

NORTHWEST ENVIRONMENTAL ADVOCATES



September 28, 2012

Beth Moore
Water Quality Division
Department of Environmental Quality
811 S.W. Sixth Ave.
Portland, OR 97204-1390

Via Email only: moore.beth@deq.state.or.us

Re: **Proposed Water Quality NPDES General Permit for Pesticide Use in Irrigation Systems (2000-J)**

Dear Ms. Moore:

Northwest Environmental Advocates (NWEA) submits these comments on the proposed 2000J permit noting that it is our opinion that the agency should withdraw the proposed permit to address, at a minimum, the incorrect copper effluent limit and re-issue a new proposed permit for public comment.

I. Public Notification

DEQ should require notification to the public of the receipt of an application for coverage under the 2000j general permit. DEQ routinely provides email notifications to the public of proposed authorizations to discharge under Oregon's stormwater general permits. For example, the 1200-C permit gives the public 14 days to review and comment on proposed authorizations. Therefore, DEQ's choice to not provide the same email notifications to the public for the proposed 2000J permit is a policy choice. As it is neither burdensome nor impossible for the agency to send out such proposed authorizations to discharge acknowledged poisons to public waters, DEQ should do so. The reasons are simple: DEQ has not provided sufficient information in the proposed permit to constitute effluent limits, the permittees that will be authorized to discharge pursuant to the permit will be restricted by effluent limits in their Vegetation Management Plans that are currently not proposed to be provided to the public, DEQ has inadequate information on whether there are designated or existing uses that require protection within the very large areas that this permit proposes to cover. Moreover, without such notification, the public has no way of alerting DEQ to the possibility that it is about to authorize an impermissible discharge.

Schedule B, Condition 4 contains a Notice of Intended Use but this provision does not require that the permittee provide the public with a map of the treatment area or access to the Vegetation Management Plan that defines the treatment area along with numerous other effluent limits. This condition should be revised to reflect these public notification requirements.

A. NWEA's Experience with the 2300A Permit

NWEA has had recent experience with the 2300A permit with regard to DEQ's inability to know whether it should authorize a discharge pursuant to a pesticide general permit. As the letters¹ attached demonstrate, the fact that NWEA became aware – from no effort on the part of DEQ – of an application for authorization to discharge pursuant to the 2300A permit, allowed NWEA to bring numerous issues to the attention of DEQ. Among these issues were the presence of an existing and designated use that was not adequately protected from the authorized discharge, the existence of an applicable Total Maximum Daily Load (TMDL), and the lack of proper local government authorizations. DEQ both denied the authorization initially and, after subsequently granting authorization, granted NWEA's later request for reconsideration. While this matter has not been resolved, DEQ's actions in both instances demonstrate that NWEA was able to bring issues to the attention of DEQ that the agency had reason to believe were substantive or legal issues that warranted further consideration and/or limitations on the proposed discharge.

DEQ should do no less here, not leaving to chance, as was our experience with the 2300A permit, that members of the public have vital information on whether a proposed discharge will be consistent with the permit terms.

B. Vegetation Management Plans Must be Provided for Public Review

As discussed below, the required Vegetation Management Plans (VMP) are effluent limits and as such must be provided to the public for public comment prior to authorization under the proposed general permit.

II. Vegetation Management Plans are Illegal Effluent Limits

DEQ has cleverly termed the self-designed effluent limits in the proposed permit as "Vegetation Management Plans" (VMP). This term suggests that the plans themselves are not effluent limits. However, because they are in fact effluent limits, they are impermissible in two regards. First, by letting the permittee define both the treatment area and treatment period, DEQ has established an impermissible permitting scheme in violation of Ninth Circuit and Second Circuit case law.²

¹ Letter from Nina Bell, NWEA to Greg Geist, Northwest Region, DEQ *Application for Coverage Under General Permit NPDES No. 2300A by Fairview Lake Property Owners Association; Proposed Use of Fluridone on Fairview Lake and Upper Slough* (February 17, 2012); Letter from Nina Bell, NWEA to Dick Pedersen, Director, DEQ *Petition for Reconsideration of May 15, 2012 Letter Approving Coverage Under the NPDES General Permit 2300A for the Fairview Lake Property Owners Association* (June 20, 2012); Letter from Nina Bell, NWEA to Dick Pedersen, Director, DEQ *Addendum to Petition for Reconsideration of May 15, 2012 Letter Approving Coverage Under the NPDES General Permit 2300A for the Fairview Lake Property Owners Association* (July 17, 2012).

² *Env'tl. Def. Ctr., Inc. v. U.S. Env'tl. Protection Agency*, 344 F.3d 832, 855 (9th Cir. 2003)(rejecting EPA stormwater rules that allow a discharger to decide for itself what reductions in discharges are sufficient); *Natural Res. Def. Council*, 966 F.2d 1305 (rejecting as arbitrary and capricious a permitting system that allowed regulated industrial stormwater dischargers to "self-report" whether they needed permit coverage).; *Waterkeeper Alliance, Inc. v. U.S. Env'tl.*

DEQ must supply its own, scientifically-supported determinations for what waters are waters of the United States for which the limitations in Schedule A Condition No. 1 effluent limits apply, not allow a discharger to make that decision and to make that decision without public notice. Likewise, DEQ must determine, based on the dilution information that the permittee must gather pursuant to Schedule D Condition No. 4, the limits on the herbicides that may be discharged as authorized by the permit. It is impermissible for DEQ to allow the discharger to set its own effluent limits through this and other permit provisions.

Second, the VMP establishes restrictions on discharges authorized by the proposed permit rendering those restrictions effluent limitations that both must be a part of the permit and must be subject to public and permit writer review.³ In its Fact Sheet⁴ DEQ copies out a lengthy portion of EPA's justification that the Pesticide Discharge Management Plan (PDMP) associated with the federal permit does not constitute effluent limitations similar to the CAFO permit in *Waterkeeper Alliance, Inc. v. U.S. Env'tl. Protection Agency*, cited above, arguing that the effluent limitations are "independent" of the PDMP's "documentation and recordkeeping requirements regarding implementation of the limitations." EPA claims that the PDMP is not a limitation and does not itself impose requirements on discharges.

DEQ fails to describe its own permit in the Fact Sheet and explain why portions of its VMP do not constitute effluent limits. While it is true that the VMP contains reporting requirements that are not effluent limits, the fact that DEQ has placed other provisions within the context of reporting requirements does not render those provisions into reporting requirements themselves. Nor does the placement of what would otherwise be effluent limitations in a different part of a permit render effluent limits something other than effluent limits. In fact, the VMP violates the Clean Water Act by both impermissibly allowing permittees to establish their own technology- and water quality-based effluent limits without permitting agency review and authorization and by withholding those effluent limits from public review and comment.

The VMP contains all the relevant information needed to determine which specific limitations are required by the discharger. The VMP "must include a description of the action thresholds."⁵ Schedule D defines "action thresholds" as

The point at which pest populations or environmental conditions can no longer be tolerated, necessitating that pest control action must be taken based on economic, human health, aesthetics, or other effects. . . . An action threshold may be based on current or past environmental factors that are or have been demonstrated to be conducive to pest emergence or growth, as well as past or current pest presence. Action thresholds are those conditions that indicate both the need for control

Protection Agency, 399 F.3d 486, 2005 (failure to provide for permitting authority review of nutrient management plans violates statutory requirement that permits ensure compliance with limits and standards).

³ See *Waterkeeper Alliance, Inc. v. EPA*, 399 F.3d 486 (2nd Cir. 2005).

⁴ DEQ, *2000-J Permit Evaluation Report*, July 20, 2012.

⁵ Proposed Permit, Schedule D, Condition 2.b.ii.

actions and the proper timing of those actions.⁶

Practically speaking, it is the VMP that in establishing the action thresholds determines the frequency of discharges authorized by the permit, the timing of those discharges, and the amount of the discharges. Contrary to EPA's view, set out in the DEQ Fact Sheet, that its PDMP is not an effluent limitation because it does not "restrict quantities, rates, and concentrations of constituents that are discharged," DEQ's VMP does restrict quantities, rates and likely concentrations of pesticides used by the permittee albeit quantities, rates, and concentrations that are self-determined and therefore legally impermissible.

Moreover, it is the VMP that establishes the waters into which the permit holder may discharge by its requirement that the permit holder develop a "general location map that identifies the geographic boundaries of the irrigation system to which the VMP applies, the anticipated treatment areas and locations of natural waters."⁷ The definition of "treatment area" is key to meaning of the water quality-based effluent limitations set out in Schedule A which allow for violations of water quality standards within the treatment area during treatment.⁸ There is no other portion of the permit in which DEQ explains where this effluent limit applies other than the permittee-generated VMP. The same is true of Condition 2.b.iv of the VMP which excludes water quality limited waters from authorization to discharge under the permit. As such, this condition constitutes a water quality-based effluent limitation.⁹ Even the permit itself acknowledges that this is a binding limitation on discharges by discussing it in the section entitled "Coverage and Eligibility."¹⁰

The VMP also includes a requirement for "pest management options" that "will be implemented to comply with the effluent limitations required in Schedule A. The permit registrant shall include in the description the active ingredients evaluated for pesticide use."¹¹ In other words, the VMP establishes which pollutants will be discharged pursuant to permit coverage,¹² how

⁶ Proposed Permit, Schedule D, Definitions.

⁷ Proposed Permit, Schedule D, Condition 2.b.iii.

⁸ Proposed Permit, Schedule A, Conditions 1.a & b.

⁹ See e.g., EPA, *Fact Sheet, The United States Environmental Protection Agency (EPA) Plans To Issue A National Pollutant Discharge Elimination System (NPDES) General Permit To: Small Suction Dredge Miners in Idaho* at 8-9, available at http://www.epa.gov/region10/pdf/permits/npdes/id/id_suction_dredge_gp_fs_idg370000.pdf.

¹⁰ Proposed Permit, pages 2-3. Condition D.2.

¹¹ Proposed Permit, Schedule D, Condition 2.c.

¹² See also Proposed Permit, Schedule D, Condition 2.d.i ("List of proposed pesticides to be applied[.]").

much and how often the pollutants will be discharged,¹³ and what best management practices will be used to meet permit conditions, practices which themselves constitute effluent limits. As DEQ knows, EPA regulations allow permits to include practices in lieu of numeric effluent limits and where “practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA.”¹⁴ Here, the VMP practices are the site-specific limitations that are necessary to meet the other effluent limitations in the permit and thus constitute themselves effluent limitations.

Similarly a number of other provisions in Schedule D constitute effluent limitations including a provision that establishes where the Schedule A Conditions 1 a and b apply: Condition 2.g. that documents mechanisms that “prevent fish from entering the treatment area.” Condition 3.b also constitutes an effluent limitation because it requires modification of the existing limits in the VMP pursuant to Schedule A Condition 3.a.ii which requires corrective action to respond to a “discharge that causes or contributes to a violation of water quality standards.” Any modifications to practices that are consistent with the Condition 1.a in Schedule A that prohibits the authorized discharge to cause or contribute to a violation of water quality standards is itself such a water quality-based effluent limit, regardless of what schedule it is in or what it is called. Likewise Condition 2.c. of Schedule D, requires the permittee to modify the VMP to reflect a decision to “change[] the type or quantity of pollutants discharged.” By its own clear terms, this constitutes a change to the effluent limitations of the permit.

The high level of integration between the VMP and the Schedule A Waste Discharge Limitations demonstrates that the VMP contains effluent limits. Schedule A includes Condition 3 which requires a permittee to take corrective actions in various circumstances. One circumstance is that the permittee has “fail[ed] to follow pest management measures.”¹⁵ A “pest management measure” is defined in Schedule D as “any practice used to meet the effluent limitations that comply with . . . relevant legal requirements and other provisions . . . to reduce and/or eliminate pesticide discharges to waters of the state.” A relevant legal requirement is the conditions in Schedule A, therefore the pest management measures in Schedule D are the practices that are needed to meet Schedule A and are, therefore, effluent limitations. The VMP contains the pest management measures.¹⁶ The VMP must be updated to include the corrective actions, including changes to the pest management measures, if corrective actions are needed, for example because there has been a “discharge that causes or contributes to a violation of water quality standards” or a permittee has “fail[ed] to follow pest management measures.”¹⁷ Likewise Schedule A’s Waste Discharge Limitations specifically call for the permittee to “make sure that changes to the pest management measures are made before proceeding with any pesticide application” if any

¹³ See also Proposed Permit, Schedule D, Condition d.d.ii (“Application Rate and Frequency”).

¹⁴ 40 C.F.R. § 122.44(k)(4).

¹⁵ Proposed Permit, Schedule A, Condition 3.a.iii.

¹⁶ Proposed Permit, Schedule D, Condition 2.d.

¹⁷ Proposed Permit, Schedule A, Condition 3.a. ii & iii.

corrective action is required.¹⁸

Finally, as effluent limits, the VMPs must be submitted to DEQ and made available to the public for comment prior to authorization to discharge, and not held solely on site by the permittee. As proposed, the lack of agency and public access to each VMP would preclude any meaningful ability for agency and citizen oversight and enforcement of the VMP requirements which are key limitations to the authorization to discharge pursuant to this permit. These reports should be submitted electronically along with an Notice of Intent, and made electronically available for public review and oversight. This can be done, as has been in numerous other permit contexts, without requiring the disclosure of any confidential business information.

III. DEQ Should Withdraw the Proposed Permit Because it Fails to Incorporate Restrictions Necessary to Comply with the National Marine Fisheries Service Biological Opinion on Copper

A. DEQ Cannot Rely on Oregon's Numeric Copper Criteria

Oregon's water quality criteria for copper for the protection of freshwater aquatic life are 18 µg/L for acute exposure and 12 µg/L for chronic exposure, based on a water hardness of 100 mg/L.¹⁹ Expressed as a function of hardness, the Table 20 criteria are acute criterion is = $(\exp(m_A * [\ln(\text{hardness})] + b_A)) * CF$ where $m_A = 0.9422$ and the b_A is = -1.464 and the chronic criterion is = $(\exp(m_C * [\ln(\text{hardness})] + b_C)) * CF$ where the $m_C = 0.8545$ and the b_C is = -1.465. The Environmental Quality Commission adopted aquatic life criteria for copper on May 20, 2004 which have not yet been approved by EPA, pending consultation under the Endangered Species Act.²⁰ These criteria are expressed as a function of hardness and set out in footnote F where the acute criterion is = $(\exp(m_A * [\ln(\text{hardness})] + b_A)) * CF$ where $m_A = 0.9422$, the b_A is = -1.700, and the CF is 0.960 and the chronic criterion is = $(\exp(m_C * [\ln(\text{hardness})] + b_C)) * CF$ where the $m_C = 0.8545$, the b_C is = -1.702, and the CF is 0.960. For comparison, using a water hardness of 100 mg/L, the Table 33B criteria are 13.4 µg/L for acute exposure and 9.0 µg/L for chronic exposure.

On August 14, 2012 the National Marine Fisheries Service (NMFS) issued a biological opinion ("BiOp") on some of Oregon's aquatic life criteria.²¹ The relevant aspects of this BiOp with regard to the proposed 2000j permit is the NMFS finding of jeopardy and adverse modification of critical habitat for both the acute and chronic criteria for copper from Table 33B based on the fact that Oregon's criteria "cause significant adverse toxicological and biological effects on the

¹⁸ Proposed Permit, Schedule A, Condition 3.b.

¹⁹ OAR 340-041, Table 20.

²⁰ OAR 340-041, Table 33B.

²¹ NMFS, *Jeopardy and Destruction or Adverse Modification of Critical Habitat Endangered Species Act Biological Opinion for Environmental Protection Agency's Proposed Approval of Certain Oregon Administrative Rules Related to Revised Water Quality Criteria for Toxic Pollutants*. NMFS Consultation Number: 2008/00148.

listed species considered in this opinion.”²² NMFS, with the agreement of EPA, was able to identify alternative numeric criteria for both copper criteria.²³ Accordingly, the Reasonable and Prudent Alternative (“RPA”) established in the BiOp is that EPA is required and may have agreed to disapprove Oregon’s acute criterion of 13 µg/L (100 mg/L hardness) and recommend a new acute criterion of 2.3 µg/L criterion. For Oregon’s chronic criterion, EPA should disapprove the current 9 µg/L criterion and recommend a new chronic criterion of 1.45 µg/L. NMFS concludes that the recommended criteria will be “likely to avoid adverse chemosensory and behavioral effects to juvenile salmonid fishes” and that the chronic criterion is “unlikely to appreciably affect invertebrate productivity and abundance.”²⁴

DEQ’s Fact Sheet discusses copper to a very limited extent. It notes that Oregon’s water quality criteria for human health are vastly higher than aquatic life criteria and states that

Oregon’s water quality criteria for copper for the protection of freshwater aquatic life are hardness dependent: 18 µg/L (0.018 mg/L) for acute exposure and 12 µg/L (0.012 mg/L) for chronic exposure are based on a water hardness of 100 mg/L (OAR 340-41, Table 20). With a decrease in water hardness (measured as CaCO₃), copper toxicity increases.²⁵

DEQ’s Fact Sheet does not reflect the information on effects of copper on threatened and endangered species nor does it reflect the RPAs in the NMFS BiOp. As a consequence, DEQ “is proposing to maintain the individual permit limit on copper. The 12 µg/L maximum daily copper limit is in keeping with the previous permit limits for the individual irrigation district permits and is based on a hardness of 100 mg/L.”²⁶ Now, however, DEQ is now in receipt of information that it must use to interpret and apply its narrative criteria for toxics that supersedes the numeric criteria which it now knows are not protective of the species. These criteria state that

Toxic substances may not be introduced above natural background levels in waters of the state in amounts, concentrations, or combinations that may be harmful, may chemically change to harmful forms in the environment, or may accumulate in sediments or bioaccumulate in aquatic life or wildlife to levels that adversely affect public health, safety, or welfare or aquatic life, wildlife, or other designated beneficial uses.²⁷

* * *

The creation of tastes or odors or toxic or other conditions that are deleterious to

²² *Id.* at 547.

²³ *Id.* at 548.

²⁴ *Id.* at 554.

²⁵ Fact Sheet at 17.

²⁶ *Id.* at 18.

²⁷ OAR 340-041-0033(2).

fish or other aquatic life ... may not be allowed.²⁸

The NMFS BiOp provides DEQ with sufficient information to interpret and apply its narrative criteria because DEQ's narrative criteria preclude the discharge of copper in amounts or concentrations that may be harmful to aquatic life and NMFS has found that criteria at the current EPA-approved numeric criteria are, in fact, harmful in violation of OAR 340-041-0033(2). In addition, a copper effluent limit based on the current copper criteria will allow the the creation of odors and toxic conditions that are deleterious to fish that are not allowed pursuant to OAR 340-041-0007(11). As the NMFS BiOp explains

Copper has been known to disrupt the normal function of the olfactory system in salmonids for over 45 years (Sprauge et al. 1965, Hara et al. 1976). More recent studies using EOGs and EEGs have shown disruption at concentrations of dissolved copper at or slightly above background concentrations (Baldwin et al. 2003, Sandahl et al. 2004). Hecht et al. (2007) defines background as surface waters equal to 3 µg/L dissolved copper, since experimental waters had background concentrations as high as 3 µg/L dissolved copper. There have been mixed results as to whether certain fish species are more sensitive than others to the olfactory neurotoxicity of copper. In experiments using EEG recordings, Hansen et al. (1999a) found that rainbow trout (*O. mykiss*) were more vulnerable than juvenile Chinook salmon (*O. tshawytscha*). Thus, while there may be modest differences in sensitivity for some species, the available evidence suggests that copper is a general olfactory toxicant for all freshwater fish. Although chemoreception is probably a fundamental function in most, if not all, fishes (Tierney et al. 2010), many of these studies evaluated copper avoidance or copper-induced olfactory impairment in salmonid fishes (e.g., Hansen et al. 1999a,b; Baldwin et al. 2003, 2011; Sandahl et al. 2007; McIntyre et al. 2008a).

Most behavioral studies on toxicity to chemoreception (i.e., avoidance, food attraction, and alarm response) are problematic because it is difficult to separate olfactory toxicity from other forms of toxicity (Tierney et al. 2010). Behavioral responses can integrate many inputs, which may introduce uncertainty when attributing olfactory impairment to altered behavioral responses (Tierney et al. 2010). A few olfactory toxicological studies have related effects across organizational levels and these can be divided into two categories: 1) those that relate changes in electrochemical responses to physiological responses or to behavioral responses; and 2) those that relate olfactory-mediated physiologic responses to behavioral responses (Tierney et al. 2010). For copper, Sandahl et al. (2007) demonstrated that the relationship between loss of sensory function (EOG) and behavioral impairment was highly correlated. Alarm pheromone (a substance released during fish injuries) triggered an average reduction in swimming speed of 74% and elicited a mean EOG response of 1.2 mV in unexposed salmon. Salmon exposed to 2 to 20 µg/L copper exhibited reductions in both EOG (50-92%) and in alarm response (Hecht et al. 2007, Sandahl et al. 2007). Statistically significant reductions in EOG response to skin extract occurred at all concentrations tested (2, 5, 10, and 20 µg/L copper), while no significant reductions in swimming speed

(majority of fish did not become motionless) occurred at higher copper concentrations (5, 10, and 20 $\mu\text{g/L}$; Sandahl et al. 2007). In fish, direct exposure to dissolved copper can impair and destroy ORNs, although the precise mechanism remains unknown (Hecht et al. 2007).

Given the importance of sensory perception, impaired olfaction may in many cases be of more immediate survival concern than other physiological impairments (Tierney et al. 2010). The studies reviewed in this section illustrate several important aspects of copper toxicity to the olfactory system: 1) neurotoxic effects of copper can occur within minutes of exposure; 2) low concentrations can elicit responses; 3) at low concentrations, inhibition is transient and recovery can be seen within hours or when the toxicant is removed; and 4) incomplete or time-sensitive recovery of olfactory system to food-based, conspecific and predator-related odors, and reproductive pheromones.

Several studies indicate that thresholds exist between neurological, physiological and behavioral responses, and more than sufficient information exists to indicate that for fishes, olfaction is indispensable and sensitive to contaminants. Tierney et al. (2010) reviewed the ramifications for extrapolating neurological and physiological data to behavioral and ecological impacts as straightforward: lower order measures (e.g., EOG) may underestimate the impact of toxicity to higher order biological responses (e.g., mating). Tierney et al. (2010) report that setting regulations below where negative responses are observed in olfactory-based systems is not warranted until effects relevant to populations are better established.²⁹

McIntyre et al. (2012) calculated survival probabilities for copper exposures relative to controls for coho salmon that ranged from 10 percent at 20 $\mu\text{g/L}$ to 17 percent at 5 $\mu\text{g/L}$. McIntyre et al. (2012) also determined that relatively brief (3 hours) exposures to copper ranging from 5 to 20 $\mu\text{g/L}$ eliminated the behavioral alarm response in coho salmon prey, leading in turn to increased detection, reduced evasion, and reduced survival during predation trials. Experimental data suggests that significant amelioration of olfactory toxicity due to hardness is unlikely in typical Pacific salmonid freshwater habitats (Hecht et al. 2007). The experiment showed that hardness at 20, 120, and 240 mg/L Ca (experimentally introduced as CaCl_2) did not significantly protect juvenile coho salmon from olfactory toxicity following 30 minute laboratory exposures to 10 $\mu\text{g dCu/L}$ above an experimental background of 3 $\mu\text{g/L}$ (Baldwin et al. 2003).³⁰

The olfactory effects described by NMFS are precisely those “odors or toxic or other conditions that are deleterious to fish or other aquatic life” that OAR 340-041-0007(11) proscribes.

²⁹ BiOp, *supra* fn 21, at 305-6.

³⁰ *Id.* at 307.

B. DEQ Must Use Applicable Hardness Values for Receiving Waters

DEQ is very clear in its fact sheet that its copper criteria are hardness dependent. Likewise and more important, the criteria themselves are clearly hardness dependent. Table 20 states that the “+” sign next to the numeric criteria indicate that “= Hardness Dependent Criteria (100 mg/L used).” It goes on to state, prior to giving the formulas and values set out above that “[t]he freshwater criterion for this metal is expressed as a function of hardness (mg/L) in the water column. Criteria values for hardness may be calculated from the following formulae[.]”

In the proposed 2000J permit DEQ established its effluent limit for copper using an assumed hardness of 100 mg/L for all waters. This apparently was based on the following analysis:

DEQ is proposing to maintain the individual permit limit on copper. The 12 µg/L maximum daily copper limit is in keeping with the previous permit limits for the individual irrigation district permits and is based on a hardness of 100 mg/L. To develop this hardness, DEQ searched the Laboratory Analytical Storage and Retrieval (LASAR) database (<http://www.deq.state.or.us/news/databases.htm>) for statewide hardness values in ditches, drains, culverts and canals. The average hardness was 140 mg/L. The data ranged from 11 to 580 mg/L. 2002 hardness data for West Extension Irrigation District indicates that hardness in the canal on average was 106 mg/L. Washington state provided the average hardness results in their 2011 irrigation pesticide general permit fact sheet. The fact sheet provided the average hardness from the sampling conducted in irrigation systems. Out of 782 samples, the average hardness was 122 mg/L. Samples results ranged from 10 to 440 mg/L.³¹

The permit calls for a monthly grab sample of hardness “following a copper-based pesticide application” in Schedule B Condition 3.a.ii. There is, however, no requirement that the permittee obtain samples of the hardness of the receiving water into which the pesticide will be discharged *prior* to DEQ’s authorizing the discharge. Nor are there any changes to the effluent limits based on *actual* hardness levels in the receiving water despite the fact that numeric criteria for copper are unambiguously “hardness dependent.” As DEQ states in its Fact Sheet, “a decrease in water hardness (measured as CaCO₃), copper toxicity increases.”³² It is unclear why DEQ believes that it can “develop this hardness,” namely a one-size-fits-all hardness for all waterbodies to which this permit could potentially apply, when its water quality criteria could not be more clear that they are hardness-dependent. The permit does not instruct the permittee to make adjustments to the allowable level of copper-based pesticides based on the actual measure hardness of the receiving water. Nor does the permit require monitoring of hardness in more than one location for the entire area covered by the permit authorization. Both of these failings render the permit illegal.

As quoted above, DEQ has found that hardness values range as low as 11 mg/L in Oregon ditches, drains, culverts, and canals. This is very similar to the lowest value found in Washington which was 10 mg/L. As DEQ observed, these low values increase the toxicity of

³¹ Fact Sheet at 18.

³² *Id.* at 17.

copper. Using the Table 20 values, the criteria derived using a hardness of 11 mg/L would be: 2.2 µg/L acute and 1.8 µg/L chronic. For comparison to the Table 33B/NMFS BiOp values, criteria derived for hardness at 11 mg/L would be 1.7 µg/L acute and 1.4 µg/L chronic. DEQ must use values that provide the appropriate level of protection for all waters, namely the lowest hardness values, or it must ensure that the permit limits are appropriate for each receiving water. It is impermissible to establish one hardness value for waters with such a great range of resulting criteria.

C. DEQ May Not Use the Quantitation Limit in Lieu of Applicable Criteria

According to Schedule B Condition 3.a.ii of the permit, the quantitation limit for copper is 10 µg/L. The NMFS BiOp RPAs require EPA to recommend to Oregon and to promulgate for Oregon in the event of no state action a new acute criterion of 2.3 µg/L criterion and a new chronic criterion of 1.45 µg/L at 100 mg/L hardness. Both of these required criteria are well under the quantitation limit established by DEQ for monitoring the 2000j permit of 10 µg/L.

DEQ has an obligation to require the minimization of copper under this circumstance, particularly since the quantitation limit poses jeopardy to threatened and endangered species. Federal regulations prohibit DEQ from issuing NPDES permits “[w]hen the conditions of the permit do not provide for compliance with the applicable requirements of the CWA, or regulations promulgated under CWA[.]”³³ The Clean Water Act requires, *inter alia*, that permits to discharge pollutants achieve “any more stringent limitation, including those necessary to meet water quality standards[.]”³⁴ Likewise, federal regulations prohibit DEQ from issuing NPDES permits unless permit conditions can “ensure compliance with the applicable water quality requirements” of all affected states.³⁵ Use of an effluent limit that is based on a quantitation limit that is well above the applicable criteria does not ensure compliance with numeric water quality criteria and therefore is inconsistent with the law. Similarly an effluent limit that causes jeopardy to threatened and endangered species does not protect designated uses which are a required part of water quality standards.³⁶

It may also be instructive for the DEQ to look at the Great Lakes Initiative (GLI) regulations, in which EPA created a procedure applicable to setting water quality-based effluent limits below the quantitation level in an area where EPA is more concerned about the effects of toxics, which presumably would also apply where NMFS has found jeopardy.³⁷ GLI Procedure 8 requires the

³³ 40 C.F.R. § 122.4(a).

³⁴ CWA 301(b)(1)(C).

³⁵ 40 C.F.R. § 122.4(d).

³⁶ The legal definition of water quality standards includes the designated beneficial uses of aquatic life protection and protection of existing uses under the antidegradation policy, defined as those uses present at any time since November 28, 1975. *PUD No. 1 of Jefferson County v. Washington Department of Ecology*, 114 S.Ct. 1900, 1905 (1994); 40 C.F.R. §§ 131.12(a)(1), 131.3(e), 131.6(a), 131.3(f).

³⁷ 40 C.F.R. Part 132 Appendix F Procedure 8 D.

effluent limit to be established as calculated and that the “most sensitive, applicable, analytical method, specified in or approved under 40 CFR part 136, or other appropriate method if one is not available under 40 CFR part 136, to be used to monitor for the presence and amount in an effluent of the pollutant for which the WQBEL is established” be specified, along with the quantification level that can be achieved through that specified method.³⁸ In addition,

The permit shall contain a reopener clause authorizing modification or revocation and reissuance of the permit if new information generated as a result of special conditions included in the permit indicates that presence of the pollutant in the discharge at levels above the WQBEL. Special conditions that may be included in the permit include, but are not limited to, fish tissue sampling, whole effluent toxicity (WET) tests, limits and/or monitoring requirements on internal waste streams, and monitoring for surrogate parameters. Data generated as a result of special conditions can be used to reopen the permit to establish more stringent effluent limits or conditions, if necessary.³⁹

In addition, EPA GLI rules require

a condition in the permit requiring the permittee to develop and conduct a pollutant minimization program for each pollutant with a WQBEL below the quantification level. The goal of the pollutant minimization program [PMP] shall be to maintain the effluent at or below the WQBEL. In addition, States and Tribes may consider cost-effectiveness when evaluating the requirements of a PMP. The pollutant minimization program shall include, but is not limited to, the following:

1. An annual review and semi-annual monitoring of potential sources of the pollutant, which may include fish tissue monitoring and other bio-uptake sampling;
2. Quarterly monitoring for the pollutant in the influent to the wastewater treatment system;
3. Submittal of a control strategy designed to proceed toward the goal of maintaining the effluent below the WQBEL;
4. Implementation of appropriate, cost-effective control measures consistent with the control strategy; and
5. An annual status report that shall be sent to the permitting authority including:
 - a. All minimization program monitoring results for the previous year;
 - b. A list of potential sources of the pollutant; and
 - c. A summary of all action undertaken pursuant to the control strategy.
6. Any information generated as a result of procedure 8.D can be used to support a request for subsequent permit modifications, including revisions to (e.g., more or less frequent monitoring), or removal of the requirements of procedure 8.D, consistent with 40 CFR 122.44, 122.62 and 122.63.

³⁸ *Id.* at B.1.

³⁹ *Id.* at C.

While the GLI rules do not apply in Oregon, they provide a plausible path for DEQ to use to address quantitation levels that are well above the level of copper that causes jeopardy to threatened and endangered species. Doing nothing other than establishing the quantitation limits as the water quality-based effluent limits in the permit is not sufficient to meet the requirements of the CWA.

D. DEQ is Required to Consider Synergistic Effects When Establishing Effluent Limits

The NMFS BiOp observes that

Toxicity of copper to aquatic organisms is dependent on pH, temperature, alkalinity, hardness, and concentrations of bicarbonate, sulfide, and organic ligands (EPA 1980b as cited in EPA 2008), as well as the type and life stage of exposed organism (EPA 1999 as cited in EPA 2008). Copper is among the most toxic of the heavy metals to freshwater biota (Schroeder et al. 1966, Betzer and Yevich 1975 as cited in EPA 2008). In general, mortality of tested aquatic species is greatest under conditions of low water hardness, starvation, elevated water temperatures, and among early developmental stages (Eisler 1998a as cited in EPA 2008).⁴⁰

In addition to toxic effects, toxicity of copper is

influenced by chemical speciation, hardness, pH, alkalinity, total and dissolved organic content in the water, previous exposure and acclimation, fish species and life stage, water temperature, and presence of other metals and organic compounds that may interfere with or increase copper toxicity. Synergistic toxicity is suggested for mixtures of copper and aluminum, iron, zinc, mercury, anionic detergents, or various organophosphorus insecticides (Eisler 1998a).⁴¹

While lack of monitoring by DEQ and other entities results in lack of knowledge about the extent to which other pollutants implicated in creating deleterious synergistic effects with copper exist in Oregon's waters, DEQ is already aware of two significant synergistic effects with water quality parameters: temperature and hardness, the latter of which is discussed above. Despite its awareness, DEQ has taken neither of these into account in establishing the effluent limitations in the proposed permit. Water temperatures in Oregon are almost ubiquitous in violating Oregon's numeric criteria. Water temperatures are generally above the temperatures of 4.4 to 16°C used in the NMFS BiOp⁴² in the season to which this permit applies. In fact, most Oregon waters are not required to meet 16°C but rather than more generally applicable 18°C criterion. Oregon's 2010 Integrated Report indicates there are 1,321 waterbody segments violating temperature criteria. Oregon's highly outdated 2006 305(b) report indicates that of a total 1,732 causes of impairment,

⁴⁰ NMFS BiOp, *supra* fn 21, at 303.

⁴¹ *Id.* at 303.

⁴² Table 2.6.2.2.6.11, *id.* at 298.

1,029 were from temperature, equivalent to 60 percent.⁴³

Oregon's narrative criterion for toxic substances, such as copper, prohibit the introduction of toxics "in waters of the state in . . . combinations that may be harmful[.]"⁴⁴ The combination of copper and temperature is harmful, as NMFS has explained. The combination of Oregon's temperatures, copper, and low hardness levels – as low as 11 mg/L – would likely have even greater deleterious effects on aquatic life including threatened and endangered species of salmonids for which NMFS found jeopardy at levels below Oregon's numeric criteria at 100 mg/L hardness.

In addition, DEQ has not evaluated the potential for synergistic effects, required to be protected against by Oregon's narrative criteria, where copper would be discharged into waters that contain aluminum, iron, zinc, mercury, anionic detergents, or various organophosphorus insecticides that NMFS found had synergistic effects on toxicity of copper to salmon and steelhead. It is unclear what levels of aluminum would have to be present to cause synergistic effects but Oregon's database has three entries for aluminum, all on the Columbia River. The "Supporting Data" for these include comments that state

Previous Data: Aluminum exceeded EPA criteria of 87 ug/l at 15 of 15 backwater sites and 11 of 45 main stem sites. Aluminum is not considered a priority toxic pollutant by EPA (which has not determined dissolved concentrations standards for this metal). The measured concentrations were typical of unpolluted waters and are primarily associated with the fine particulate clays that are transported with the suspended sediments of the river (Bi-State Study 1994, 1996). Additionally, DEQ does not have a standard for Aluminum.⁴⁵

DEQ appears to be stating that aluminum exceeds EPA's recommended criterion but in fact Oregon does have an aluminum aquatic life criterion. These comments raise questions about the integrity of Oregon's 303(d) list and the degree to which the permittees and DEQ can rely on it. Moreover, as with all of the potentially synergistic or additive effects which Oregon's narrative criteria protect against, if there is no information on their presence or absence in the receiving waters, the permit must require the permittees to obtain the data and report it to DEQ prior to discharge authorization.

Oregon's database shows that 56 waterbodies exceed Oregon's criterion for iron. DEQ has many entries for zinc that are insufficient data. DEQ's listings for mercury – 29 waterbodies – are almost entirely based on Oregon Department of Human Services health advisories, not for impacts on aquatic life, and Oregon has already not updated its aquatic life criteria for mercury explicitly in order to avoid determining criteria that would protect threatened and endangered species. In other words, while there is some information in the 303(d) list what is more striking

⁴³ *Oregon Causes of Impairment for 303(d) Listed Waters*,
http://ofmpub.epa.gov/waters10/attains_state.control?p_state=OR&p_cycle=2006#causes_303d

⁴⁴ OAR 340-041-0033(2).

⁴⁵ *See, e.g.*, record for aluminum for Columbia River, LLID 1240483462464, segment miles 0 to 35.2.

is the fact that it forms an inadequate data base against which DEQ can evaluate whether its narrative criteria are met. EPA regulations require permitting authorities to include in NPDES permits conditions which “control all pollutants or pollutant parameters . . . [that] are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, *including State narrative criteria for water quality.*” 40 C.F.R. § 122.44(d)(1)(I)(emphasis added). DEQ does not have the option to ignore the narrative criteria.⁴⁶

DEQ does not need to rely on existing poor or non-existent data and information, however, because it can instead require permittees to obtain data on receiving water quality prior to authorization of the discharge. The proposed permit contains a limitation on coverage such that it does not authorize discharges of pesticides to any streams that are listed as impaired for that pesticide or its degradates unless there is a TMDL that includes an allocation for the pesticide discharges.⁴⁷ Given the inadequacy of DEQ’s monitoring program, its failure to timely promulgate 303(d) lists, EPA’s failure to timely promulgate 303(d) lists in the absence of state action, and the lack of numeric criteria for certain specified pollutants with which copper operates to have synergistic effects on threatened and endangered species, DEQ must also include permit requirements that a permittee obtain water quality data on those parameters and submit that information to DEQ prior to being authorized to discharge. If the data submitted demonstrate that there is the potential for such synergistic effects, DEQ must deny authorization and recommend that the prospective permittee seek an individual permit. This limitation should be reflected in the limitations section of the permit.

IV. Definition of Irrigation System

The proposed permit states that

This permit is required for pesticide applications for weed and algae control in an irrigation system or at the water’s edge within the irrigation system boundaries. “Weed and algae control” includes control of invasive or other nuisance weeds, algae and pathogens such as, fungi and bacteria. “Irrigation systems” include, but are not limited to, irrigation canals, laterals, ditches, drains or detention basins. “Water’s edge” means pesticide applications made within three feet of waters of the state or within three feet of conveyances with a surface connection to waters of the state at the time of pesticide application. The three feet distance is measured horizontally from the water’s edge.

The Fact Sheet explains the permit’s application to irrigation systems, defining them as a “controlled system consisting primarily of manmade canals, ditches and ponds . . . [and including] main canals, lateral canals, pipes, ponds for holding water or buffering flow, and drainage ditches . . . [as well as] gates, valves, overflow structures and other system

⁴⁶ See also *Upper Blackstone Water Pollution Abatement District v. EPA*, 2012 Y.S. App. LEXIS 16145, August 3, 2012 (First Cir.).

⁴⁷ Proposed Permit Limitation No. 2.

components[.]”⁴⁸ However, the phrase “irrigation system” is not defined in the proposed permit although many other phrases and words are defined in Schedule D. While Schedule A applies water quality-based effluent limits to discharges within the irrigation system but outside of the treatment area, thereby distinguishing those two types of waters, the definition in Schedule D of “treatment area” is a tautology as it merely states that it is the area which is treated. There is nothing in the definition that limits a permittee’s definition of a “treatment area” and no explanation by DEQ that a treatment area includes waters which are not waters of the state. Therefore, the effluent limit that prohibits states a discharge from causing or contributing to a violation of water quality standards “within the irrigation system but outside of the treatment area during the treatment period” is a limitation that allows a discharge to violate water quality standards that apply to waters of the US within the treatment area during treatment. As such it renders the proposed permit illegal.

DEQ’s permit is premised on the mistaken notion that it may exempt certain waterbodies from compliance with water quality standards and other CWA requirements. Specifically, DEQ appears to believe that if it establishes, through permit-specific definitions, a distinction between “irrigation systems,” and other waters of the United States that it may then exempt the “irrigation systems” from CWA requirements. This approach, however, defies the CWA and shows a clear disregard for existing, binding, federal case law.

The irrigation districts subject to the proposed permit encompass nearly 265,000 thousands of acres of land and contain hundreds of miles of waterways. Specifically, the proposed permit may apply to waters within the following irrigation districts: Klamath Irrigation District (39,125 acres); Hermiston Irrigation District (9,649 acres); North Unit Irrigation District (58,907.8 acres); Ochoco Irrigation District (20,145 acres); Owyhee Ditch Company (10,485 acres); Owyhee Irrigation District (65,606 acres); Stanfield Irrigation District (9,600 acres); Vale Irrigation District (34,993 acres); West Extension Irrigation District (10,400 acres); and Westland Irrigation District (14,700).⁴⁹ The Klamath Irrigation District alone has over 200 miles of irrigation canals and waterways which include both human-made irrigation ditches and naturally-occurring streams, lakes, and ponds. Whether constructed or not, irrigation districts are waters of the United States subject to the CWA’s protections.

The CWA applies to any “navigable water,” which is defined as a “water of the United States.” Waters of the United States, in turn, include intrastate lakes, rivers, streams (including intermittent streams) . . . “the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce,” and “*tributaries* of [those] waters.”⁵⁰ They include, as a matter of law, irrigation ditches and other waterways that exchange waters with natural streams

⁴⁸ Fact Sheet at 1.

⁴⁹ See Oregon Water Resources Congress Website, www.owrc.org

⁵⁰ 40 C.F.R. § 122.2(c), (e).

and other waterways.⁵¹ DEQ may not, as a matter of law, exempt irrigation systems from the CWA's protections.

The proposed permit allows permittees to add pesticides throughout the "treatment areas" of irrigation systems without requiring permittees to comply with water quality standards in all waters of the United States. Specifically, the permits establish waste discharge limitations that apply only to discharges to that enter irrigation systems but not treatment areas.⁵² In other words, the permittees may, at their discretion, apply herbicides anywhere within the irrigation system. No water quality-based effluent limitations are established for application of pesticides within the treatment areas, despite their being "waters of the United States," and even though many of these systems include constructed water courses and natural streams, ponds, lakes, and other water features. DEQ's distinction between "treatment areas" which are wholly defined by the discharger and "natural waters"⁵³ which are not defined in the permit is an impermissible distinction.

V. The Proposed Permit is Fraught with Numerous Problems

A. Riparian Vegetation

The fact sheet explains that use of herbicides can be used on "terrestrial plants that are close to the water's edge." DEQ has not explained how an NPDES permit that authorizes removal of terrestrial plants "within three feet of waters of the state" can be consistent with the results of any applicable Total Maximum Daily Loads (TMDL) for temperature which require maximum riparian vegetation for maximum shade. Allowing dischargers to create a dead zone near and in the water's edge may have the effect of precluding vegetation necessary to create the shade required by the TMDLs. For example, the Umpqua TMDL claims riparian vegetation overhang as part of its implicit margin of safety⁵⁴ yet this overhang would likely not exist or would be reduced through discharges from this proposed permit. NWEA has not searched through the applicable TMDLs to see how overhangs are used – relied upon to meet water quality standards or used as a margin of safety – but we are aware of this one and suggest that it is DEQ's job to evaluate the degree to which this proposed permit is inconsistent with TMDLs that have been developed by DEQ and approved by EPA.

⁵¹ *Headwaters, Inc. v. Talent Irrigation Dist.*, 243 F.3d 526, 533 (9th Cir. 2001); *see also United States v. Edison*, 108 F.3d 1336, 1341-42 (11th Cir. 1997); *United States v. TGR Corp.*, 171 F.3d 762, 764 (2d Cir. 1999); *United States v. Texas Pipe Line Co.*, 611 F.2d 345, 347 (10th Cir. 1979); *United States v. Deaton*, 332 F.3d 698, 710-11 (4th Cir. 2003); *Northern California River Watch v. City of Healdsburg*, 496 F.3d 993 (9th Cir. 2007), *cert. denied* 128 S.Ct. 1225 (2008); *Rapanos v. U.S. Army Corps of Engineers*, 547 U.S. 715 (2006). *See also CARE v. Henry Bosma Dairy*, 65 F. Supp.2d 1129 (E.D.Wa. 1999), 2001 WL 1704240 (E.D. Wa. 2001), *aff'd* 305 F.3d 943 (9th Cir. 2002).

⁵² Proposed Permit, Schedule A, Condition 1.a.

⁵³ *See, e.g.*, Proposed Permit, Schedule A, Condition 6.g.

⁵⁴ *See Umpqua Basin TMDL for Temperature* at 3-85.

B. Other Pesticides

The Fact Sheet appears to suggest that the permit applies to pesticides other than acrolein-, copper-, and xylene-based aquatic pesticides yet it contains no useful permit limits other than those that are self-imposed by the permittee. Without any reasonable potential analysis, DEQ cannot authorize the discharge of pollutants.

C. Non-Fish Aquatic Life and Human Health

There is no reference to non-fish aquatic life in the permit. Therefore, it is unclear if DEQ is authorizing the discharge of a pollutant that may harm or eliminate existing and designated aquatic life uses other than fish. In addition, DEQ has made no observations in the Fact Sheet concerning the possibility that people may touch or use water in the treatment area that are contaminated with poisons discharged pursuant to this permit thereby endangering their health. Instead, the assumption is that unsafe levels of poisons can be created in the treatment area waters because notifications to certain groups of people, but not all residents, will have been made. There are no provisions, for example, for warning signs to prevent human use.

D. Endangered Species Act

The fact sheet makes the wholly incorrect statement that DEQ's 2300A general permit for pesticide discharges is "similar to EPA's general permit." It is not. DEQ's 2300A general permit contains none of the prohibitions and limitations that condition the use of EPA's permit for the protection of salmon and steelhead. We suggest that DEQ read the EPA Pesticides General Permit⁵⁵ ("PGP") which in Oregon applies only to Indian Country.⁵⁶ Because EPA's PGP is a federal action, the agency completed ESA consultation on the permit with NMFS.⁵⁷ This consultation resulted in RPAs applicable to discharges allowed under the PGP.⁵⁸ As a result of these RPAs, EPA's PGP restricts discharges of pesticides to "NMFS Listed Resources of Concern,"⁵⁹ prohibiting such discharges unless: (1) there has been a separate consultation that

⁵⁵ EPA, *Pesticide General Permit (PGP) for Discharges from the Application of Pesticides*, effective October 31, 2011, available at http://www.epa.gov/npdes/pubs/final_pgp.pdf (last accessed July 26, 2012). Excerpts from the PGP are found in Appendix H.

⁵⁶ EPA, *Endangered and Threatened Species and Critical Habitat Protection under EPA's Pesticide General Permit*, available at <http://cfpub.epa.gov/npdes/pesticides/esa.cfm> (last accessed July 26, 2012).

⁵⁷ NMFS, *National Marine Fisheries Service Endangered Species Act Section 7 Consultation Biological Opinion [of the U.S. Environmental Protection Agency's Proposed Pesticides General Permit]* (October 14, 2011) available at http://www.nmfs.noaa.gov/pr/pdfs/consultations/biop_epa_pgp2111014-1.pdf (last accessed August 1, 2012).

⁵⁸ *Id.* at 155-160.

⁵⁹ EPA, *NMFS Listed Resources of Concern* are set out in a map, available at http://www.epa.gov/npdes/pubs/pgp_or_map.pdf; a list of Oregon watersheds available at http://www.epa.gov/npdes/pubs/pgp_oregon_watersheds.pdf; a list of steelhead and salmon

resulted in no jeopardy or adverse modification of habitat; (2) the “take” of the species is authorized through a habitat conservation plan; (3) the discharge is intended to address a Declared Pest Emergency Situation; (4) NMFS has approved the method of application; or (5) an agency has determined the discharge is not likely to adversely affect the species.⁶⁰ Where, as with the BiOps for the listed pesticides, there has been a separate ESA consultation (alternative No. 1 above), the PGP requires that the discharges be consistent “as modified with a reasonable and prudent alternative[.]”⁶¹ The discharger may also seek NMFS’ determination of eligibility or “self-certify” that its discharges are not likely to adversely affect NMFS Listed Resources of Concern by following the instructions in the PGP.⁶² The NMFS Listed Resources of Concern covers a wide swath of Oregon watersheds, all basins fully or partially with the exception of the Powder, Malheur River, Owyhee, Malheur Lake, Goose & Summer Lakes, and Klamath.⁶³

DEQ must correct the factually incorrect and misleading statements in the Fact Sheet and it must incorporate sufficient protections for threatened and endangered species as are necessary. It is not adequate for DEQ to include a general observation in Schedule A Condition E.1 that permittees must comply with any applicable biological opinions including RPAs:

Compliance with this permit is not intended to relieve the permit registrant from compliance with other federal and state requirements, such as the Endangered Species Act (e.g., U.S. Fish and Wildlife Service Biological Opinions), Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) requirements, or Oregon Department of Agriculture applicator licensing requirements. Issuance of this permit does not authorize any activities inconsistent with biological opinions or established reasonable and prudent measures developed to avoid incidental take of a listed species. In the event that applicable biological opinions are revised or replaced, DEQ reserves the right to reopen the permit or require that the permit registrant apply for an individual NPDES permit.

This observation is not set out in the permit as an effluent limitation so it is unclear how DEQ intends that it interacts with the findings of biological opinions and their RPAs. The proposed permit states that it does not authorize discharges that are inconsistent with the RPAs but it does

waters, available at http://www.epa.gov/npdes/pubs/pgp_oregon_waters.pdf; a list of eulachon waters, available at http://www.epa.gov/npdes/pubs/pgp_oregon_eulachon.pdf; and a list of green sturgeon waters, available at http://www.epa.gov/npdes/pubs/pgp_oregon_greensturgeon.pdf (last accessed July 31, 2012).

⁶⁰ EPA, *supra* n. 56 at 1-3 – 1-4.

⁶¹ EPA, *PGP Appendix I, Endangered Species Procedures* I-2 (October 31, 2011) available at http://www.epa.gov/npdes/pubs/pgp_appi.pdf (last accessed July 30, 2012).

⁶² *Id.* at I-3 – I-4.

⁶³ It should be noted that the USF&WS has not completed ESA consultations on either the PGP or the FIFRA labels so it is unknown what effect the identified pesticides may have on threatened and endangered species that are under its jurisdiction and which are present in the watersheds that are not covered by the NMFS “Listed Resources of Concern.”

not prohibit them either. DEQ should rewrite the permit to incorporate any existing and any future RPAs into the limitations of the permit rather than making observations. DEQ should not limit itself to reserving the right to reopen the permit but instead must prohibit discharges that are now known or will be known in the future to cause jeopardy to threatened and endangered species. It is DEQ's obligation when it authorizes the discharge of poisons to public waters to incorporate the limitations under the ESA into its effluent limits and ensure that the discharges – as authorized by those effluent limits – will not cause or contribute to violations of water quality standards, including existing and designated uses, numeric and narrative criteria.

E. Inadequate Fact Sheet

The Fact Sheet states that water quality monitoring reports from existing irrigation permits “do not contain results that exceed individual permit limits for acrolein, copper or xylene.” This is not helpful. It does not state whether the reported amounts would have exceeded permit limits as newly established in this general permit and it does not discuss the reported amounts and whether the quantitation limits used actually prevent DEQ from determining if water quality standards and effluent limits were exceeded or not in the case of acrolein and would have been exceeded or not in the case of copper.

F. Time Travel Study

DEQ's proposal that permittees will determine their own effluent limits by conducting a time travel study and thereby setting their own effluent limits is an impermissible establishment of conditions by the permittee in lieu of the permit agency.

G. Label Limits

The proposed permit should incorporate – at a minimum – whatever limits on use exist on FIFRA label restrictions. For example, the holding requirements discussed for acrolein in the Fact Sheet⁶⁴ should be incorporated as permit limits.

H. Antidegradation

In the Fact Sheet DEQ cites to the requirements of the antidegradation policy but fails to demonstrate that it has evaluated whether the discharge will result in full support of existing uses.

I. Natural Waters

As discussed elsewhere in these comments, DEQ makes an impermissible distinction between “natural waterways” and other waters. Yet it fails to define natural waters in the permit or discuss its meaning in the Fact Sheet. This despite the rather key role that DEQ gives so-called “natural waters”⁶⁵ in, for example, determining the locations of monitoring points.

⁶⁴ Fact Sheet at 16.

⁶⁵ See e.g., *id.* at 8.

J. Water Quality Limited Limitations

DEQ's Fact Sheet explains that there are no waters that are 303(d) listed for acrolein and xylene because there are insufficient data for the former and no criterion for the latter. It is false to say there is no criterion for xylene when there are narrative criteria such as the following criteria to protect aquatic life and human health from toxic contaminants, including xylene:

Toxic substances may not be introduced above natural background levels in waters of the state in amounts, concentrations, or combinations that may be harmful, may chemically change to harmful forms in the environment, or may accumulate in sediments or bioaccumulate in aquatic life or wildlife to levels that adversely affect public health, safety, or welfare or aquatic life, wildlife, or other designated beneficial uses.⁶⁶

* * *

Notwithstanding the water quality standards contained in this Division, the highest and best practicable treatment and/or control of wastes, activities, and flows must in every case be provided so as to maintain dissolved oxygen and overall water quality at the highest possible levels and water temperatures, coliform bacteria concentrations, dissolved chemical substances, toxic materials, radioactivity, turbidities, color, odor, and other deleterious factors at the lowest possible levels.⁶⁷

* * *

The creation of tastes or odors or toxic or other conditions that are deleterious to fish or other aquatic life ... may not be allowed.⁶⁸

DEQ is not allowed to pick and choose between EPA-approved criteria when meeting the basic requirement that NPDES permits not cause or contribute to violations of water quality standards. It must, instead, give legal meaning to all of its criteria particularly when those criteria exist to fill the gaps left by an inadequate number of numeric criteria. With regard to inadequate data on receiving stream quality, DEQ must require permittees to conduct sampling prior to the issuance of authorization to discharge rather than to assume that its own underfunded and inadequate monitoring program should be able to detect all the pollution impairments that exist throughout the state. As the permittees are seeking to pollute public waters, the DEQ policy should be to ensure that they first determine the quality of those waters to see how DEQ rules and standards apply.

K. Designated Use Protection

DEQ alleges that its effluent limits "will protect" the designated beneficial uses set out in a table in the Fact Sheet.⁶⁹ There is no analysis provided to demonstrate that this is true. DEQ cannot

⁶⁶ OAR 340-041-0033(2).

⁶⁷ OAR 340-041-0007(1).

⁶⁸ OAR 340-041-0007(11).

⁶⁹ Fact Sheet at 10.

merely rely upon the FIFRA registration and labels to draw this conclusion as is clear from biological opinions issued by the National Marine Fisheries Commission on both pesticides and copper.⁷⁰ In fact, the opposite is true, that DEQ has not evaluated what effluent limitations are necessary to ensure full protection of designated uses, an effort that must start by evaluating, for example, what is meant by “aquatic life” and “wildlife.” There is no discussion of either of these uses in the Fact Sheet.

L. Monitoring and Reporting

Despite the fact that temperature plays a significant role in both the efficacy of pesticides⁷¹ and the impact of toxic pollutants on beneficial uses, as discussed above, DEQ has not required temperature monitoring and reporting. This measurement should be added to Schedule B, Condition 3.a.

DEQ’s exempting dischargers from visual monitoring when it is dark or they are in vehicles is inappropriate. Where visual monitoring which DEQ has otherwise concluded is essential cannot be done, the permittee should employ some method of conducting the monitoring. For example, if a discharger is in a vehicle, the monitor can be somewhere else. Likewise, DEQ should limit the discharge to daylight hours rather than omit the visual inspection that is key to assurance permit limits are met.

Records should be kept for at least five years to accommodate the need for DEQ to prepare permit evaluation reports for renewed permits, not three years which will likely ensure that DEQ will not be able to obtain information that it might need.

M. Exemption of Research Activities

DEQ establishes no legal basis for exempting dischargers who are engaged in research and development activities. We are not aware of any such exemptions in the CWA.

N. Pesticide Control Alternatives

DEQ fails to consider the role of excess application of nutrients in growing all of the aquatic weeds that the pesticide users desire to kill.

O. Effect of Aquatic Weed Death

DEQ fails to consider the effects on nutrient levels and dissolved oxygen levels in downstream waters from the discharge which is intended to kill aquatic plants, thereby both releasing nutrients and depressing dissolved oxygen levels. Monitoring, reporting, limitations, and effluent limits should be incorporated into the proposed permit to address these issues.

⁷⁰ See, e.g., NWEA, *Petition to Initiate Rulemaking and Take Other Actions to Protect Existing and Designated Uses of Fish and Wildlife From Point and Nonpoint Sources of Pesticides*, August 9, 2012, available at <http://www.deq.state.or.us/wq/standards/pesticides.htm>.

⁷¹ See, e.g., Fact Sheet at 12 and 16.

VI. Limitations

DEQ has incorporated various limitations in its proposed permit including that it can revoke the general permit authorization if the permittee is a significant source, causes environmental problems, and is not in compliance with the permit terms.⁷² The problem with this limitation is that it is dependent upon a comparison between the activities of the permittee and the VMP which contains various technology- and water quality-based effluent limits but which DEQ will not make available to the public nor maintain in its offices. Without disclosure of the VMP to the public, DEQ has eliminated one essential avenue towards knowing whether the permittee is, in fact, in compliance with the permit terms. As DEQ knows, Congress intended that citizens would also play a role in enforcement of permit conditions. In this instance, compliance with permit conditions is required but compliance is also tied to future potential limitations in the use of the permit because compliance is tied to the content of the VMP. Yet DEQ's withholding of the VMP has the potential to withhold from public view information that could be pertinent to future permit limits.

DEQ is required to prohibit the discharge of pesticides into any waterway that Oregon has listed as impaired. The proposed permit specifies that it "does not authorize discharges of a pesticide from pesticide applications that reach any stream segment that is listed pursuant to OAR 340-041-0046 as water quality limited on the EPA approved 303(d) list for that pesticide or its degradates, unless the stream segment is subject to a total maximum daily load (TMDL) that includes an allocation for the pesticide from pesticide applications covered under this permit." This limitation suffers from several problems. First, the permit covers the discharge of only three pollutants: copper, acrolein, and xylene yet DEQ does not list waters as having a status for xylene because it does not have a numeric criterion for the pollutant. Oregon's only Integrated Report entries for acrolein date to 1996-1998 with the exception of an individual waterbody (the Amazon Diversion Canal in the Upper Willamette subbasin for which two samples were taken in 2003). Second, the criteria against which data were compared for acrolein are the old Table 20 criteria, not the newly-approved and far more stringent human health criteria which the permit uses. DEQ cannot use one criterion for effluent limits and another for judging whether the discharge is permissible in the first place. In addition, as the Fact Sheet points out, EPA's recommended aquatic life criteria are 3.0 µg/L as compared to the quantitation limit of 5.0 µg/L which overrides both EPA's recommended aquatic life criteria and the human health criteria, thereby not ensuring that an authorized discharge will not contribute to a violation of water quality criteria. Finally, while DEQ has 169 entries of waters for which copper has been monitored, DEQ's Integrated Report uses the old Table 20 criteria to judge whether the water is impaired or not, not the currently applicable criteria let alone the levels established by the NMFS BiOps as not causing jeopardy to threatened and endangered salmonids.

DEQ has also failed to consider the fact that in agricultural lands and waters there are many other toxic pesticides that are present. As discussed above, Oregon's narrative criteria and designated use protection require DEQ to consider this fact. Since mixtures are the norm in the environment, any pesticide impact analysis that fails to address mixtures will fall short of adequately assessing the problem. As discussed in the USGS 2007 Report:

Samples from streams in areas with substantial agricultural or urban land use

⁷² Proposed Permit, Coverage and Eligibility, Condition D.1.

almost always contained mixtures of multiple pesticides and degradates. More than 90 percent of the time, water from streams with agricultural, urban, or mixed-land-use watersheds had detections of 2 or more pesticides or degradates, and about 20 percent of the time they had detections of 10 or more. In addition, samples of fish tissue and bed sediment from most streams contained mixtures of historically used organochlorine pesticides and their degradates and by-products. More than 6,000 unique 5-compound mixtures were found at least 2 percent of the time in agricultural streams (only 1 unique 5-compound mixture was found in ground water). Evaluating the potential significance of mixtures can be simplified, however, because many mixtures do not occur very often at high concentrations, and the most frequently occurring mixtures are composed of relatively few pesticides. For example, the number of unique 5-compound mixtures found in agricultural streams is less than 100 when only concentrations greater than 0.1 micrograms per liter (ig/L) are considered. More than 30 percent of all unique mixtures found in streams and ground water in agricultural and urban areas contained the herbicides atrazine (and deethyla-trazine), metolachlor, simazine, and prometon. The insecticides diazinon, chlorpyrifos, carbaryl, and malathion were common in mixtures found in urban streams.⁷³

VII. Effluent Limitations

The proposed effluent limitations set out in Schedule A are inadequate. First, the permit contains a prohibition on discharges that cause or contribute to violations of water quality standards.⁷⁴ However, this prohibition only applies to discharges in the “treatment area,” that is those waters the permittee determines without DEQ approval or public review do not merit protection as waters of the United States under the pretense that the VMP does not constitute permit conditions. Moreover, DEQ does not intend to provide information to the public on what waters are considered to be covered under various provisions of this condition, making enforcement by citizens – a key provision of the Clean Water Act – impossible. The proposed effluent limitations also provide no protection for waters that are outside irrigation systems as all of the prohibitions on causing or contributing to violations of water quality standards apply only to “within the irrigation system.” Likewise, the Corrective Actions required under Condition 3.a.b. that are directly tied to violations of water quality standards, are similarly kept from public view because even after a permittee believes that it has violated this principle effluent limit, it may self-alter its VMP without public notification, public review and comment, and DEQ approval. It merely creates new effluent limits behind closed doors.

The proposed permit contains a condition that requires permittees to use label amounts of pesticides to prevent pest resistance and minimize frequency of discharges.⁷⁵ The permit does

⁷³ Gilliom RJ, Barbash JE, Crawford CG, Hamilton PA, Martin JD, Nakagaki N, Nowell LH, Scott JC, Stackelberg PE, Thelin GP, Wolock DM. 2007. *The quality of our nation's waters—pesticides in the nation's streams and ground water, 1992–2001*. US Geological Survey circular 1291.

⁷⁴ Proposed Permit, Schedule A, Condition 1.a.

⁷⁵ Proposed Permit, Schedule A, Condition 2.a.

not explain how a permittee can necessarily meet the requirement to optimize the killing power of pesticides while meeting permit limits, including those that are discussed above with regard to copper.

VIII. The Proposed Irrigation District Permit Violate Water Quality Standards by Unlawfully Treating the Irrigation System as a Mixing Zone

The proposed permit is based on DEQ's unlawful treatment of irrigation systems as mixing zones, in violation of federal law, state water quality standards, and court order. Although DEQ does not use the phrase "mixing zone" in its permit or Fact Sheet, its allowing exceedances of named pollutants in the irrigation systems renders the same result. While EPA allows for some limited mixing zones, it does not allow mixing zones of the size and geographic scope allowed by the proposed permit. In fact, EPA reviewed a previous rule called the Alternative Mixing Zone (AMZ) that allowed DEQ to use large areas for mixing zones. The federal agency found that the AMZ rule did not meet the requirements of the CWA and therefore disapproved the AMZ rule. In disapproving the AMZ rule, EPA made the following findings:

EPA finds that OAR 340-041-0053(h) [the AMZ rule] as a whole has the following deficiencies. Mixing zones, which are limited areas where applicable criteria may be exceeded, must be based on sound scientific rationale and protect the designated use [40 C.F.R. 131.11; 131.3(b)]. In order to approve a mixing zone policy which allows otherwise applicable criteria to be exceeded, the State must show it is protecting the designated uses of the waterbody as a whole. [Internal citation omitted]. The provision as submitted to EPA does not assure that the applicable numeric water quality criteria would be met within a reasonable distance of the discharge in a manner that would protect the designated uses of the waterbody as a whole. The provision states that "Most discharges that qualify for an alternate mixing zone will extend through the receiving stream until a larger stream is reached, where thorough mixing of the effluent can occur and where the edge of the allowed mixing zone will be located . . ." [internal citation omitted]. By using the entire receiving stream as the mixing zone, it is not possible to assure that the designated use is protected in the waterbody as a whole.⁷⁶

In its disapproval, EPA also specifically noted that the exemptions for constructed water courses contained in the AMZ rule violated the CWA:

The Constructed Water Course provision, OAR 340-041-0053(h)(B), does not protect the uses Oregon has designated for waterbodies where this may apply. EPA's review of Oregon's designated uses for waters where this provision was previously applied showed that these waters may have as many as 20 designated uses. They range from irrigation to public domestic water supply to fishing and boating. As EPA's regulations require that a mixing zone protect the designated use, and that criteria shall support the most sensitive use (40 C.F.R. 131.11), EPA

⁷⁶ Letter from Michael F. Gearheard, EPA Region X Director, Office of Water and Watersheds, to Stephanie Hallock, Director, Oregon DEQ, *Re: Disapproval of Oregon State Water Quality Standards Alternative Requirements for Mixing Zones*, at 1 (Oct. 1, 2004).

does not believe that the provision supports the designated uses [in the] applicable waterbodies.⁷⁷

DEQ's proposed permit simply continues the use of illegal alternate mixing zones without specifically using the phrases "mixing zone" or "alternate mixing zone." Specifically, in excluding all waters within the defined "irrigation systems" from compliance with water quality standards, DEQ has established another mixing zone that encompasses entire waterbodies. Just as the AMZ rule violated federal requirements governing mixing zones, so does DEQ's approach in the proposed permit.

Conclusion

DEQ must withdraw the proposed permit and re-issue it for public comment.

Sincerely,



Nina Bell
Executive Director

Attachments: Letter from Nina Bell, NWEA to Greg Geist, Northwest Region, DEQ *Application for Coverage Under General Permit NPDES No. 2300A by Fairview Lake Property Owners Association; Proposed Use of Fluridone on Fairview Lake and Upper Slough* (February 17, 2012).

Letter from Nina Bell, NWEA to Dick Pedersen, Director, DEQ *Petition for Reconsideration of May 15, 2012 Letter Approving Coverage Under the NPDES General Permit 2300A for the Fairview Lake Property Owners Association* (June 20, 2012).

Letter from Nina Bell, NWEA to Dick Pedersen, Director, DEQ *Addendum to Petition for Reconsideration of May 15, 2012 Letter Approving Coverage Under the NPDES General Permit 2300A for the Fairview Lake Property Owners Association* (July 17, 2012).

⁷⁷ *Id.* at 2.