3. Variances

One of the existing tools being discussed with the RWG is variances, which essentially allow a short-term exemption to facilities from meeting 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 help facilities comply with very low toxic criteria levels, while improving water quality.

Oregon's existing water quality standards include an authorizing provision allowing variances to be granted. However, no variance has ever been sought for or granted to a facility in Oregon. DEQ's objective for these revisions is to revise current variance rule language to streamline the administration process, and to provide specific milestones that will result in water quality improvement through its implementation and add general clarification to the rule.

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; and
- Promote certainty in the variance process by ensuring that variances can be granted within a reasonable time frame.

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.
4. Describe how DEQ will coordinate internally and with EPA to foster predictable and timely processing and decisions on variance requests (a separate interagency agreement is recommended).

A. Description of Tool

Definition

A variance is a short-term exemption from meeting water quality standards which would otherwise be applicable to an individual discharger.

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

- A variance is granted for a specific pollutant(s) and does not otherwise modify the standards. 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 the standard upon the expiration of this time period or must make a renewed demonstration of "unattainability."

Feasibility Demonstration

In granting a variance, a demonstration is required to show that attaining the designated use is not feasible based on one or more of the grounds outlined in 40 CFR 13 1.10(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 Act would result in substantial and widespread economic and social impact.

B. Applicability/Scope

Revisions to the regulatory language will apply to both aquatic life and human health criteria. The most common circumstances under which DEQ anticipates receiving variance requests include: (1) circumstances where 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) circumstances in which technology has not yet been proven to consistently remove contaminants to the level needed; and, (3) circumstances where implementation of controls more stringent than technology-based requirements would result in substantial and widespread economic and social impact.

Information here from SAIC report? [Based on extrapolating the number of facilities sampled in the SAIC Report, DEQ may expect to receive approximately 40 requests for a variance under the current criteria, and an additional 16 under the proposed criteria.]

C. DEQ Recommendation

Under appropriate circumstances, variances can be used as an implementation tool to allow facilities to remain in compliance with more stringent proposed water quality toxics criteria for human health for a number of reasons. Variances are a legal tool under both the CWA, as well as under current state water quality standard rules. Although not all states are implementing variances, there are a number of states which employ variances and have been approved by EPA. DEQ acknowledges that there has not been a proven track record of approving and implementing variances in Oregon; however, DEQ and EPA will be working very closely to assure timely approvals of variances and developing a common understanding of the underlying justification factors leading to a variance request.

DEQ proposes to include a requirement that pollutant minimization plans (PMPs) be a required element of variance to assure pollutant loadings are reduced to the maximum extent practicable. This requirement will provide a tool for making environmental progress where possible, even if dischargers are unable to achieve permit limits required to meet the criterion in the short term. Variances can also provide a "bridge" if additional data or analyses are needed before Oregon can make a complete a TMDL 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 receiving waterbody continues to maintain the underlying water quality standards, even if specific elements cannot be achieved by an individual facility in the short term. Maintaining the current water quality standards allows for the possibility of developing more advanced pollutant reduction treatment technologies in the future that could also be less costly.

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 discharger compliance with a specific water quality standard is demonstrated to be infeasible within the meaning of 40 CFR § 131.10(g);

- maintains original standards as goals rather than removing designated uses and associated criteria that may be ultimately attainable;

- ensure the highest level of water quality achievable during the term of the variance;

In recent years, states have also utilized the flexibility available through variances to include additional requirements during the variance period for achieving source reduction through implementation of pollutant minimization plans (PMPs). DEQ proposes to include a requirement that pollutant minimization plans (PMPs) be a required element of variance to assure pollutant loadings are reduced to the maximum extent practicable during the term of the variance. DEQ views PMPs as an important component of a pollution reduction strategy. PMPs will be discussed later on in this section and in greater detail through a separate IMD.

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 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 in submitting and approving a variance could be cumbersome.
2. Although variances are currently allowed in DEQ regulation, the Department 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 OR.
4. Some dischargers do not like the perception as being seen as "out of compliance", particularly in circumstances where background concentrations of pollutants contribute to WQBEL exceedance and are not wholly attributed to point source discharges.

Alternatives Considered

Many people frequently 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 which 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. Where the intake water contains pollutants at levels that exceed water quality criteria, facilities which use and discharge that intake water would most likely have reasonable potential for that pollutant, unless an intake credit was applied.

General permits which physically separate process and non-process waters may be allowed in certain circumstances to prevent a violation of water quality standards, thereby avoiding a request for a variance. The proposed "*de minimus*" concept allows some increase in discharge concentration at end of pipe, as long as the mass of the pollutant does not increase. This concept is still being discussed by the work group, DEQ, and EPA as to what is considered an "insignificant" increase in concentration and if this increase in concentration is still protective of the designated use.

Summary of RWG Discussion and Views

There has been a substantial amount of discussion with work group members over the past year on the topic of variances. The majority of work group members have some level of concern about implementing variances, primarily focusing on issues, such as lack of a track record in Oregon, EPA approval requirement, and a "slippery slope" perception of legally allowing water quality standard exceedances. Environmental

representatives have provided both verbal and written comments to DEQ in regards to interpretation of certain regulatory language. In response, DEQ has provided a response (i.e. "variance decision memo") to some of the major comments received from these groups. Please see Appendix X for the responses to these concerns.

Industrial representatives have expressed concerns on whether or not their industries would meet any of the six justification factors at 40 CFR 131.10(g). In particular, 131(g)(6) which discusses substantial and widespread economic impacts associated with controls more stringent than those 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 based on their products may not have widespread impacts to the local economy or are not as easily definable as an expected rate increase to ratepayers. Thus, industrial representatives have emphasized that they need assurances that the background issue can actually be resolved through the variance process.

Representatives from ACWA also have reservations regarding the use of variances and have submitted an alternative pollution prevention compliance tool to variances (this tool will be discussed at the May 20 meeting). Below is an excerpt taken from ACWA's proposal[1]:

> "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."

EPA is generally supportive of using variances as a compliance tool to help meet the CWA. EPA staff have stated that they are committed to the variance process and will work to assure timely completion of variance review and approval.

F. Proposed Rule Language

340-041-0059

Water Quality Variances

[Inclusion of language to clarify intent and policy will be added here— *i.e. provides a temporary mechanism by which permits can be written to meet a modified water quality standard, encourages maintenance of original standards as goals rather than removing designated uses and associated criteria that may be ultimately attainable, ensures the highest level of water quality achievable during the term of the variance, etc.***]**

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

(1) Applicability. The Commission or Department may grant point source variances from the water quality standards in this Division where the requirements in sections (1) through (8) of this Rule 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) The standard will be attained by implementing technology-based effluent limits required under sections 301(b) and 306 of the federal Clean Water Act, and by the discharger implementing cost-effective and reasonable best management practices for nonpoint source control;

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

(D) A source requesting a variance is a new facility, unless a proposed variance for a new facility:

(i) Prevents or mitigates a threat to public health or welfare;
(ii) Provides a net environmental benefit; or
(iii) Remediates 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).

(2) Conditions to Grant a Variance. Before the Commission or Department may grant a variance, the permittee must demonstrate that a loss of an existing use would not result from the granting of the variance and 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.

(3) Variance Duration.

(a) The duration of the variance period must be specified as part of each variance and shall not exceed the term of the NPDES permit. The variance shall remain in effect in the event that a NPDES permit is administratively extended, as long as the discharger submits to the Director an application for renewal of the NPDES permit and variance at least one hundred eighty days prior to the date of expiration of the NPDES permit. The permittee must be in compliance with the effluent limitation sufficient to meet the underlying water quality standard upon the expiration of the variance.

Deleted: *If the variance term is the same as the permit term, then the variance shall stay in effect as long as the permit is in effect. The permittee must be in compliance with the effluent limitation sufficient to meet the underlying water quality standard upon the expiration of the variance;*

(b) The variance is effective only after EPA approval. The effective date will be specified in a NPDES permit or order.

(4) Variance Submittal Requirements. To request a water quality standards variance, a permittee must submit the following information to the Department for approval:

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

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

(c) A proposed pollutant minimization plan, including proposed pollutant offsets or trading and/or other proposed pollutant reduction activities; unless the Department makes a specific determination that such information is not required.

(5) Variance Permit Conditions.

The Department shall establish and incorporate into the discharger's NPDES permit all conditions necessary to implement the approved variance. Such permit conditions shall, at a minimum, require:

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

(b) The implementation of a pollutant minimization plan, pollutant offsets or trading, and/or other pollutant reduction activities submitted in accordance with section (4)(c) above;

(c) That reasonable progress is made toward attaining the underlying water quality standards through appropriate conditions to be determined by the Department. Such conditions may include, but may not be limited to, requirements for the permittee to conduct additional studies, monitoring or management practices.

(6) Public Notification Requirements.

(a) If the Department proposes to grant a variance, it must provide public notice of the proposed variance and an opportunity for public comment and hearing. The public notice requirement may be satisfied by including the proposed variance in the public notification of a draft NPDES permit;

(b) The Department will publish a list of all variances to state water quality standards that have been granted pursuant to this Rule. Newly granted variances will be added to this list within 30 days of their effective date. The list will identify: the person or entity to which the variance was granted; the underlying water quality standards to which the variance was granted; the water(s) affected; the effective date and duration of the variance; the allowable pollutant limit granted under the variance; and how to obtain additional information about the variance.

(7) Variance Renewals. A variance may be renewed if the permittee makes a renewed demonstration pursuant to section (2) of this Rule that attaining the water quality standard is not feasible, and demonstrates that all requirements of the variance are being met. Renewal of the variance shall be denied if the applicant does not comply with the conditions of the original variance or otherwise does not meet the requirements of this Rule.

(8) 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.

Comment [AM1]: A multiple discharger variance would be done as a separate rule provision if warranted sometime in the future. DEQ has determined that it will not pursue a specific MDV provision as part of this current rulemaking.

Deleted: (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. ¶

G. Authority and Precedence

History of EPA Policy/ Guidance

EPA first formally indicated allowability 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 to 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 1 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, as well as parameters such as 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 general approach and procedures in implementing variances. Detailed guidance will be developed through an Internal Management Directive.

General

Conditions Generally Applicable to All Variances:

- 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 attaining the designated use is not feasible for one of the reasons specified in 40 CFR 131.10(g).
- Generally, the duration of a variance will coincide with a reissuance of a NPDES permit. However, variances will be granted for the minimum amount of time needed. This will be determined based on the justification provided by each applicant and subsequent DEQ approval. 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 request is subject to public notification requirements; DEQ expects that the 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 water body.
- A variance does not exempt the discharger from compliance with applicable technology-based limits or water quality-based limits for other pollutants.
- Sources shall continue to achieve the lowest effluent concentration possible under their current operations and treatment. Where pollutant minimization plans are expected to result in improved

effluent quality, milestones and/or more stringent effluent quality requirements will be incorporated as part of the variance.

- The permittee is required to develop a pollution minimization 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 minimization plans to ensure implementation of the measures described in the plan. If circumstances do not exist to minimize pollution, a pollution minimization plan will not be required.
- The requirements of the variance will be included as conditions of the NPDES permit.
- The variance is effective only after EPA approval.
- The permittee must demonstrate that a loss of an existing use would not result from the granting of the variance
- BMPs that may be implemented by a particular discharger should be implemented either before or as part of the PMP.

Administrative Process

1. Request for Variance

If a facility 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, a discharger may not be able to achieve the WQBEL developed during the Reasonable Potential Analysis 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 facility 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 the use attainability analysis (UAA) provisions at 40 CFR 131.10(g). Another case where a variance may be appropriate is when a facility 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 facility is capable of achieving.

In some cases, the most appropriate long term solution may be a change to the designated beneficial use and applicable criteria through a use attainability analysis (UAA). 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

Comment [AM2]: Will need to re-work this section based on input from permit writer staff

During a pre-application review conference or following the initial review of a permit evaluation, the permittee and permit writer will identify pollutants that will require effluent limits. At that point, the permittee has the option to request a variance, and must be prepared to provide additional documentation, including treatment engineering studies and additional effluent and ambient data[2]. This additional information is needed to support a variance justification for not being able to meet a water quality standard on a short term basis. The permit writer will use the additional information to write a "Variance Evaluation Report" that will summarize the applicable information and provide the justification the Department used to approve the permittee's request for a variance. The Department may request additional information if the supplied information does not adequately support one of the six conditions specified for granting a variance. Generally, the additional information needed would include, but not be limited to:

1. Pollutant source investigation report
2. Intake water source and river mile
3. Receiving waterbody and river mile
4. Water quality standards at issue
   - *designated uses,*
   - *water quality criterion that cannot be fully attained, and*
   - *303(d) listing status and other related information.*
5. Reason for variance request per 40 CFR 131.10(g) and description why compliance with the water quality standards cannot be achieved
6. Water quality data summary
   a. *intake water concentration (if applicable)*
   b. *determination of ambient background concentration for pollutant at issue*
   c. *any other relevant information.*
7. Effluent data summary
   a. *effluent concentration*
   b. *determination of downstream ambient concentration after mixing*
8. Demonstration that advanced treatment technology is necessary to achieve compliance with the water quality standard for which the variance is sought
9. Treatment or alternative options to treatment considered, and justification describing why these options are either not technically feasible or satisfy the condition described at 40 CFR 131.10(g) . This analysis also includes any facility-controlled nonpoint source actions to reduce the pollutant of concern.
10. Proposed duration and justification for the requested variance term
11. Proposed interim discharge limits/conditions representing the lowest level of pollutant(s) achieved during the term of the variance. An interim criterion shall also be determined.
12. Characterization of associated risk to human health and aquatic life as a result of the variance

Comment [AM3]: This report may include some of the numbered items listed below. Right now, the purpose of this section is to try and capture information needed. We'll work on the format of the variance, in terms of the specific requirements, and how to fold it into a NPDES permit during the development of an IMD.

3. DEQ Review and Decision

[2] This data is in addition to the data submitted in the initial permit application or developed by the permit writer.

Once DEQ receives the application, standards and permitting staff will review application for completeness and adequacy and will make approval recommendations to the Director or the Commission. DEQ staff will coordinate its review of the application with the permit development and issuance process. 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.

Comment [AM4]: Various DEQ internal deadlines will be decided at a later date

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 facility's wastewater through the facility's intake water.

   In some cases, dischargers 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 facility 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 this level. Some facilities 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.

   Comment [AM5]: This section (and related sections) will be re-worked to reflect an "evaluation report format" that would be included w/ a NPDES renewal application.

   - Sufficient upstream ambient data to adequately characterize pollutant concentrations.
   - Sufficient effluent and mixing zone (if receiving waterbody is not water quality limited) analysis data.
   - 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 judgement, however, DEQ staff will review the pollutant investigation report to evaluate whether or not the facility 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 developed 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 continue to persist in the environment for many more years and may come from diffuse sources. As with naturally-occurring pollutants, facilities 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 facilities 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 implement or reduce at 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 facility 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 ground water), 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 developed 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.

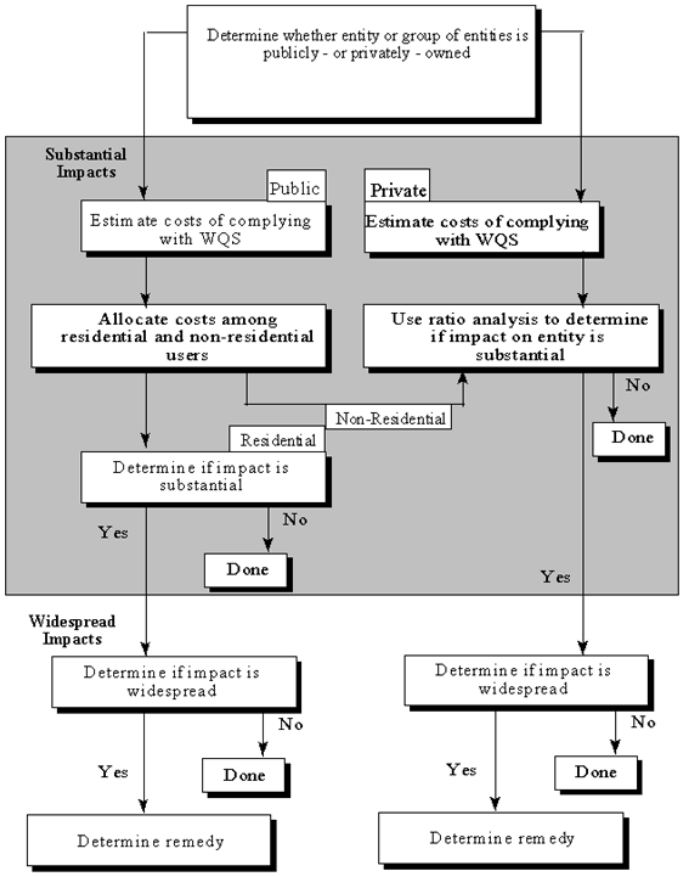
5. ***Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to [chemical] water quality, preclude attainment of aquatic life protection uses; or***

   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 developed 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 which describes 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. 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; however, a justification submitted consistent with this guidance would most likely meet EPA's needs in order to approve a variance under this condition. Below 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 1-1:
Steps in the Economic Impact Analysis
Determining Whether Impacts Will be Substantial and Widespread



4. Public Notification Process

If the Department 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

Individual variances will be approved by action of the DEQ Director. 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 within XXX weeks of the issuance of the variance. EPA standards staff will evaluate the variance package and determine whether or not the documentation supports the proposed 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. 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. EPA and DEQ will work together to develop mutually acceptable timeframes for variance approvals. The effective date of the variance will be no earlier than the date of EPA approval.

6. Public Information on Variances

The Department 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 the DEQ standards website @ XXXXXXXXXX. 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 limit granted under the variance; and (6) where additional information on the variance may be found.

7. Renewal Process

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 the Department will require the permittee to submit information demonstrating that reasonable progress has been made towards achieving the underlying water quality standard.

Requirements and Conditions for a Variance

General

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

1. Demonstrate that advanced treatment technology is necessary to achieve compliance with the water quality standard for which the variance is sought.

2. Describe treatment or alternative options considered to meet water quality standards, and describe why these options are either not technically feasible or how the variance would satisfy the condition described at OAR 340-041-0061(2).

3. Comply with applicable technology-based limits or water quality-based limits for other pollutants.

4. Continue to achieve the lowest effluent concentration possible under current operations and treatment. 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. Where changes in operations or treatment are expected to improve effluent quality, those expected improvements will be reflected in the required effluent concentrations.

5. Describe and implement opportunities to reduce the pollutant of concern. For example, treatment optimization strategies or source reduction opportunities will be implemented where possible. These activities would be included in a Pollution Minimization Plan (PMP).

Pollution Minimization Plan (PMP)

A PMP is required for facilities which request a variance; however, DEQ anticipates that PMPs will be tailored to specific circumstances of each facility. In some cases, PMPs will be quite extensive, depending upon the degree to which the discharger contributes to pollutant loading. In other cases, the contribution could be quite small and the opportunities to reduce pollutant loadings are very 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 PMP 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, the Department would work with the facility to develop a more robust PMP to reduce the pollutant of concern through interim milestones for implementation. PMPs would be reviewed 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 PMP 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 water quality standards may be achieved following implementation, achievement of water quality standards is not an explicit requirement of the PMP. PMP activities could include, but not be limited to the following:

1. **Source Reduction**
   In some cases, a facility 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 facility would need to balance the advantages and disadvantages of using this source. If a facility 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. Facilities 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 facility 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 discharger 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 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 facility 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. A facility could develop interim limits based on 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 low 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