** is 1 ug/L, while the natural background concentration of the waterbody is 2 ug/L. The treatment facility effluent with a concentration of 2 ug/L does not increase the concentration of Pollutant **X** naturally present in the receiving waterbody.



Variance Justification for HHC: The primary justification would be based on the naturally occurring presence of a pollutant, although there could be a secondary justification based on economic impacts.

Supporting Information and Rationale:

- Sufficient ambient monitoring data from GW and SW, as well as effluent concentrations after treatment and mixing analysis must be collected and submitted to DEQ.
- Analysis supporting the conclusion that the ground water pollutant concentrations are naturally occurring must be submitted to DEQ.

- Documentation demonstrating that treatment more advanced than that required by sections 301(b)(l)(A) and (B) and 306 of the Clean Water Act has been carefully considered and that alternative effluent control strategies have been evaluated.
- Facility should coordinate with DEQ clean-up program, which has conducted risk and treatment feasibility studies in developing the clean-up requirements.

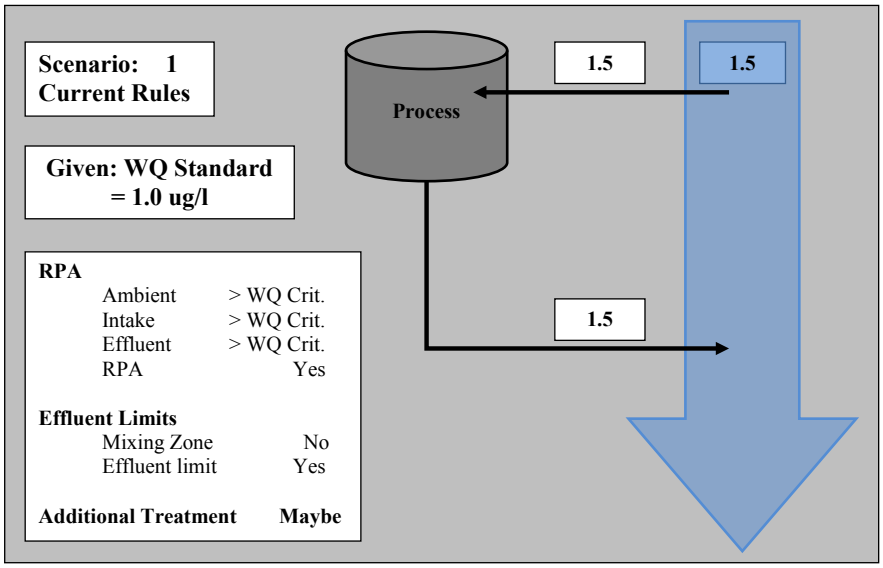
Interim Conditions and Requirements of a Variance:

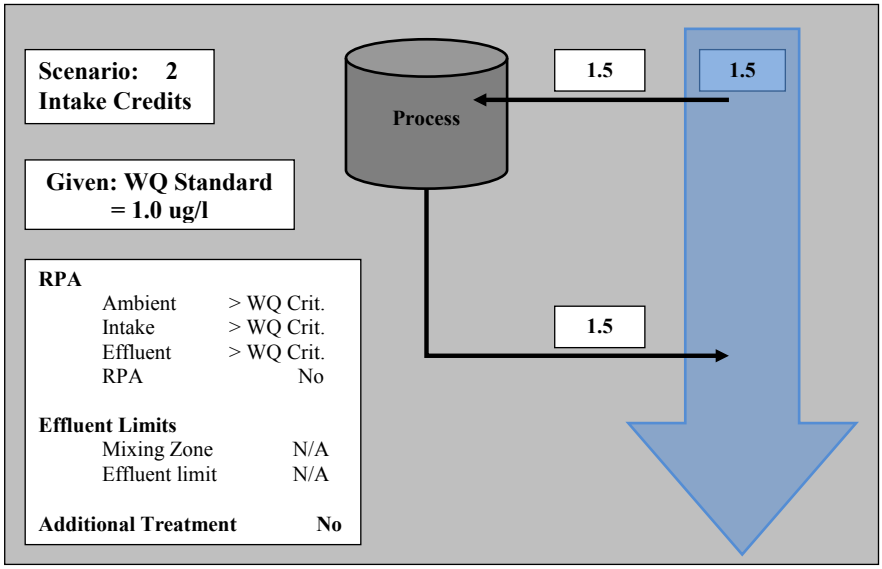
- Variance requirements which allow no increase in effluent concentration above that of best achievable operation of the current treatment system.
- In this case, a pollution minimization plan would most likely not be warranted; however, the facility should reference requirements specified under their clean-up plan.

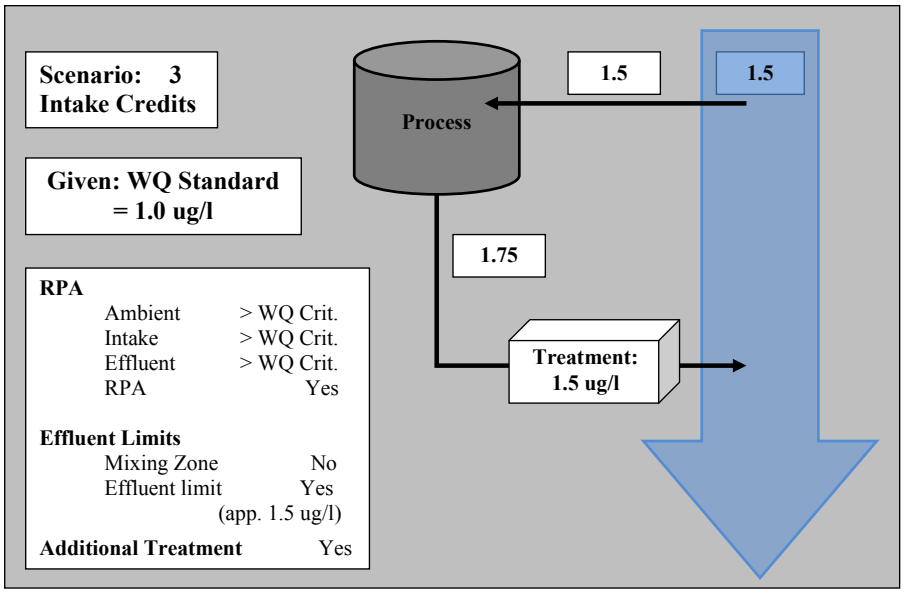
Precedence for EPA Approval: Arizona case example where a treatment facility was extracting ground water contaminated with PCE and BTEX and treating with GAC prior to discharge. Discharge exceeded the Boron criterion associated with an agricultural DU. Variance justification was based on naturally occurring ground water concentrations.

APPENDIX E: INTAKE CREDIT SCENARIOS

The following figures have been prepared to demonstrate a very simplistic intake credit scenario. **Scenario 1** is a simplified example where a Facility is using surface water that ambient concentration is above water quality criteria. Based upon current rule, the evaluation only reflects the concentration at the point of discharge to address the application of current rules. **Scenario 2** and **3** demonstrate the use of intake credit procedure using the same variables as in **Scenario 1** for the RPA and WQBEL calculation processes, respectively.






Scenario: 3
Intake Credits
Given: WQ Standard
= 1.0 ug/l
RPA
Ambient > WQ Crit.
Intake > WQ Crit.
Effluent > WQ Crit.
RPA Yes
Effluent Limits
Mixing Zone No
Effluent limit Yes
(app. 1.5 ug/l)
Additional Treatment Yes
Process
1.5
1.5
1.75
Treatment:
1.5 ug/l

APPENDIX F: QUESTIONS AND ANSWERS

GENERAL IMPLEMENTATION

1. When do the rules as part of this rulemaking become effective?

DEQ is proposing that the proposed human health criteria and associated implementation rules that are considered water quality standards become effective for all DEQ and CWA programs upon EPA approval. This is being proposed to avoid the type of confusion that occurred in implementing the changes adopted in 2004. DEQ's 2004 water quality standards stated that the revised toxics criteria became effective for NPDES purposes nine months following the date of commission adoption. DEQ also specified that if the values were subsequently disapproved after that date, any corresponding value in Table 20 (which contained the previously effective values) would become effective. EPA disapproved the majority of DEQ's 2004 human health criteria on June 1, 2010, nearly six years after the effective date. As a result, many of the criteria adopted in 2004 that had become effective subsequently reverted back to human health criteria that had been effective prior to 2004. This has caused numerous difficulties in DEQ's implementing water quality programs and confusion regarding the currently applicable criteria. Therefore, DEQ is proposing that the human health criteria and associated implementation rules that are considered water quality standards only become effective for all DEQ and CWA programs upon EPA approval, rather than at the time of commission adoption.

2. How are the new human health toxics criteria incorporated into NPDES permits?

Adoption and approval of new criteria will not affect NPDES permits until permits are renewed. DEQ will not modify existing permits in effect to incorporate the new criteria at the time of EPA approval if that approval occurs during their permit cycle. At the time of permit renewal, DEQ will evaluate whether new WQBELs need to be developed and incorporated into the permittee's permit to meet the revised water quality criteria.

3. When will the Integrated Report reflect 303(d) toxics listings based on the revised human health criteria?

DEQ anticipates that human health criteria based on a fish consumption rate (FCR) of 175 g/day will be adopted by the EQC in June 2011. Consequently, the proposed criteria will not be adopted and approved by EPA in time to be evaluated as part of the 2010 Integrated Report. DEQ will incorporate the revised human health toxics criteria into the Integrated Report as soon as feasible. Depending upon the timing of EPA approval, DEQ may be able to incorporate the revised criteria into the Integrated Report as soon as

the 2012 Integrated Report. Depending on monitoring results and the ability to quantify low concentrations of toxic pollutants, there may be additional listings for toxic pollutants once the revised criteria are evaluated as part of subsequent Integrated Reports or reports thereafter.

4. Which rulemaking components will have Internal Management Directives (IMDs) and when will they become final?

DEQ develops IMDs to assist its staff in implementing environmental rules and policies. Typically, IMDs are developed after rules are adopted by the EQC. However, because of the level of interest and concern expressed in regards to the implementation of this rulemaking, DEQ is developing draft IMDs ahead of EQC adoption. Draft IMD outlines for variances and how TMDLs will be implemented are currently available for review as supporting information; DEQ is not soliciting public comment on these documents. These outlines describe the kind of information that will be included and what will be addressed in final IMDs. Draft final IMDs will be available at the time of EQC adoption in June 2011. Final IMDs will be completed following EPA approval of the rules, including an IMD for a site specific background pollutant criterion.

VARIANCE RULE

1. Can dischargers apply for variances from human health toxics criteria and the aquatic life criteria?

The current variance rule and proposed revised language allows facilities to apply for variances for any water quality criteria, including toxics criteria for human health and aquatic life, as long as certain requirements are met. The proposed changes would significantly improve variance issuance and implementation, with more specificity regarding minimum requirements and require actions leading to progress toward meeting water quality standards. As a result, the proposed improvements would apply to all criteria. The proposed variance provision has been developed to set up a framework for how variance requests are assessed and processed. In addition, variances must be approved by EPA. In instances of variances for aquatic life criteria, EPA will need to consult under the Endangered Species Act prior to EPA's approval action. DEQ acknowledges that an ESA consultation could pose a challenge to the administrative process, however, that should not preclude a discharger's ability to request a variance.

2. Why is the department changing the allowable maximum duration for a variance?

In the existing variance regulation, a variance is limited to three years or the term of the NPDES permit, whichever is less. The department proposes in this rulemaking to allow the duration to coincide with the duration of a NPDES permit. DEQ will grant variances only for the length of time supported by the data and information, not to exceed the duration of the permit. If justified for the duration of the permit, this alignment allows a variance to stay in effect until a new permit is reissued. This dovetailing fosters efficiency in the administrative process for granting variances and provides the opportunity to satisfy the public notice and comment requirements for both the variance and NPDES permit at the same time. In instances where the supporting documentation justifies the length of the variance for at least five years,

if a permit is administratively extended, the permit effluent limits and any other requirements based on the variance and associated pollutant reduction plan will continue to be in effect until the permit is reissued or revoked. Permits may be administratively extended for several reasons, including limited staff resources, aligning permit issuance on a watershed basis, insufficient data, or legal challenges. DEQ intends to limit the likelihood of this circumstance by giving priority to NPDES permit renewals for permits containing variances.

3. How will these regulations result in the protection of existing uses when a variance is granted?

Existing uses are addressed in the federal regulation governing states' adoption and implementation of water quality standards (40 CFR 131.10(g)[31] and (h)(1)). The regulation and EPA's interpretation of its regulation result in a prohibition on granting a variance if it results in a removal of an existing use. However, the degree to which an existing use must be protected has not been clearly defined by EPA. Before making a determination of whether or not a variance results in a removal of an existing use, the existing use must also be identified. An existing use is defined by whether or not the use has actually been attained in the water body on or after November 28, 1975, as well as determining the highest level of water quality corresponding to that use that has been achieved since that date.

DEQ agrees that existing uses cannot be waived when determining whether or not to grant a variance request from a discharger; however, the scale of this determination needs to be considered as part of this analysis. The federal regulations addressing the removal of an existing use per 40 CFR 131.10(g) specifically relate to removing a designated use for a waterbody or waterbody segment when conducting a Use Attainability Analysis. When applied to a variance, which is discharger-specific, the analysis is most appropriately related to whether or not the discharge under a variance scenario results in a removal of an existing use for that waterbody. One way of evaluating whether or not the existing use is protected is by examining any changes to discharge loads. For example, if the discharge pollutant load proposed under a variance scenario is the same as (or lower than) the load under the previous permit, it is reasonable to assume that there would not be a corresponding removal of an existing use attributable to the granting of the variance. DEQ cannot envision a scenario where a variance would be given to a facility seeking to increase their load. A major focus of the proposed revisions is to ensure that in instances where variances are granted, that progress toward meeting water quality standards is made. Proposed variance permit conditions require that the interim permit limit or requirement represent the best achievable effluent quality and is no less stringent than that achieved under the previous permit.

[31] 40 CFR 131.10(g) States may remove a designated use which is not an existing use, as defined in §131.3, or establish sub-categories of a use if the State can demonstrate that attaining the designated use is not feasible because:

4. How do nonpoint source best management practice (BMP) requirements apply in a variance request?

The federal regulations do not specifically address nonpoint source BMP requirements in conjunction with the issuance of variances. Rather, the regulations require states to evaluate whether or not a use could be attained in a water body if the water body were not being impacted by point or nonpoint sources of pollution when evaluating whether designated uses can be removed.

EPA has generally relied on the regulations governing use designation and removal as being applicable to the granting of variances, which is viewed as analogous to a use change for an individual discharger. In that context, EPA has previously interpreted the federal regulations to require those BMPs that may be implemented by a particular discharger be implemented prior to granting a variance (See Water Quality Guidance for the Great Lakes System: Supplementary Information Document (SID) (EPA-820-B-95-001, March 1995). Part of this rationale relates to the applicability of the variance request.

Variances, as described by DEQ's regulations, are facility-specific, and do not result in removing the designated use on a waterbody segment. Rather, the effect of the variance is to change the water quality standards applicable to the facility, and keep the underlying water quality standards in effect for all other purposes. If the permittee can implement cost-effective and reasonable BMPs for nonpoint sources (i.e. sources not covered under a NPDES permit) over which it has control, the permittee should implement those BMPs either before requesting a variance for its point source discharge or as part of the requirements the facility would implement as part of its variance. For example, if a discharger owned and/or controlled large tracts of land which contributed to nonpoint sources of pollution impacting its point source discharge, it would be incumbent upon the discharger to implement BMPs to reduce pollutant levels as part of its approved pollutant reduction plan (PRP). However, DEQ envisions BMP implementation occurring as part of the PRP in the variance request, rather than as a prerequisite for variance approval.

5. Can a point source without a currently effective NPDES permit request a variance?

In the proposed variance regulations, variances would not generally be granted to a point source that does not have a currently effective NPDES permit. This rationale is based on the assumption that these facilities should be able to mitigate and implement compliance strategies before discharging to a water body, in keeping with the overall objectives of the CWA. However, there may be circumstances in which facilities without currently effective NPDES permits may be allowed a variance based on social or environmental benefits. For example, the proposed rule may grant an exception in order to prevent or mitigate a threat to public health or welfare. Another exception is where a water quality or habitat restoration project may cause short term water quality exceedances, but will result in long term water quality or habitat improvement benefits.

If appropriate, DEQ would prefer to use a compliance schedule for these types of facilities, where needed, to achieve water quality standards. However, allowing a compliance schedule for new sources and

dischargers may only occur on a limited basis. Overall, staff would closely analyze any requests from expanding facilities or newly permitted facilities to determine if a variance was warranted.

6. The Oregon Environmental Quality Commission (EQC) currently has the authority to grant variances. Why is the department proposing changes to allow it to also hold that authority? Is it legal for DEQ to grant variances, instead of the EQC? Under what circumstances will the department grant a variance, and likewise, under what circumstances will the commission grant a variance?

To foster efficiency in the administrative process for granting variances, the department is proposing changes to allow the Director of DEQ to authorize variances. The EQC generally meets every two months, however, agendas are typically very full and items brought to the EQC require an additional 6 weeks lead time for DEQ staff to prepare the materials. A backlog of variance requests may lead to delays in approval. Because DEQ expects variance requests to be closely linked with the permit evaluation and the drafting of the permit, the process for granting the variance should occur at the same time as the permit issuance. By giving authority to the DEQ Director, the variance approval process will be more efficient and timely.

It is legal for DEQ to grant variances. By adopting the authorizing rule language granting the department to grant variances, the EQC is delegating that authority to the department.

The department will grant individual variances that are applicable to a single facility. Unique circumstances or controversial situations may warrant EQC approval and will be determined on a case by case basis. The commission will grant variances in circumstances where a discharger does not have a currently effective NPDES permit.

7. How will the department ensure integrity and consistency in the process for granting variances? Is there a public appeals process?

The department will develop an Internal Management Directive (IMD) to guide the variance process. A detailed outline of this IMD has been made available on DEQ's website with the proposed rulemaking materials. As noted in the outline, the IMD will focus on the application requirements and procedures, justification for requesting a variance, establishing interim permit conditions and pollutant reduction plans under a variance, approval and renewal process, and situations where a variance would not be appropriate or approved. A draft IMD will be developed by May 2011, in anticipation of the June 2011 EQC adoption of this rule. The final IMD will be completed after EPA approval.

In addition, every variance request will be subject to public notice and comment requirements. As described in the proposed rule, DEQ would satisfy these requirements by including the proposed variance in the public notice for a draft NPDES permit and holding a public hearing.

DEQ and EPA will work together to develop mutually acceptable timeframes to guide the variance approval process. In addition, DEQ anticipates assistance from EPA in conducting reviews based on an economic justification.

If a member of the public provided comments during the public comment period and does not support a decision by DEQ, he or she will have the same recourse available to the public to appeal any other part of the permit by making a request to the department to reconsider the decision to grant a variance.

8. How is the triennial requirement met under Clean Water Act section 303(c)(1) in circumstances where a variance has been approved for a period longer than three years?

Section 303(c) of the CWA requires states to conduct a triennial review of their water quality standards. If the state adopts new or revised water quality standards, they must be submitted to EPA for approval. A variance is considered a temporary change to a water quality standard, so it is subject to triennial review requirements. However, section 303(c) does not require standards to expire and be re-adopted every three years; rather, the review is an opportunity to identify what standards need to be revised based on updated science or other circumstances. If during a triennial review process, information is submitted to the department showing that the conditions on which the variance was based and/or the justification for the variance are no longer valid, the variance could be terminated by the department or the commission.

9. During the variance period, will an effluent limit be included in the facility's permit for the pollutant which is the subject of the variance? How will DEQ determine what the interim effluent limit should be?

During the variance period, the facility will be required to achieve the lowest effluent concentration possible under current operations and treatment and which is no less stringent than that achieved under the previous permit. At a minimum, these requirements will reflect the best effluent quality achieved under current operations and treatment, presuming the facility is operating the system at optimum performance levels under a variety of environmental conditions. In some cases, the discharger may be able to reduce pollutant concentrations in its effluent through source reduction, treatment optimization, or other pollutant reduction strategies. In these cases, a lower effluent limit may be possible to achieve and will be incorporated into an interim limit.

10. How will the department ensure that reasonable progress is being made toward meeting the underlying or original water quality standards during the variance period?

The proposed rule requires all permittees requesting a variance to prepare a pollutant reduction plan that contains measures the permittee will take to ensure progress is made toward meeting water quality standards and associated requirements. These activities may include performance of additional studies, monitoring, development and implementation of specific activities contained in the pollutant reduction plan, implementation of pollutant offsets or trading, and/or other controls deemed necessary. Where required, these terms and conditions, as well as milestones, and monitoring and reporting requirements will be incorporated into the applicant's NPDES permit or department order.

11. How is the antidegradation policy applied in the variance process?

An antidegradation policy provides a means for maintaining and protecting water quality of surface waters by requiring that all activities with the potential to affect existing water quality undergo review and comment prior to any decision to approve or deny a permit or certificate for the activity. Any activity that proposes to discharge a new or increased load (beyond loads presently allowed in an existing permit) or that will lower the water quality of a water body identified as a high quality water is subject to an antidegradation review. However, permit renewals with the same or reduced discharge load as the previous permit are not considered to be lowering water quality from the existing water quality conditions. DEQ does not envision a situation in which a variance would be approved for discharge loads that are greater than loads under the discharger's previous permit.

12. Would a variance be subject to public notice and comment requirements?

Yes, as with revisions to state water quality standards, a variance request would also require public notice and comment. DEQ would also hold a public hearing. Since variances will be linked to the NPDES permitting cycle, public notice can serve both permitting and variance requirements.

13. What sort of requirements would be expected under a pollutant reduction plan (PRP)?

A pollutant reduction plan would be developed based on factors such as, discharge concentrations, pollutant source, fate and transport of the pollutant in the environment, available treatment technology, etc. Each PRP will be tailored to address the specific circumstances of each facility and to the extent pollutant reduction can be achieved. For example, where a discharge would result in an exceedance of a limit based on a water quality criterion due to a facility's industrial process, source materials used, and/or inflow and infiltration issues, and treatment to reduce effluent concentrations is not available, the department would work with the facility to develop a PRP to reduce the pollutant of concern, including milestones for implementation, as appropriate. There may also be situations where the actions DEQ would expect to include in a PRP would be more limited. This may be the case where, for example, a discharger is not increasing the mass of a pollutant already present in the intake water, but there is a slight increase in concentration of the pollutant in the receiving stream due to evaporative cooling processes of the facility. In this case, the opportunities to reduce pollutant loads may be limited and the subsequent requirements contained in the PRP would appropriately reflect those actions to be taken by the discharger.

14. What information would be needed to justify a request for renewal of a variance? Does a renewal need to be reviewed and approved by EPA?

Variances may be renewed if an applicant reapplies and demonstrates that the designated use is still not attainable or that the conditions upon which the variance was granted continue to exist at the time of the permit renewal. Renewal of the variance may be denied if the applicant does not comply with the conditions of the original variance or otherwise does not meet the requirements set forth in variance

regulations. If applicable, the department will require the applicant to submit information demonstrating that reasonable progress has been made toward achieving the underlying water quality standard.

Yes, EPA would need to review and approve a request for a renewal, since a renewed variance is considered to be a change to water quality standards.

15. If a facility is approved for a variance, what are the long-term goals for a discharger who cannot meet the water quality criterion?

The proposed rule governing variances would allow the timeframe to be up to the duration of the NPDES permit. Variances may be renewed for subsequent terms if an applicant is not able to meet the criterion by the expiration of the variance time limit and demonstrates that the conditions upon which the variance was granted continue to exist in order to be approved for renewal. The renewal request is an opportunity to ascertain progress in meeting the applicable water quality criterion and to determine next steps. DEQ's goal is to maintain the underlying designated use even if the use cannot be met in the short term. DEQ anticipates that in some circumstances, a change in designated use and/or criteria would be appropriate and should be considered.

16. Does the variance rule allow multiple discharger permits?

A multiple discharger variance is a variance in which an upfront justification has been developed for not meeting a water quality standard based on a common set of factors for a certain group of similar facilities. A multiple discharge variance requires explicit rulemaking to address the particular facility/pollutant situation. If a facility fits under this justification, an individual approval of the variance is not required at the time the facility requests inclusion under the multiple discharger variance.

The variance authorizing language being proposed by the department is directed to individual facilities only. This does not preclude multiple similarly-situated dischargers from applying for variances at the same time using the same or similar justification, however, each variance must be approved by either the DEQ director or EQC, and by EPA. If the department identifies a situation for a multiple discharger variance at some point in the future, DEQ would pursue a rulemaking to develop a multiple discharger variance specific to the facility/pollutant situation identified.

17. How does the Endangered Species Act apply to variances for aquatic life criteria?

Aquatic life criteria variances submitted to EPA for approval are subject to Endangered Species Act (ESA) consultation requirements. Section 7(a)(2) of the ESA requires that federal agencies, in consultation with the U.S. Fish and Wildlife Service and the National Oceanic and Atmospheric Administration Fisheries Service, ensure that their actions are not likely to jeopardize the existence of federally listed species or result in the adverse modification of designated critical habitat of such species. EPA will need to address obligations under the Endangered Species Act. EPA envisions the consultation would be tiered such that

the detailed assessment of potential affects will occur at the time of EPA action on individual variances. Extended time for ESA consultation will need to be built into the standard variance approval timeframe for variances that require such consultation.

18. Are there any situations where the department would not approve a variance to a facility based on certain circumstances?

Although the department anticipates that variances will be a useful tool to comply with revised human health toxics criteria, there may be situations where a variance will not be appropriate. For example, as described in the proposed rule, DEQ would not grant a variance in situations where the effluent limit sufficient to meet the underlying water quality standard can be attained by implementing technology-based effluent limits; the variance would likely jeopardize threatened or endangered species under the Endangered Species Act; the variance would result in an unreasonable risk to human health; the information submitted by the discharger does not support a variance request; or if the discharger does not have a currently effective NPDES permit (some exceptions apply).

SITE-SPECIFIC BACKGROUND POLLUTANT CRITERION PROVISION (BPP)

1. How can DEQ ensure that the water quality standards protect human health with the BPP?

The proposed site-specific background pollutant criteria provision applies only to carcinogens, which are based on a risk level. In no case may a site-specific criterion established under this provision exceed a value that represents a risk level greater than 1×10^{-4} (1 in 10,000 additional incidents of cancer given the daily exposure over a 70 years). Because Oregon is using a fish consumption rate based on high consumers, this cap ensures that a site-specific background pollutant criterion will not result in unacceptable human health risk from a single source or cumulatively from multiple sources.

2. Does the BPP replace the water quality criteria that apply to the waterbody?

The proposed rule provision is a performance-based water quality standard that results in site-specific criteria. Site-specific criteria established under this provision will apply in the vicinity of the discharge for the sole purpose of establishing permit limits for the discharger and do not replace the underlying criteria for the water body, which are based on a human health risk level of 10^{-6} (1 in 1,000,000). The waterbody criteria remain the overall goal for the water body and will continue to be uses as the basis for water quality assessments, 303(d) listings and total maximum daily load (TMDL) development. Because the TMDL will target the waterbody criteria, as the sources of the background pollutant and the ambient concentrations are reduced, the pollutant concentration in the discharge of facilities using the river for their water supply will be reduced as well.

3. Why is the pollutant mass load limitation needed as long as the river concentration doesn't exceed the 10^{-4} risk value? In other words, the rule should apply to all intake water, including groundwater, not just the water taken in from the receiving water body.

The BPP will be used in situations where the waterbody exceeds applicable water quality criteria and is either listed as impaired or is expected to be listed based on the available data. In this situation, the

Clean Water Act requires DEQ to develop a total maximum daily load (TMDL) and reduce pollutant loading to the river in order to attain water quality standards. Because the objective of the TMDL is to reduce the pollutant load in the river, additional discharges of the impairment pollutant are not allowed until the TMDL is complete and demonstrates that assimilative capacity for an additional load is available and that the additional load will not reduce the likelihood of attaining standards in the water body.

4. Does the BPP apply to new sources?

The background pollutant provision applies only to existing discharges. As explained above, no increase in mass load of the pollutant to the waterbody is allowed above that which was removed from the water body in the facility's intake water. Per federal permitting regulations, DEQ may not allow new pollutant loading of the impairment pollutant to a water quality limited waterbody.