CITY OF KLAMATH FALLS, OREGON

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Sister City
ROTORUA, NEW ZEALAND

March 17, 2011

VIA U.S. AND ELECTRONIC MAIL (ToxicsRuleMaking@deq.state.or.us)

Andrea Matzke
Oregon Department of Environmental Quality
Water Quality Division
811 SW 6th Ave.
Portland, OR 97204

Re: Comments on Revised Water Quality Standards for Human Health Toxic Pollutants and Revised Water Quality Standards Implementation Policies

Dear Ms. Matzke:

The City of Klamath Falls ("City") appreciates the opportunity to comment on the Department of Environmental Quality's ("DEQ's" or the "Department's") proposed rules concerning water quality standards for human health toxic pollutants and revised water quality standards implementation policies ("proposed rules). The City presents these comments as a National Pollutant Discharge Elimination System ("NPDES") permittee that provides municipal wastewater collection and treatment services to nearly 20,000 City residents and Klamath Basin area customers.

On February 22, 2011, the City submitted public comments on the Department's proposed amendments to the water quality criteria for arsenic. As explained in those public comments, the Klamath Basin has naturally-elevated levels of arsenic well above the proposed arsenic criteria. The City also raised concerns that the proposed arsenic criteria, if left as is, did not provide the clarity or certainty the City needed to make long-term decisions about how these criteria will be implemented in the Klamath Basin.

With these concerns in mind, the City submits the following comments and several requested revisions or clarifications to DEQ's proposed rules. Much of these comments focus on the proposed implementation policies for the revised water quality standards because there is some potential the City will need to rely on these implementation policies when its permit is re-issued. The City's proposed revisions to the rule are identified in these comments in ***bold, italicized, and underlined*** text. While the City has raised numerous comments, it wishes to emphasize its strong support for the Department's efforts to develop the proposed rules.

Summary of Comments

- For areas with naturally-elevated levels of toxic substances, under OAR 340-041-0007(2) the natural conditions supersede the State's generic numeric criteria and become the standard for a water body.

- The proposed amendments to the toxics substances rule (OAR 340-041-0033) should be revised to reference the NPDES implementation policies that are also proposed for adoption in this rule-making.

- The Department should make several revisions and clarifications to the background pollutant allowance rule (OAR 340-041-0033(6)) to clarify that municipalities can rely on this rule and to ensure that the rule is easier to apply.

- The Department should revise and clarify several provisions of the variance rule (OAR 340-041-0059) including how variances can be obtained in water bodies with naturally-elevated levels of pollutants that cause exceedances in State water quality criteria and to ensure the rule is easier to apply.

- The Department should revise and clarify several provisions of the intake credits rule (OAR 340-045-0105) so it is clear the rule can be applied when a permitee's intake originates from groundwater.

- DEQ should clarify how the criteria for methylmercury will be converted into NPDES effluent limits.

- DEQ should clarify that, under certain circumstances, permittees can use flow augmentation to reduce toxic substances concentrations in the effluent and to meet water quality criteria.

Specific Comments

A. For areas with naturally-elevated levels of toxic substances, under OAR 340-041-0007(2) the natural conditions supersede the State's generic numeric criteria and become the standard for a water body.

As explained in detail in the City's public comments on the revised arsenic criteria, naturally-elevated levels of arsenic in the Klamath Basin exceed the proposed generic arsenic criteria. In the Klamath Basin and elsewhere, there may also be naturally-elevated levels of other toxic substances that exceed the State's generic water quality criteria under the proposed rules. The Department should clarify in the proposed rules or in guidance to the proposed rules that, in such instances, the generic criteria set by rule cannot properly be applied to water bodies with naturally-elevated levels of toxic substances above the generic criteria. Rather, the naturally-elevated levels of toxic substances should supersede the criteria set by rule and become the criteria for a water basin.

Such a determination is consistent with DEQ's existing rule under OAR 340-041-0007(2), which applies to all criteria. This rule provides "[w]here a less stringent natural condition of a water of the State exceeds the numeric criteria set out in this Division [340-041], ***the natural condition supersedes the numeric criteria and becomes the standard for that water body***." (Emphasis

added). Such a determination is also consistent with the toxic substances rule, OAR 340-041-0033(1) (planned to be re-codified at OAR 340-041-0033(2)), which states "[t]oxic substances may not be introduced above natural background levels in waters of the state...," so, under this rule, natural background levels for any toxic substance must be taken into account to properly apply the criteria.[1]

By recognizing that naturally-elevated levels of toxic substances in a water body supersede the criteria set by rule, DEQ can avoid developing effluent limits in an NPDES permit that are more stringent than natural background levels of a constituent. This is important because effluent limits in a permit that are more stringent than the natural background levels of a pollutant will make no meaningful difference in the water quality condition of the receiving water body and will effectively require, in some cases, a permittee to clean up constituents in its intake water that it did not add to its intake water. Further, by recognizing that natural conditions supersede the State's generic criteria, DEQ and permittees can potentially avoid the substantial and unnecessary resource burdens that will be associated with processing requests for background pollutant allowances, variances, or intake credits, all three of which are the subject of these proposed rules.

B. The proposed amendments to the toxics substances rule (OAR 340-041-0033) should be revised to reference the NPDES implementation policies that are also proposed for adoption in this rule-making.

The City requests the following two revisions to OAR 340-041-0033 (the toxics substances rule). The basis for these revisions is discussed immediately below. The City's proposed textual changes to the rule to reflect these comments are presented further below.

1. Section (4) of the toxic substances rule pertaining to human health criteria should be revised to reflect the NPDES implementation policies that are the subject of the proposed rules under OAR Divisions 41 and 45 (i.e., background pollutant allowances, variances, and intake credits).

2. Section (4) of the toxic substances rule should be revised to clarify that NPDES effluent limits based on these implementation policies are considered to be water quality based effluent limits. Thus, for effluent limits developed based on these policies, the State's generic water quality criteria for pollutants will not be used to calculate limits at a permitee's outfall or in any mixing zone, even when a permitee's discharge may exceed the State's generic water quality criteria.

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[1] The City's recommendation is also consistent with DEQ's practice of using "Natural Conditions Criteria" for a river's natural thermal potential in lieu of generic state criteria that do not apply in every watershed. *See* 340-041-0028(8) ("Where the department determines that the natural thermal potential of all or a portion of a water body exceeds the biologically-based criteria in section (4) of this rule, the natural thermal potential temperatures supersede the biologically-based criteria, and are deemed to be the applicable temperature criteria for that water body.")

In light of these comments, the City requests that Section (4) of the toxic substances rule be revised as follows:

> *(4) Human Health Criteria*
> *(a) Levels of toxic substances in waters of the state may not exceed the applicable human health criteria listed in Table 40,* ***except as provided by applicable sections of OAR 340, Divisions 41 and 45. NPDES effluent limits established based on natural background conditions, background pollutant allowances, variances, and intake credits are considered water quality based effluent limits.***

C. The Department should make several revisions and clarifications to the background pollutant allowance rule (OAR 340-041-0033(6)) to clarify that municipalities can rely on this rule and to ensure that the rule is easier to apply.

One of the purposes of the background pollutant allowance proposed under OAR 340-041-0033(6) ("the background rule") is to authorize permittees to discharge into water bodies where there are elevated levels of pollutants (like arsenic) in a permitee's intake water that the permittee did not add to its intake and that are above the State's generic water quality criteria. Under the background rule, permit writers will authorize a discharge of a pollutant above the water quality criteria provided the discharge will not result in an increase of over 3 percent in the background pollutant concentration of a water body. With these understandings in mind, the City requests the following revisions and clarifications to the background rule.

Requested revisions to OAR 340-041-0033(6)

The City requests the following eight revisions to the background rule. The basis for these revisions is discussed immediately below. The City's proposed textual changes to the rule to reflect these comments are presented further below.

1. The Department should revise the background rule to clarify that, when a permitee's intake water is from groundwater (which is the case for the City), an increase resulting in 3% or less in the background pollutant concentration of a water body will be measured by comparing the concentration of the pollutant above the discharge to the concentration of the pollutant in the water body below the discharge after complete mixing. This revision will clarify that the background rule can be applied to permittees whose intake originates from groundwater as opposed to a water body immediately upstream of a permitee's discharge.

2. The Department should revise the background rule to eliminate the requirement that there must be a hydrological connection between a permitee's intake water and the receiving water body before a permittee is entitled to a background pollutant allowance. The City's intake water originates from groundwater; however, it would be extremely difficult and costly to determine the extent to which all of this groundwater is hydrologically connected to the receiving water body. It is also unclear why the Department has restricted the availability of the background pollutant allowance to instances where groundwaters are hydrologically

connected to the receiving water body. Accordingly, the background rule should be revised to eliminate the requirement of a hydrological connection between a permitee's intake water and the receiving water body.

3. The Department should revise the background rule to address the fact that a permitee's intake water can include groundwater deliberately drawn into or introduced into a municipality's intake and/or groundwater that inadvertently infiltrates into its municipal collection system. Thus, the City requests that the background rule be revised to clarify that allowances can also be issued to account for pollutants that enter a municipal collection system through inadvertent infiltration.

4. As written, the background rule seems to only contemplate the availability of background pollutant allowances where a permitee's discharge will increase by 3% or less the background pollutant concentration of a water body. The rule should be expanded to ensure background pollutant allowances are also available, if necessary, for a permittee that discharges pollutants at a level higher than the State's generic water quality criteria, but lower than the background levels of the receiving water. For example, the State's generic criteria for arsenic may be set at 2.1 ug/l, but the average background level of arsenic at the mouth of Link River (immediately upstream of the City) is 6.45 ug/l. *See* City's February 22, 2011 public comment letter on arsenic criteria at 4. If a permittee discharged arsenic at a level that was lower than 6.45 ug/l, then the resulting concentration in the river below the discharge would be less than the background. In this case, the protection of human health would be increased. The background rule should be revised to reflect and encourage such discharges into a receiving water body.

   On a related note, background levels of pollutants in a permitee's intake and in a receiving water body will fluctuate. There may be times when levels of background pollutants in intake are lower than the levels in the receiving water and other times when these levels are higher than levels in the receiving water. Given these circumstances, it is plausible that a permittee may, at some point, need to rely on a background pollutant allowance to address fluctuating amounts of background pollutants in its system. Therefore, the background rule should be expanded to reflect these circumstances.

5. Section (6)(b)(A) of the background rule states that, as a condition for a background pollutant allowance, 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." This provision should be amended to delete the "same water body" requirement and the requirement that the discharge "does not increase the mass load of the pollutant in the receiving water body."

   If a permitee's discharge does not result in an increase of over 3% in the background pollutant concentration of a water body, it should not matter, from a human health perspective, whether or not the permitee's intake water is from the "same water body" into

which the permittee discharges. Further, there may be instances where a permitee's intake water is not from the "same water body," but where the intake water has a lower concentration of a pollutant than the background concentration of the pollutant in the water body into which the facility discharges. In such instances, the permittee could add a pollutant load to the receiving water (in terms of mass), but, because the discharge has a lower concentration than the receiving water body, it would result in a lower concentration of the pollutant in the receiving water body.

6. Section (6)(b)(B) of the background rule concerns how the background pollutant concentration is calculated. The rule should clarify the relevant period of time to calculate the harmonic mean. The City suggests that the harmonic mean be calculated based on the past ten years of flow data.

7. Section (6)(b)(C) of the background rule provides that, as a condition of a background pollutant allowance, the background pollutant concentration is less than 97% of the value that represents a $1x10^{-4}$ human health risk level. This condition should be deleted. The purpose of the background rule is to authorize permittees to discharge into water bodies where there are elevated levels of toxic substances in a permitee's intake that are above the State's generic water quality set by rule. If this provision remains in the background rule, it could potentially undercut the purpose of the rule. Irrespective of human health risks, a permittee should be able to rely on a background pollutant allowance particularly where the background levels of a toxic substance like arsenic are naturally-elevated in the receiving water body.

8. A new provision (6)(b)(C) should be added to the background rule to clarify that a background pollutant allowance lasts for the duration of the permit. Further, if the permit is administratively extended, the background pollutant allowance will continue to be in effect during the period of the administrative extension.

In light of these comments, the City recommends the following revisions to the background rule:

> *(6)* ***Any permitted discharge that causes either a decrease in the background pollutant concentration or causes an ~~An~~*** *increase of 3% or less* ***over ~~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* ***or aquatic resource*** *protection and may be allowed under the conditions established in subsection (b) of this section.* ***When a permitee's intake water originates from groundwater, an increase of 3% or less in the background pollutant concentration of a water body will be measured by comparing the concentration of the pollutant above the point of discharge to the concentration of the pollutant in the receiving water body below the discharge and after complete mixing of the discharge.***

(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 ***source of the*** *mass of pollutant in the facility's* ***intake water can be from: (i) water deliberately drawn into or introduced into a facility's water supply or distribution system, or (ii) water that inadvertently infiltrates into a facility's water collection system.*** ~~*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) ***For dischargers whose intake water is from the same water body into which it discharges, t****he mass of the pollutant in the discharge does not exceed the mass of the pollutant in the facility's intake water* ***or the mass of the pollutant added through inadvertent infiltration into the facility's water collection system. For discharges whose intake is not from the same water body into which it discharges, the mass of the pollutant shall not exceed that which would cause more than a 3% increase above the background concentration of the receiving water body.*** ~~*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 **most recent 10 year** harmonic mean flow of the water body.*

*(ii) For all other waters, using 100% of the **most recent 10 year** 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) Once a background pollutant allowance is granted and incorporated into a permit, the allowance lasts for the duration of the permit. If the permit is administratively extended, the allowance will continue to be in effect during the period of the administrative extension.

Requested Clarifications to OAR 340-041-0033(6)

The City requests the following two clarifications to the background rule.

1. If the Department retains the requirement that a permitee's intake water and the receiving water must be from the "same water body" (e.g., a hydrological connection between the intake water and the receiving water body) then the City requests clarification as to whether it would be a candidate for a background pollutant allowance. At least some of the City's intake water, including water that inadvertently enters its collection system, is hydrologically connected to the Klamath River. Thus, even if the rule is not revised as requested above, the City would presumably qualify for a background pollutant allowance for at least some of the water entering its intake system. Please clarify if the Department has a different interpretation.

2. As noted above, the City requests that the human health risk condition (Section (6)(b)(C)) be deleted from the background rule. If the Department retains the condition, then, at a minimum, it should recognize that, in many instances, a permitee's intake water may have less of a naturally-elevated pollutant than the level of this same pollutant in the receiving water body. Under these circumstances, the permitee's discharge would be more protective of human health than the background conditions in the receiving water body. Thus, in the event the Department retains the condition, Section (6)(b)(C) should be revised to state:

   *(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). **This condition does not apply where the permitted***

discharge will result in a pollutant concentration in the water body that is less than the background concentration of the receiving water body after completely mixing with 100 % of the receiving water body as calculated using the most recent 10 year harmonic mean flow of the receiving water body.

On a related note, if the Department rejects this proposal and retains Section (6)(b)(C) (as proposed) then it should either not apply this provision to background conditions of arsenic or explain how this condition would apply to arsenic. The proposed arsenic criteria (unlike other toxic substances criteria) includes two different criterion derived from two different human health risk factors.[2] Given this unique situation, it is unclear how this condition could or would be applied for arsenic.

D. The Department should revise and clarify several provisions of the variance rule (OAR 340-041-0059) including how variances can be obtained in water bodies with naturally-elevated levels of pollutants that cause exceedances in State water quality criteria and to ensure the rule is easier to apply.

The City supports the Department's proposed revisions to the existing variance rule to be re-codified at OAR 340-041-0059. The City requests the following revisions and clarifications to Sections (1)(2)(3) and (5) of the proposed variance rule.

Revision to OAR 340-041-0059(1)

The City requests the following three revisions to Section (1) of the variance rule. The City's proposed textual changes to the rule to reflect these comments are presented further below.

1. Section (1)(b)(A) of the variance rule seems to suggest that a permittee can only qualify for a variance if it also implements cost-effective and reasonable best management practices for nonpoint sources under its control. The City recognizes that best management practices are necessary to control nonpoint sources. Nonetheless, non-point source control bears no relation to whether a point source should qualify for a variance. The premise underlying a variance is that a point source cannot meet water quality-based criteria at its outfall or with a mixing zone. The Department should delete this condition and focus the variance qualifications on matters that concern point sources.

2. Section (1)(b)(C) of the variance rule should be revised to clarify that the Department will make the determination of whether a variance poses an "unreasonable risk to human health."

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[2] DEQ used a risk factor of 1×10^{-4} (1 in 10,000 risk of cancer) to calculate the inorganic arsenic criterion of 2.1 ug/l for the water and fish ingestion criterion. For the fish consumption only criterion, DEQ adjusted the risk factor to 1.1×10^{-5} (1 in 110,000 risk) so that the fish consumption only criterion equaled the criterion for water and fish ingestion at 2.1 ug/l.

It is inappropriate to require a permittee to corral the data on human health effects of a variance.

3. A new provision should be added as Section (1)(c) to the variance rule to clarify that, if the granting of a variance does not increase the amount of a pollutant already in a waterbody, than the variance would not: (a) jeopardize the continued existence of any threatened or endangered species or result in the destruction or adverse modification of such species' critical habitat; or (b) increase the risk to human health.

In light of these comments, the City requests the following revisions to Section (1) of the variance rule:

(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*

....

(C) The conditions allowed by the variance would result in an unreasonable risk to human health, ***as determined by the department***;

(c) If the granting of a variance does not increase the amount of a pollutant already in a water body, then the Department shall find that the variance will not jeopardize the continued existence of any threatened or endangered species or result in the destruction or adverse modification of such species' critical habitat or increase the risk to human health.

Revisions to OAR 340-041-0059(2)

The City requests the following two revisions to Section (2) of the variance rule. The City's proposed textual changes to the rule to reflect these comments are presented further below.

1. Section (2) of the variance rule should be revised to add a new paragraph (c) to clarify that a variance can be issued for a permittee that discharges into a waterbody that is listed on the State's Clean Water Act Section 303(d) list of impaired waters.

2. This new paragraph (c) should further clarify that, if a variance does not increase the amount or concentration of a pollutant already in a water body, than the variance would not further impair, degrade, or remove an existing or designated use.

In light of these comments, the City requests Section (2) of the variance rule to be revised as follows:

> *(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*
> >
> > ....
> >
> > ***(c) If the granting of a variance does not increase the amount or concentration of a pollutant already in a water body after completely mixing with 100 % of the water body as calculated using the most recent 10 year harmonic mean flow of the water body, than the Department shall make a finding that the variance would not further impair, degrade, or remove an existing or designated use, irrespective of whether that water body is on the State's Section 303(d) list of impaired waters.***

Clarification to OAR 340-041-0059(2) & (3)

The Department should clarify in its response to public comments how Sections (2) and (3) of the variance rule will be applied and interpreted if and when variances from water quality criteria are needed to address naturally-occurring or anthropogenic loads of pollutants upstream of a permitee's discharge that cause an exceedance in the State's generic water quality criteria. For context, the relevant sections of Sections (2) and (3) to be clarified are restated below:

> *(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;*
>
> ....
>
> *(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.*

As noted above, there are elevated levels of arsenic in the Klamath River upstream of the City's outfall that are well above DEQ's proposed generic water quality criteria for arsenic and beyond the City's control. Similarly, there are elevated levels of phosphorus in the Klamath River upstream of the City's outfall due to the significant phosphorus loads from the Upper Klamath Lake. For both arsenic and phosphorus, these upstream elevated conditions are considered a cause of downstream water quality conditions that do not meet the State's generic criteria for arsenic or pH or dissolved oxygen ("DO") (these later two constituents are influenced by phosphorus which causes algal blooms and leads to daily cyclical swings in pH and DO). In fact, the Department has concluded that, regardless of anthropogenic loads to the Klamath River, the River will never meet the state's generic water quality criteria for pH or DO. *See* Upper Klamath and Lost River Subbasins Total Maximum Daily Load and Water Quality Management Plan ("TMDL") at 2-40 concluding that "[t]he results of model scenarios [in the TMDL] demonstrate that dissolved oxygen, pH and temperature biologically-based, numeric criteria cannot be achieved under the estimated natural condition.... Simulation of natural conditions baseline was necessary because modeling results indicated that even with anthropogenic sources removed, numeric water quality standards were not achieved.")

Under the City's interpretation of Sections (2) and (3) of the variance rule, the test for whether a permittee qualifies for a variance is NOT whether a designated use for a river is obtained, but rather, whether "attaining the water quality standard during the term of the variance is not feasible for one or more of the following reasons" including "naturally occurring pollutant concentrations," "natural conditions" or "human-caused conditions or sources of pollution" that prevent the attainment of the use or cause an exceedance in water quality standards. If the

Department has a different interpretation, the City requests DEQ to clarify its view as to how variances can be used to address naturally-elevated levels of arsenic and phosphorus in the Klamath Basin.

Revisions & Clarifications to OAR 340-041-0059 (3)

The City requests the following two revisions and one clarification to Section (3) of the variance rule. The City's proposed textual changes to the rule to reflect these comments are presented further below.

1. DEQ should revise Sections (3)(a) and (b) of the variance rule to clarify that a variance can be obtained for a pollutant even when there is no underlying water quality standard for that pollutant. In the Klamath River, there are extremely high amounts of phosphorus that enter the Lake Ewauna segment of the river from Upper Klamath Lake and this phosphorus causes downstream water quality impacts on pH and DO. However, there is no water quality standard for phosphorus. The variance rule should reflect the fact that variances can be obtained for pollutants that cause an exceedance of a water quality standard.

2. DEQ should revise Section (3)(c) of the variance rule to specify that "enforceable controls" are limited to those controls that can be enforced or reasonably employed by the variance applicant, as opposed to other "enforceable controls" that might be relevant to the control of the pollutant of concern, but that are not within the control of the applicant.

3. The City interprets the term "background concentration of the pollutant" as used in Section (3) of the variance rule to be equivalent to the term "background pollutant concentration" as proposed to be defined under OAR 340-141-0033(6)(a)(A). If this is the case, the variance rule should cross-reference this definition. If this is not the case, DEQ should specify under Section (3) what it considers to be the "background concentration of the pollutant" and why that differs from the definition under OAR 340-141-0033(6)(a)(A).

In light of these comments, the City recommends that Section (3) of the variance rule be revised as follows:

> *(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* ***or the pollutant causes an exceedance of an underlying water quality standard****;*
> >
> > *(b) The background concentration of the pollutant would exceed the underlying water quality standard* ***or the pollutant causes an exceedance***

> ***of an 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.* ***Enforceable controls are limited to those controls that can be enforced or reasonably employed by the variance applicant.***

Revisions & Clarifications to OAR 340-041-0059 (5)

The City requests the following three revisions and one clarification to Section (5) of the variance rule. The City's proposed textual changes to the rule to reflect these comments are presented further below.

1. The variance rule should be revised to clarify that, when an applicant seeks a variance from a water quality standard due to naturally-elevated levels of a pollutant in its intake, the applicant need not submit information to address "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." Applicants for variances should not be held responsible for reducing naturally-elevated levels of pollutants in a permitee's intake.

2. The variance rule should be revised to clarify that, when an applicant seeks a variance from a water quality standard due to naturally-elevated levels of a pollutant in its intake, the applicant need not submit information to address the "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." Pollutant reduction plans are appropriate to reduce pollutants a permittee adds to its intake water, but are not appropriate to reduce pollutants that are naturally in a permitee's intake water.

3. Section 5(d) of the variance rule should be revised to recognize that municipal permitee's may already be required to develop a "pollutant reduction plan" for a toxic substance of concern under OAR 340-045-0100(2)(e) (the implementing regulation of Senate Bill 737). Thus, for pollutants a permittee or users of a collection system add to a waste stream, the proposed rule should clarify that the "pollutant reduction plan" can be the same plan that a municipal permittee may be required to develop under OAR 340-045-0100(2)(e).

4. Section 5(c) of the variance rule requires the applicant to submit "[s]ufficient water quality data and analyses to characterize ambient and discharge water pollutant concentrations." The City interprets the term "ambient" to refer to the background concentrations of a pollutant in the receiving water body at or near the point of discharge. Please clarify if the Department has a different interpretation. On a related note, the City requests DEQ to specify in its response to public comment or in guidance how to "characterize ambient and discharge water pollutant concentrations."

In light of these comments, the City recommends that Section (5) of the variance rule be revised as follows:

> *(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.* ***For municipal permittees, the pollutant reduction plan may be the same plan permittees may be required to develop under OAR 340-045-0100(2)(e)****; 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.*
>
> ***A permittee is not required to submit the information under paragraphs (b) or (d) if the permittee seeks a variance from a water quality standard due to naturally-elevated levels of a pollutant in its intake.***

E. The Department should revise and clarify several provisions of the intake credits rule (OAR 340-045-0105) so it is clear the rule can be applied when a permitee's intake originates from groundwater.

The City supports the Department's proposed creation of an "intake credits" rule to be promulgated at OAR 340-045-0105. The City requests the following revisions and clarifications to the proposed intake credits rule.

Revisions to OAR 340-045-0105(1)

The City requests the following four revisions to Section (1) of the intake credits rule. The City's proposed textual changes to the rule to reflect these comments are presented further below.

1. Section (1) of the intake credit rule should be revised to clarify that an intake credit is available for pollutants in a permitee's intake, even if a TMDL has been issued to control pollutants in a permitee's discharge. There are several instances in the State where TMDLs have been issued, but where such TMDLs do not address all constituents in a permitee's discharge.

2. Section (1)(b)(C) of the intake credits rule states that "[a]n intake pollutant is considered to be from the 'same body of water' as the discharge if the department finds ...(C) Water quality characteristics (e.g., temperature, pH, hardness) are similar in the intake and receiving waters.") When a permitee's intake water is from groundwater, the intake water may differ physically (e.g., in characteristics of temperature, pH, or hardness) as compared to the conditions of the receiving waters. For example, water from a groundwater source may be colder than the receiving water. This provision should be revised as demonstrated below to afford greater flexibility in the determination of whether a permitee's intake is considered to be from the "same body of water."

3. Section (1)(d) of the intake credits rule contains an exception to the rule, which states that "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." In many instances, it would be cost-prohibitive or impractical to determine if a pollutant in a groundwater source is present either naturally or "partially" or "entirely" "due to human activity." This provision should be revised to authorize the Department to use its best professional judgment to determine what proportion of the pollutants in a permitee's intake are due to natural causes and to authorize an intake credit for the pollutants of natural origin.

4. Section (1)(e) of the intake credits rule should be revised to be grammatically correct by adding the word "will" to this provision.

In light of the above comments, the City recommends that Section (1) of the intake credits rule be revised as follows:

> *(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; ***and***

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

(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.* ***If the groundwater contains a pollutant that is only partially due to human activity, then the department will use its best professional judgment to determine what proportion of the pollutant in a permitee's intake is due to natural causes and will authorize an intake credit for the estimated amount of a pollutant of natural origin.***
>
> *(e) The determinations made under Sections (2) and (3), below,* ***will*** *be made on a pollutant-by-pollutant and outfall-by-outfall basis.*

Clarifications to OAR 340-045-0105(1)

The City requests the following four clarifications to Section (1) of the intake credit rule (reproduced above):

1. The City requests clarification as to the meaning of the term "vicinity of the outfall point" as used in Sections (1)(b) and (d) of the intake credit rule. The City extracts groundwater from wells for water supply. In some cases, such groundwater wells are located at a point that is not physically upstream of the City's outfall. The City interprets the term "vicinity of the outfall point" to include groundwater withdrawals that enter a municipal system irrespective of where those withdrawals occur in relation to the outfall point. Please clarify if the Department has a different interpretation.

2. The City requests clarification as to the meaning of the term "background concentration of the pollutant in the receiving water" as used in Section (1)(b)(A). The City interprets this term as equivalent to the definition of "background pollutant concentration" under proposed rule OAR 340-041-0033(6)(a)(A). Please clarify if the Department has a different interpretation.

3. The City requests clarification as to the meaning of the term "direct hydrological connection" as used in Section (1)(b)(B). This provision states that "[a]n intake pollutant is considered to be from the 'same body of water' as the discharge if the department finds … (B) There is a direct hydrological connection between the intake and discharge points." The City interprets the term "direct hydrological connection" to mean that there is a connection between the City's intake and its discharge point, regardless of where the City extracts groundwater if that groundwater is eventually directed to and discharged from its wastewater treatment facility. Please clarify if the Department has a different interpretation.

4. The City requests clarification and confirmation that an intake credit is available for a pollutant, even if the users of a municipal collection system add the pollutant to a municipal wastestream. The City interprets the intake credits rule to authorize intake credits in such circumstances. In such instances, the permit writer can use their best professional judgment

to estimate the amount of a pollutant in intake water that has not been added by the users of the collection system or the permittee and authorize an intake credit for that amount. Please clarify if the Department has a different view.

Revisions to OAR 340-045-0105(2)

The City requests the Department to make the following two revisions to Section (2) of the intake credits rule. The City's proposed textual changes to the rule to reflect these comments are presented further below.

1. Section (2)(a) should be revised to reflect the fact that, when performing a reasonable potential analysis to determine whether a discharge could cause or contribute to an excursion above a narrative or numeric water quality criteria, a permit writer should use the relevant water quality criteria, which would include any basin or site-specific criteria.

2. Section (2)(a)(A) should be revised to address those instances where a facility cannot demonstrate that it withdrawals 100 percent of its intake water containing a pollutant from the "same body of water" into which it discharges its effluent. In such instances, the Department's permit writer should use his or her best professional judgment to delineate what percentage of the intake water is from the same body of water into which the discharge is made and only apply the reasonable potential analysis to the flow-weighted proportion of the intake that is NOT from the "same body of water." This revision is necessary to ensure a permittee is not penalized in the reasonable potential analysis simply because a portion of its intake water comes from groundwater sources that may be geologically isolated from the receiving water body.

In light of these comments, the City recommends that Section (2) of the intake rule be revised as follows:

(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 ***or applicable basin or site-specific criteria*** *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, ***or if a facility cannot make this demonstration, the Department will use its best professional judgment to delineate what percentage of the intake water is from***

the same body of water into which the discharge is made and only apply the reasonable potential analysis to the flow-weighted proportion of the intake that is not from the same body of water;

Revisions & Clarifications to OAR 340-045-0105(3)

The City requests the Department to make the following five revisions and two clarifications to Section (3) of the intake credit rule. The City's proposed textual changes to the rule to reflect these comments are presented further below.

1. Section (3)(a) should be revised to insert a "(3)" in lieu of "III." This revision will ensure readers know which provision of the intake credit rule is being referenced.

2. Section (3)(a)(A) should be revised to address instances where a facility cannot demonstrate that it withdrawals 100 percent of its intake water containing a pollutant from the "same body of water" into which it discharges its effluent. In such instances, the Department should still consider pollutants in intake water when developing water quality based effluent limits, despite the fact that a permittee may not be able to demonstrate that 100 percent of its intake water is hydrologically connected to the receiving water body. This would be consistent with the federal intake credit rule. *See* 40 C.F.R. § 122.45(g)((4) ("Credit shall be granted only if the discharger demonstrates that the intake water is drawn from the same body of water into which the discharge is made. The Director may waive this requirement if he finds that no environmental degradation will result.")

3. Section (3)(a)(D) and (3)(b) should be revised to address instances where a facility does increase the identified intake pollutant concentration at the point of discharge. In such instances, an increase in concentration of the intake pollutant should be allowed if the Department makes a finding that the increased concentration does not cause or contribute to an increase of over 3 % in the background concentration of the receiving water body after completely mixing with 100 % of the receiving water body as calculated using the most recent 10 year harmonic mean flow of the receiving water body.

4. Section (3)(c) should be revised to provide permitee's additional "intake credits" if the permitee's wastewater collection system intercepts, treats, and reduces the level of naturally-occurring pollutants such as arsenic in groundwaters that would otherwise enter a water body at higher levels.

5. The intake credit rule should be revised to clarify that an intake credit lasts for the duration of the permit. Further, if the permit is administratively extended, the intake credit will continue to be in effect during the period of the administrative extension.

6. The City requests clarification as to the meaning or intent of Section (3)(e) of the intake credits rule. That provision states "[w]here 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." Please clarify the circumstances under which this provision would be used. Please also clarify whether this provision can be used to address instances where a permittee draws groundwater into its intake from multiple groundwater sources and where some of those sources may not be hydrologically connected to the receiving water body.

7. The City requests clarification as to the meaning or intent of Section (3)(h) of the intake credits rule. This provision states: "(h) When determining whether WQBELs are necessary, information from chemical-specific, whole effluent toxicity and biological assessments shall be considered independently." It is unclear from the provision whether a WQBEL could be deemed necessary based on any one of these forms of information, or whether all forms of information must be considered. Please clarify the meaning or intent of this provision.

In light of these comments, the City recommends that Section (3) of the intake rule be revised as follows:

> *(a) The Department may consider pollutants in intake water as provided in this Section* ***~~III~~ (3)*** *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;* ***or***
> >
> > *(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,* ***however, an increase in concentration is allowed if the Department makes a finding that the increased concentration does not cause or contribute to an increase of over 3 % in the background pollutant concentration in the receiving water body after completely mixing with 100% of the receiving water body as calculated using the most recent 10 year harmonic mean flow of the receiving water body***; 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. ***However, a*** ~~*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.* ***A discharger may also increase the concentration of a pollutant in its intake water if the Department makes a finding that the increased concentration does not cause or contribute to an increase of over 3 % in the background pollutant concentration of the receiving water body after completely mixing with 100% of the receiving water body as calculated using the most recent 10 year harmonic mean flow of the receiving water body.***

*(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****; however, these limitations will also provide an intake credit to account for a pollutant that is intercepted by a permitee's collection system and treated by the permittee where such pollutant would otherwise enter a water body at a higher level****.*

...

(j) Once an intake credit is issued and incorporated into a permit, the intake credit lasts for the duration of the permit. If the permit is administratively extended, the intake credit will continue to be in effect during the period of the administrative extension.

F. DEQ should clarify how the criteria for methylmercury will be converted into NPDES effluent limits.

The Department's existing human health criterion for total mercury is being replaced in the proposed rules by a criterion for methylmercury expressed as mg/kg. *See* Proposed Toxics Table 40, page 6, No.85. Under the existing criterion for total mercury, permittees could readily determine what potential effluent limits would be in their permit. By contrast, the new criterion (based on methylmercury) would likely be measured as a concentration of methylmercury in the tissue of a fish specimen. This new criterion may be useful to determine if a water body is potentially impaired and should be listed on the State's Section 303(d) list, but it is unclear how this criterion would be applied by a permit writer when establishing permit effluent limits. The

Department should clarify in the rule or its response to public comments how the criteria for methylmercury will be translated into NPDES effluent limits.

G. DEQ should clarify that, under certain circumstances, permittees can use flow augmentation to reduce toxic substances concentrations in the effluent and to meet water quality criteria.

The Department should clarify that, under certain circumstances, if a permittee cannot reasonably meet a water quality based effluent limit derived from the Department's revised water quality standards, the permittee can use flow augmentation to meet such effluent limits. This is consistent with EPA's rule on flow augmentation. 40 CFR § 125.3. This rule (reproduced below) discusses flow augmentation in the context of technology-based treatment requirements in permits, but flow augmentation is also relevant to water quality based effluent limits.

> (f) Technology-based treatment requirements cannot be satisfied through the use of "non-treatment" techniques such as flow augmentation and in-stream mechanical aerators. However, these techniques may be considered as a method of achieving water quality standards on a case-by-case basis when:
>
> (1) The technology-based treatment requirements applicable to the discharge are not sufficient to achieve the standards;
>
> (2) The discharger agrees to waive any opportunity to request a variance under section 301 (c), (g) or (h) of the Act; and
>
> (3) The discharger demonstrates that such a technique is the preferred environmental and economic method to achieve the standards after consideration of alternatives such as advanced waste treatment, recycle and reuse, land disposal, changes in operating methods, and other available methods.

40 CFR § 125.3 (emphasis added).[3] In some cases, the most cost-effective and environmentally preferable means to achieve in-stream criteria for toxic substances may be through flow augmentation (such as addition of water from another source).

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[3] *See also* OAR 340-041-0028(12)(i) (emphasis added), which authorizes flow augmentation to meet temperature criteria: "Compliance Methods. Anthropogenic sources may engage in thermal water quality trading in whole or in part to offset its temperature discharge, so long as the trade results in at least a net thermal loading decrease in anthropogenic warming of the water body, and does not adversely affect a threatened or endangered species. Sources may also achieve compliance, in whole or in part, by flow augmentation, hyporheic exchange flows, outfall relocation, or other measures that reduce the temperature increase caused by the discharge."

Conclusion

The City has raised a number of comments to revise or clarify provisions in the Department's NPDES implementation policies. The City raises these comments largely because it is situated in a region of the State where naturally elevated levels of arsenic and phosphorus may require it to use these implementation policies when its permit is re-issued. The City appreciates the Department's efforts to develop and promulgate the proposed implementation policies prior to initiating efforts to revise and reissue the City's NPDES permit.

Sincerely,

Mark Willrett, P.E.
Director of Public Works
City of Klamath Falls

c: Steve Higgs
Dick Nichols