SENATE BILL 737

PERSISTENT POLLUTANT TRIGGER LEVEL RULEMAKING RESPONSE TO PUBLIC COMMENTS

Water Quality Division
Oregon Department of Environmental Quality
811 SW Sixth Avenue
Portland, Oregon 97204
(503) 229-6251

3 May 2010

FINAL

TABLE OF CONTENTS

1. TECHNICAL COMMENTS - TRIGGER LEVELS 3

1.1 HUMAN WATER INGESTION RATE (PART OF MCL CALCULATION) 3

1.2 ABILITY TO ANALYZE FOR TRIGGER LEVELS 6

1.3 TRIGGER LEVELS ARE INCONSISTENT 7

1.4 USE OF "NON-TRADITIONAL" TOXICITY ENDPOINTS 9

1.5 USE OF MCL-EQUIVALENT ADJUSTMENT FACTOR 10

1.6 LACK OF INDIRECT EXPOSURE (INGESTION) SCENARIOS 12

1.7 BASIS FOR DERIVATION OF TRIGGER LEVELS 12

1.8 CONSIDERATION OF MIXTURES 13

1.9 USE OF PRELIMINARY REMEDIAL GOALS (PRGS) 13

1.10 NO DESCRIPTION OF HOW SELECTION PROCESS WAS APPLIED 14

1.11 INTERPRETATION OF "DOCUMENTED" EFFECTS 15

1.12 ESTIMATION OF DISCHARGES IN OREGON 16

1.13 FACILITY-SPECIFIC TRIGGER LEVELS 17

1.14 CONSIDERATION OF BACKGROUND CONCENTRATIONS 17

1.15 CONSIDERATION OF INFLUENT CONCENTRATIONS 18

2. CHANGES TO SELECTED TRIGGER LEVELS 19

2.1 TRIGGER LEVEL FOR β-SITOSTEROL (CASRN 83-46-5) 19

2.2 TRIGGER LEVEL FOR β-SITOSTANOL (CASRN 83-45-4) 19

2.3 TRIGGER LEVEL FOR D5 (CASRN 541-02-6) 20

2.4 TRIGGER LEVEL FOR CHLORPYRIFOS (CASRN 2921-88-2) 21

2.5 TRIGGER LEVEL FOR OXYFLUORFEN (CASRN 42874-03-3) 22

2.6 TRIGGER LEVEL FOR TRIFLURALIN (CASRN 1582-09-8) 22

2.7 TRIGGER LEVEL FOR HEXABROMOCYCLODODECANE (HBCD) (CASRN 25637-99-4) 22

2.8 TRIGGER LEVEL FOR TETRABROMOBISPHENOL A (TBBPA) (CASRN 79-94-7) 23

2.9 TRIGGER LEVEL FOR DECABROMODIPHENYL ETHER (PBDE-209) (CASRN 1163-19-5) 24

2.10 TRIGGER LEVELS FOR CHOLESTEROL (CASRN57-88-5) & COPROSTANOL (CASRN 360-68-9) 24

2.11 TRIGGER LEVELS FOR PYRETHROID INSECTICIDES 24

2.12 INCLUSION OF INORGANIC MERCURY (CASRN 7439-97-6) 26

2.13 REMOVAL OF TRIBUTYLTIN OXIDE (TBTO) (CASRN 56-35-9) 27

3. POLICY/LEGAL COMMENTS - TRIGGER LEVELS 28
3.1 USE TERMINOLOGY OTHER THAN "TRIGGER LEVELS" 28
3.2 TRIGGER LEVELS ARE NOT WATER QUALITY STANDARDS 29
3.3 SB 737 DOES NOT REQUIRE TRIGGER LEVELS 29
3.4 DO NOT PUT TRIGGER LEVELS IN RULE 31
3.5 DO NOT CONSIDER LEGACY POLLUTANTS 32
3.6 ADOPT AN INVENTORY OF PERSISTENT POLLUTANTS 34
3.7 PROPOSED RULE LANGUAGE: SECTION 1 36
3.8 PROPOSED RULE LANGUAGE: SECTION 2(B) 37
3.9 PROPOSED RULE LANGUAGE: SECTION (C) - NOT A WATER QUALITY STANDARD 37
3.10 PROPOSED RULE LANGUAGE: SECTION (D) - WRITTEN APPROVAL 39
3.11 PROPOSED RULE LANGUAGE: SECTION (E) - RIGHT OF APPEAL 41
3.12 PROPOSED RULE LANGUAGE: SECTION (F) - BASIS FOR PLANS 42
3.13 REMOVE TABLE A ENTIRELY 44
3.14 "LEVELS OF QUANTIFICATION " IN RULE 45
3.15 EXPLANATION OF "TREATMENT TECHNIQUES" IN RULE 46
3.16 OPERATION OF SCIENCE WORKGROUPS 46
3.17 COST OF RULE IMPLEMENTATION 47
3.18 INCLUDE SAFE HARBOR PROVISION IN RULE 48

4. TECHNICAL COMMENTS - SB 737 49
4.1 FRAGRANCE MATERIALS 49
4.2 FLAME RETARDANTS 49
4.3 EFFLUENT SAMPLING & MONITORING 49

5. GENERAL COMMENTS - SB 737 51
5.1 POLLUTION REDUCTION PLANS 51
5.2 FUNDING OF POLLUTION REDUCTION MEASURES 51

6. LIST OF COMMENTERS 53

Summary of Public Comment and Agency Response

Title of Rulemaking: Persistent Pollutant Trigger Levels

Prepared by: Bruce Hope

Date: April 15, 2010

Comment period

The public comment period for the trigger level rulemaking opened on January 1, 2010 and, after a requested extension, closed at 5 p.m. February 23, 2010. Four public hearings were held throughout Oregon in January 2010 - at Eugene, Portland, Pendleton and Medford - during which public input on the proposed rule was invited. DEQ received approximately 140 separate comments, totaling over 150 pages, from 24 separate entities. These comments, and DEQ's responses, are summarized below within broad categories. The person providing the comment is referenced both by name and by number. A list of commenters and their numbers can be found at the end of this document. Most comments are listed verbatim below; those listed in italic text in brackets {} are synopses.

1. TECHNICAL COMMENTS - TRIGGER LEVELS

1.1 HUMAN WATER INGESTION RATE (PART OF MCL CALCULATION)

(01) Comment - City of Corvallis (Larry Lamperti) - 06

{Some trigger levels were calculated based on the assumption that an adult drinks two liters of wastewater effluent per day or the assumption that a child drinks one liter of wastewater effluent per day.}

(02) Comment - Northwest Pulp & Paper Association (Kathryn VanNatta) – 35 and National Council for Air and Stream Improvement, Inc. (Dr. Jeff Louch) - 42

It is totally unrealistic to assume that a human being will consume 2 liters per day of final effluent as used in the Department's models. This overly conservative assumption should be altered to reflect actual water consumption by an Oregonian.

Assuming that a human being will consume 2 L/day of final effluent is unrealistic. Assuming that human beings drink 2 L/day of final effluent is simply not a rational proposition and leads to overly conservative TLs for certain compounds. This conservatism is compounded by the assumption that an individual's exposure resulting from drinking 2 L/day of final effluent would constitute only 20% of that individual's total daily exposure from all routes. Understanding that for some chemicals (e.g., pharmaceuticals) there is potential for exposure via multiple routes, assuming a relative

source contribution (RSC) other than 1.0 (e.g., 0.2) is not unreasonable. However, assuming that there is even incidental ingestion of small volumes of final effluent *on a daily basis* is simply unrealistic.

[…]

Because there are multiple routes of human exposure for many chemicals, adopting the RSCs used by EPA in derivation of MCLs is not unreasonable. However, assuming that a human being will consume 2 L/day of final effluent is clearly unreasonable. Considering the potential for any human being to ingest *any volume* of final effluent every day over their entire lifetime, DEQ could use some *de minimis* ingestion rate and still claim to err on the side of conservatism. This should be done.

(03) Comment - City of Eugene (Peter J. Ruffier) - 66

The Department states in its supporting documentation "*Senate Bill 737, Selection of Trigger Levels for Oregon's Priority Persistent Pollutants*", *2 November 2009*, that it has calculated 'trigger levels' for the human health branch hierarchy using the assumptions that adults drink two liters of wastewater effluent per day and a child drinks one liter of wastewater per day. The Eugene/Springfield WPCF is not a potable water supplier and does not treat its municipal waste effluent to meet EPA's national drinking water standards, nor do any of the other 51 facilities which fall under this rule; hence the assumption of direct ingestion of wastewater at levels equivalent to drinking water consumption is not reasonable and the trigger levels must be recalculated using scientifically defensible assumptions which are more realistic of actual exposures.

(04) Comment - Oregon Association of Clean Water Agencies (Janet Gillaspie) - 16

The "trigger levels" were calculated assuming that an adult drinks two liters of wastewater effluent per day and that a child drinks one liter of wastewater per day. These are not reasonable assumptions and the trigger levels must be recalculated using scientifically reasonable assumptions. We recommend that the use of the standard incidental recreational ingestion rate is more reasonable.

(05) Comment - Water Environment Services (Clackamas County) (Karen Menard) - 67

Liter Assumption. The trigger level standard for pollutants without an existing MCL is based on the assumption of possible consumption by the public of up to 2 liters of wastewater effluent per day. This consumption appears to primarily occur through recreational activities. This "consumption" is then extrapolated across an extended period of time to measure accumulation for persistent pollutants. However, it is not reasonable to assume that members of the public consume their entire daily water allotment directly from rivers without prior treatment. Water consumption assumptions must assume that a vast majority of the water consumed by the public would be after treatment of source waters by a water treatment plant creating potable water. The failure to include in the trigger level selection the impact of potable water consumption renders the proposed

trigger levels unreasonable. The trigger levels must be recalculated using scientifically reasonable assumptions.

(06) Comment - American Chemistry Council - 26

ACC is concerned that the proposed approach using MCLs or Water Quality Criteria (WQC) applied in drinking water should not apply to wastewater effluent. Applying a drinking water WQC to effluent is also conservative since WQC generally apply to ambient receiving waters after consideration of the zone of influence. In the absence of MCLs or WQC, DEQ proposes to use "the lower of the lowest human health or aquatic life values found in the peer reviewed literature or in various governmental assessment forums". Although this type of approach might be appropriate in some type of screening assessment, DEQ's intent in this case is for wastewater treatment plants to develop pollution prevention (i.e., source reduction) plans for those compounds identified in monitoring to exceed the trigger levels. In some cases, then, the pollution prevention requirement will be established for compounds found to exceed an inappropriate and arbitrary threshold, with little demonstration of risk to either human health or the environment.

(07) Comment - League of Oregon Cities (Daniel Eisenbeis) - 68

We would also like to express our disagreement with the assumptions used in setting the trigger levels, which were calculated assuming a human ingestion rate of two liters per day of municipal wastewater treatment plant effluent. In our view, this assumption is both unrealistic and inappropriate. DEQ has acknowledged that "…(a) effluent is not drinking water, (b) there is no documentation indicating that SB 737's specification of an MCL signals an intent to treat effluent as drinking water, and (c) using assumptions contained in the MCL calculations will likely significantly overestimate actual human exposures to effluent…." [emphasis added] However, the Department has asserted that despite such consideration, drinking water based assumption is warranted "…for consistency with the language of SB 737…." We respectfully submit that the intent of SB 737 in referencing MCLs is to provide a simple and readily available basis for determining whether certain pollutants (those with an MCL) should be included in toxics reduction plans, not to imply a methodology for determining which other P3 compounds should be included in toxics reduction plans. If the numeric values are retained, either in rule or as Department guidance, we recommend that the values be recalculated with the standard incidental recreational ingestion rate of 100 ml/day.

DEQ's response

DEQ, in consultation with its peer-review group, considered various alternatives to use for the MCLs default assumptions, up to and including lowering the water ingestion rate to 0.1 L/d and raising the relative source contribution (RSC) to 100%. DEQ recognizes that people will not likely be exposed to two liters of wastewater effluent per day. However, because SB 737 clearly requires use of the MCL, DEQ determined where MCLs exist, the statute requires the use of the published MCL value. DEQ also evaluated whether trigger levels for pollutants without MCLs could deviate from the assumptions of MCLs. DEQ

determined that in order to be consistent among trigger levels and the legislative intent that deviating from the exposure assumptions contained in MCLs was not possible. Consequently, all trigger levels were selected to be consistent with the exposure assumptions contained in MCLs.

1.2 ABILITY TO ANALYZE FOR TRIGGER LEVELS

(08) Comment - Mr. Mark Milne, Pendleton, OR - 01

This is the response I got from the laboratory that I have had the best luck working with in Eastern Oregon: "I'd be surprised if you could find a lab anywhere in the country to do all of these. We could do about 75% of the list, but it would take me a couple of hours to go through the whole list and narrow it down. Finding labs to do the remainder could take a while. Meeting all of the Trigger levels could be tricky. If I were you, I would pose a question to DEQ such as "We are concerned with the practicality of finding laboratories to run the proposed list and the associated cost. Also, there may be problems meeting some of the trigger levels for the more trace contaminants (DDT at 1 ppt for instance)." My suggestion to DEQ would be to see if THEY could find laboratories that can run these, at the levels indicated, and what the cost would be. They might find that it's more difficult in practice to test for these via commercial laboratories than it is to run a bunch of calculations and put proposed requirements on paper. In any event, I guarantee that the cost would be substantial. Probably several thousand dollars per sample for the whole list. Are there laboratories in the northwest that can run these samples to the levels proposed and for the volume of samples that will need to be tested? I am not sure how many plants will be required to test or how often, but if all 1mgd plants or larger are required to test I would think we would exceed laboratory capacity."

(09) Comment - Eugene Water & Electric Board (Karl Morgenstern) - 50

…many of the pollutants being used in the watershed cannot be analyzed by commercial analytical laboratories… Is DEQ developing these capabilities?

(10) Comment - Water Environment Services (Clackamas County) (Karen Menard) - 67

WES staff has participated in DEQ/Lab Managers discussions these past months with representatives from commercial and municipal laboratories in the region. During the final Peer Review panel discussion, the commercial lab representatives argued that no commercial lab could achieve the detection levels of all of the proposed trigger levels, nor did they have the methodology developed for all of the chemicals on the P^3 List. They went on to say that no commercial lab would be able to handle the workload for a coordinated sampling event for the chemicals on the P^3 List nor would they be willing to set aside routine work for a special project of this magnitude. Without commercially available technology at a reasonable cost, WES argues that a sampling and analysis plan for the P^3 List is economically infeasible, indeed cost prohibitive, and an inappropriate use of rate and tax payer monies.

(11) Comment - The Soap and Detergent Association (Paul DeLeo) - 21

The Trigger Levels should be cost effective and meaningful. Several of the trigger level values proposed are at the *part-per-trillion* (ng/L) level or lower. Achieving reliable measurements at those levels can be very difficult and expensive. Consideration should be given to the costs to obtaining the necessary equipment and training the appropriate staff relative to the value of obtaining data to such a low level. The trigger level data should be meaningful to the protection of human and environmental health. As was stated previously, the trigger levels should be site specific considering the release of a particular treatment plant into a receiving water body and all relevant information prior to human or environmental exposure (e.g., dilution, background concentrations, attenuation, etc.). The triggers levels should not be unduly burdensome to the wastewater treatment facilities or offer negligible public health benefit as a result of their implementation.

DEQ's response

Based on information gathered from the Methods Workgroup DEQ convened during the summer of 2009, and work done by DEQ's laboratory, DEQ has concluded that the majority of the proposed trigger levels can be analyzed by available methods. The Methods Workgroup convened by DEQ was comprised of representatives from commercial laboratories, the federal government, and industry, and was tasked with providing advice on the practicality of analyzing for these pollutants at the trigger levels. The workgroup concluded that analytical methods are available for all of the 118 listed pollutants and additional development will be required for some of the methods in order to be used for some of the 118 listed pollutants. Based on this analysis the Methods Workgroup concluded that, in the majority of cases, measurement at the trigger level could be achieved. DEQ's laboratory is prepared to analyze effluent samples from all 52 WWTP (in groups of 17) in a timely manner. As described in the Statement of Need and Fiscal and Economic Impact (FEI), the estimated cost for DEQ's laboratory to analyze all 118 listed pollutants is approximately $7,000 per facility per sampling event.

1.3 TRIGGER LEVELS ARE INCONSISTENT

(12) Comment - Northwest Pulp & Paper Association (Kathryn VanNatta) – 35 and National Council for Air and Stream Improvement, Inc. (Dr. Jeff Louch) - 42

Proposed trigger levels represent different levels of risk to aquatic life and/or human health and this needs to be accounted for prior to implementing pollution prevention.

The proposed trigger levels represent different levels of risk to aquatic life and/or human health, and this needs to be accounted for prior to implementing pollution prevention. Despite DEQ's best efforts, the proposed chemical-specific trigger levels (TLs) carry varying degrees of authority and conservatism, meaning that the risks associated with exceeding a trigger level will vary from chemical to chemical. For example, an effluent containing mercury at a concentration exceeding the MCL would certainly pose a much greater risk to aquatic life and/or human health than would an effluent exceeding the TL for diethylstilbestrol, which is a no-observed-effects-concentration, or cholesterol, which

was obtained via modeling (Comment 2). DEQ should acknowledge this, and NCASI suggests that some ranking of the TLs based on potential risk should be made prior to making any decisions about how aggressive chemical-specific Persistent Pollutant Reduction Plans (P2RP) need to be. This ranking should take into account the severity of the relevant endpoint (e.g., mortality vs. endocrine effect) and the authority of the supporting data (e.g., water quality standards vs. unreplicated results from a single study).

(13) Comment - Water Environment Services (Clackamas County) (Karen Menard) - 67

As the DEQ and EQC know, it takes years to develop MCLs. The process is glacially slow but based on sound science. Bruce Hope of the DEQ stated that the trigger level selection process has "consistency with MCLs." WES argues that development of MCLs and selection of trigger levels are not consistent. They are not even close to the same level of scientific data and research. The selection process of trigger levels was based on modeling, not reliable, scientific evidence based on the P3 chemicals on fish and wildlife and aquatic species in Oregon and demonstrated over time.

(14) Comment - American Chemistry Council - 26

As a general policy matter the trigger levels for any substance should take into account cost and technical feasibility. These factors are explicitly outlined in U.S. EPA's definition of Maximum Contaminant Level (MCL). While ACC does not believe the use of MCLs to be appropriate for the plans outlined in this regulation, this approach was specified in the implementing legislation (SB 737). For substances for which there are no established MCLs, the DEQ should specifically take into account cost and technical feasibility when establishing trigger level values. This would be consistent with established EPA policy and the definition of MCL.

DEQ's response

DEQ developed its trigger level selection process[1] consistent with the intent and protectiveness expressed and implied by the statute's explicit requirement to use maximum contaminant levels (MCL), where those exist for listed priority persistent pollutants. DEQ did not develop trigger levels but rather selected them from other national or international criteria or from the peer-reviewed scientific literature. Pollutants exceeding a trigger level in municipal wastewater treatment plant effluent indicate the pollutant concentration is at a level that necessitates a reduction plan. The objective of the persistent pollutant reduction plan is to reduce discharges of pollutants in order to prevent human health or aquatic life effects in the long-term.

U.S. EPA states that MCLs are set "as close to MCLGs [level of a contaminant in drinking water below which there is no known or expected risk to health] as feasible using the best available treatment technology and taking cost into consideration." While this statement may imply that MCLs always include engineering and economic concerns, DEQ found

[1] "Selection of Trigger Levels for Oregon's Priority Persistent Pollutants," Oregon Department of Environmental Quality, November 2009 (http://www.deq.state.or.us/wq/SB737/index.htm).

them to be on par with other values developed to protect human health endpoints at a concentration which could be allowed for lifetime without adverse effects. At best, MCLs generally reflect a 10^{-5} acceptable risk level rather than a more stringent 10^{-6} level.

DEQ has developed trigger levels for the sole purpose of determining the need for municipal wastewater treatment plants to develop a persistent pollutant reduction plan - they are not intended to play a direct role in the development of the plans themselves. The statute requires that permittees include "focused goals for the reduction of persistent pollutants" and notably does not call for permittees to use the trigger levels as reduction goals. DEQ agrees that factors other than the trigger levels must be taken into consideration when developing and implementing the reduction plans.

1.4 USE OF "NON-TRADITIONAL" TOXICITY ENDPOINTS

(15) Comment - Northwest Pulp & Paper Association (Kathryn VanNatta) – 35 and National Council for Air and Stream Improvement, Inc. (Dr. Jeff Louch) - 42

"Non-traditional" effects endpoints do not constitute documented harmful effects and should not be used as trigger levels for purposes of SB 737.

"Non-traditional" effects endpoints do not constitute documented harmful effects and must not be used as trigger levels. Section 3(2)(a) of SB 737 specifically states that chemicals must have "documented harmful effects on the health and well-being of humans, fish or wildlife, especially aquatic species." Beyond the issue of whether or not modeled effects constitute "documented harmful effects" (they do not) is the broader issue of what does constitute a harmful effect. With respect to potential impacts on aquatic life, NCASI suggests the discussion offered in EPA's recent Draft White Paper (USEPA 2008a) addressing how aquatic life criteria (ALC) might be developed for contaminants of emerging concern (CEC) is directly relevant to this question.

[…]

In the absence of data showing an effect on survival, growth, or reproduction, evidence that a chemical elicits some effect on one of these non-traditional endpoints does not constitute documentation of a harmful effect on aquatic life, and any chemical now on the P^3 List based solely on this kind of data should be removed. If this is not done, the P^3 List will be inconsistent with both the EPA White Paper and the language in Section 3(2)(a) of SB 737. Beyond this, if there are chemical-specific data showing effects on both traditional and non-traditional endpoints, only data reflecting one of the traditional endpoints should be used a TL; i.e., the lowest lowest-observed-adverse-effect-level (LOAEL) for one of the traditional endpoints is the floor for an acceptable TL.

DEQ's response

DEQ avoided using "non-traditional" endpoints (e.g., typically those below the level of the whole organism, such as those at the biochemical, molecular, or genetic levels) during creation of the P^3 List and selection of trigger levels. The endpoints used by DEQ are summarized in Table 1 of the November 2009 Trigger Level Report.

1.5 USE OF MCL-EQUIVALENT ADJUSTMENT FACTOR

(16) Comment - City of Corvallis (Larry Lamperti) - 06

{The City disagrees with use of the MCL adjustment factor and believes that ecological risk factors were also adjusted inappropriately. Suggestion is to use ECOSAR estimates as is, without adjustment.}

(17) Comment - City of Eugene (Peter J. Ruffier) - 66

We concur with ACWA's determination that ecological risk factors were adjusted inappropriately as applied to the 'MCL adjustment factor' and request that ECOSAR-based ChVs be used without modification.

(18) Comment - Oregon Association of Clean Water Agencies (Janet Gillaspie) - 16

Also, ecological risk factors were adjusted inappropriately. In "Table 1. Proposed Trigger Levels for Priority Persistent Pollutants" provided to ACWA in January 2010, DEQ provides notes as to which portion of the trigger level hierarchy was used for a given P3L chemical. Roughly 20% of the trigger levels (23/118) were selected based on "[M1] USEPA ECOSAR" chronic values (ChVs). For most of these 23 chemicals, DEQ also applied a "MCL adjustment factor" of 0.05 as described in footnote 19 of the November 2, 2009 final trigger level selection report. According to footnote 19, a comparison of MCLs with ECOSAR ChVs--for P3L chemicals that had both values available--suggested that ECOSAR values were, on average, less conservative than the corresponding MCL, and so should be adjusted downward to reflect a similar level of sensitivity, leading to a 95% reduction in the resulting value calculated.

ACWA disagrees with use of this MCL adjustment factor, and recommends that ECOSAR-based ChVs should be used without further modification. First of all, no other ecologically-based trigger level used any kind of adjustment factor to make them more "similar" to MCLs, so it is inconsistent to add a MCL adjustment factor only for the ecologically-based ECOSAR values. Furthermore, using an average adjustment factor that was derived from other chemicals has a high level of uncertainty that, in effect, compounds the already high level of uncertainty in using a modeled ECOSAR values. By the very fact that no empirical data exist for these chemicals, additional uncertainties would make these values even more difficult to defend in a regulatory context.

(19) Comment - Water Environment Services (Clackamas County) (Karen Menard) - 67

Ecological Adjustments. SB 737 provides for the use of MCLs in defining pollution reduction goals. However, ecological risk factors were adjusted inappropriately. In "Table 1, Proposed Trigger Levels for Priority Persistent Pollutants" provided to ACWA in January 2010, DEQ provides notes as to which portion of the trigger level hierarchy was used for a given P^3 List chemical. Roughly 20% of the trigger levels (23/118) were selected based on "[M1] USEPA ECOSAR" chronic values (ChVs). For most of these 23 chemicals, DEQ also applied a "MCL adjustment factor" of 0.05 as described in footnote

19 of the November 2, 2009 final trigger level selection report. According to footnote 19, a comparison of MCLs with ECOSAR ChVs--for P3L chemicals that had both values available--suggested that ECOSAR values were, on average, less conservative than the corresponding MCL, and so should be adjusted downward to reflect a similar level of sensitivity.

WES disagrees with use of this MCL adjustment factor, and recommends that ECOSAR-based ChVs should be used without further modification. First of all, no other ecologically-based trigger level used any kind of adjustment factor to make them more "similar" to MCLs, so it is inconsistent to add a MCL adjustment factor only for the ecologically-based ECOSAR values. Furthermore, using an average adjustment factor that was derived from other chemicals has a high level of uncertainty that, in effect, compounds the already high level of uncertainty in using a modeled ECOSAR values. By the very fact that no empirical data exist for these chemicals, additional uncertainties would make these values even more difficult to implement or defend in a regulatory context.

(20) Comment - League of Oregon Cities (Daniel Eisenbeis) - 68

We also note and share the concerns articulated by Oregon ACWA that ecological risk factors were inappropriately calculated using a “MCL adjustment factor.”

DEQ’s response

DEQ reviewed the comments submitted on the proposed rules and the process used to select proposed trigger levels and agrees that an adjustment of ECOSAR estimates is not necessary. DEQ will remove the adjustment factor from those trigger levels to which it was applied.

The selection process by which the proposed trigger levels were determined stated that if an effect level could be selected from the literature (Section 2.2.4.1), that the value would be the lowest LOAEL or equivalent. In instances when a lowest LOAEL was not obtainable, DEQ adjusted the value available (usually an LC_{50}) so as to approximate a lowest LOAEL.

When no human health- or aquatic life-based value was available for selection, DEQ used U.S. EPA’s ECOSAR model to estimate an effect level. Estimation of effect levels by means of quantitative structure activity relationships (QSARs) or models is an accepted regulatory practice (e.g., Moore et al., *Environ Toxicol Chem* 22: 1799-1809, 2003; Reuschenbach et al., *Chemosphere* 71: 1986-1995; Cronin et al., *Environ Health Pers* 111: 1376-1390, 2003; Robinson et al., *Environ Informatics Arch* 2: 122-130, 2004).

If an effect level needed to be estimated with ECOSAR, the process stipulated (Section 2.4.3.1) that it be the lowest chronic value (ChV) across all species and chemical classes to which a chemical could belong. This ChV is the geometric mean of the lowest-observed and no-observed effect levels and therefore approximates a lowest LOAEL. DEQ therefore agrees that an adjustment of ECOSAR estimates is not necessary and will remove the adjustment factor from those trigger levels to which it was applied.

1.6 LACK OF INDIRECT EXPOSURE (INGESTION) SCENARIOS

(21) Comment - Oregon Center for Environmental Health (Mari Anne Gest) - 31

DEQ proposes that no "indirect exposure" to P3 chemicals will be monitored. DEQ's excuse that the development of necessary models to analyze indirect exposure would "unduly delay trigger level selection" is not a sufficient reason to overlook indirect exposure routes. The necessary modeling of transport and fate processes and food web data (ie. analysis that may be considered timely and cost consuming) can be completed at a slightly later date; and if necessary, even selected for the most prevalent chemicals on the P^3 List. DEQ should NOT perpetuate the "economics vs. health" philosophy that continues to compromise community health under the rule of the EPA.

(22) Comment - Eugene Water & Electric Board (Karl Morgenstern) - 50

As I am sure DEQ is aware, some of the human and aquatic toxicity data used to set these trigger levels, such as EPA MCLs, are not necessarily protective of human health, especially as it relates to bioaccumulation of pollutants and ingestion of fish or other organisms by humans.

DEQ's response

Direct exposure scenarios can only be readily evaluated using pollutant concentrations in effluent. The additional evaluation of indirect exposure scenarios would require modeling of transport and fate processes and food web transfers to connect pollutant concentrations in effluent to those in receiving waters or aquatic species. DEQ has determined that the development, parameterization, and corroboration of such models would unduly delay trigger level selection and, ultimately, implementation of pollutant reduction actions, without necessarily increasing the level of protection beyond that afforded by considering direct exposures alone. Furthermore, SB 737 only requires an identification of which chemicals require a persistent pollutant reduction plan, making modeling for a full and quantitative exposure characterization and risk assessment unnecessary. In addition, SB 737 specified MCLs as the basis for requiring a reduction plan and DEQ has selected trigger levels to be consistent with the level of protection implied by an MCL. Because MCLs are not calculated on the basis of indirect (i.e., consumption) exposures, none of the trigger levels were selected on this basis either.

1.7 BASIS FOR DERIVATION OF TRIGGER LEVELS

(23) Comment - Oregon Center for Environmental Health (Mari Anne Gest) - 31

Selection processes will rely primarily on data originating from EPA (i.e. risk assessments/risk-based criteria) which is not necessarily protective of human or ecological health. EPA risk estimates tend to underestimate risk, since a majority of the assessments are "single-stressor" assessments and do not adequately take into account multiple stressors, multiple exposures, and susceptible (sensitive) populations. Further, in the absence of relevant data, EPA uses assumptions in developing estimates of risk

(USEPA, 2004). Determination of trigger levels should evolve past the narrow parameters of current risk evaluations, and should use a model similar to the Precautionary Assessment (introduced by Dr. Steven Gilbert of the Institute of Neurotoxicology & Neurological Disorders in Seattle). This approach to risk assessment is a more comprehensive evaluation, and assesses hazard and exposure issues in the context of the community (e.g. accounting for the susceptibility differences of who will be exposed to the pollutants) (Gilbert, 2006). DEQ must consider the use of sensitivity analysis to examine what data points and/or defaults involved in toxicity determination are the most critical.

DEQ's response

With the exception of values selected from the literature or estimated with ECOSAR, the trigger level selection process considered chronic no-effect thresholds published by U.S. EPA, as well as those produced by several other national and international jurisdictions. These thresholds represent the point at or below which no adverse effects are expected assuming continuous exposure for a lifetime. MCLs are derived in a manner that assumes no adverse effects over a lifetime. For aquatic life, the National Ambient Water Quality Criteria Criterion Continuous Concentration (NAWQC CCC), by definition, allows for an "indefinite" exposure without ill effects. Such thresholds are also set using a conservative hazard assessment approach; risk assessment techniques are typically not used.

1.8 CONSIDERATION OF MIXTURES

(24) Comment - Oregon Center for Environmental Health (Mari Anne Gest) - 31

EPA admittedly concludes that "In practice, sufficient data are seldom available to model interactions, and "for mixtures of more than two chemicals, the true nature of joint toxic action may be speculative at best" (USEPA, 2004). EPA is reportedly moving toward evaluating cumulative risks (e.g., planning and scoping activities for cumulative risk, the Cumulative Risk Framework). Unfortunately, data using cumulative risk assessments will likely not be available for DEQ's use in creating Trigger Levels. OCEH recommends that DEQ demand EPA expedite its transition to cumulative risk assessments, or better yet, that DEQ quickly begin cumulative risk modeling on its own.

DEQ's response

DEQ did not consider the issue of mixtures in trigger level selection because SB 737 requires DEQ to consider each pollutant individually. DEQ acknowledges that estimating the effects of mixtures of chemicals remains one of the great challenges facing environmental toxicology.

1.9 USE OF PRELIMINARY REMEDIAL GOALS (PRGS)

(25) Comment - Eugene Water & Electric Board (Karl Morgenstern) - 50

Why did DEQ not consider using EPA Preliminary Remedial Goals (PRGs) as one of the

datasets for setting trigger levels ([as these seem] to have more complete exposure scenarios)?

DEQ's response

Direct exposure scenarios can only be readily evaluated using pollutant concentrations in effluent. The additional evaluation of indirect exposure scenarios would require modeling of transport and fate processes and food web transfers to connect pollutant concentrations in effluent to those in receiving waters or aquatic species. DEQ has determined that the development, parameterization, and corroboration of such models would unduly delay trigger level selection and, ultimately, implementation of pollutant reduction actions, without necessarily increasing the level of protection beyond that afforded by considering direct exposures alone. In addition, SB 737 specified MCLs as the basis for requiring a reduction plan and DEQ has selected trigger levels to be consistent with the level of protection implied by an MCL. Because MCLs are not calculated on the basis of indirect (i.e., consumption) exposures, none of the trigger levels were selected on this basis either.

1.10 NO DESCRIPTION OF HOW SELECTION PROCESS WAS APPLIED

(26) Comment - City of Portland, Bureau of Environmental Services (Kim Cox) - 24

DEQ's "Proposed Rulemaking Announcement" indicates that the process used to develop these trigger levels is documented in "Selection of Trigger Levels for Oregon's Priority Persistent Pollutants". While the document does outline the general process, and the January 21, 2010 version of Table 1 identifies information sources that were consulted for each individual trigger level, there is no clear description provided as part of the original rulemaking announcement as to how the selection process was applied to achieve each of the published trigger levels for each pollutant. That information is critical to evaluation of the validity of the trigger levels themselves as well as to whether the method was appropriately or consistently applied. DEQ distributed a table outlining that information to some interested parties and at some of the public hearings, but that was not an official part of the notice record.

(27) Comment - American Chemistry Council - 26

The DEQ should explicitly outline the basis and rationale for establishing a specific trigger level values. The DEQ should ensure the use of most current science and technical information in developing the trigger level values. This should take into account the validity, acceptability and "data hierarchy" of studies/information available for a substance.

(28) Comment - The Soap and Detergent Association (Paul DeLeo) - 21

There should be more transparency in the development of the Trigger Levels. Oregon DEQ described in its November 2, 2009 document Selection of Trigger Levels for Oregon's Priority Persistent Pollutants the process that was used to select the trigger levels, and in the related Table 1 (dated December 15, 2009) there are further notes on how individual trigger levels were derived. However, it is not entirely clear how individual

trigger levels were established and whether they are justified. In order to engender confidence in the trigger levels, Oregon DEQ should "show all its work" for each individual trigger level developed.

DEQ's response

The Table 1 which accompanied the rulemaking package was limited to just the pollutants, their proposed trigger levels, and a brief note as to source. Another version of this table, with an additional column detailing the basis for selection of each trigger level, was placed on the SB 737 website after the proposed rulemaking package was released.

1.11 INTERPRETATION OF "DOCUMENTED" EFFECTS

(29) Comment - Northwest Pulp & Paper Association (Kathryn VanNatta) – 35 and National Council for Air and Stream Improvement, Inc. (Dr. Jeff Louch) - 42

Modeled effects levels do not constitute documented harmful effects and must not be used as trigger levels. Section 3(2)(a) of Senate Bill (SB) 737 specifically states that chemicals must have "documented harmful effects on the health and well-being of humans, fish or wildlife, especially aquatic species." NCASI interprets this to mean that data must exist showing that exposure to a chemical at some known concentration elicits a measurable and verifiable toxicological response, and not simply that a model predicts an effect at some concentration level. As part of the process of developing the draft P^3 List, DEQ used modeled toxicity to fish (from ECOSAR™) as a means of screening chemicals. In public comments submitted in March 2009 NCASI suggested that, regardless of the predicted endpoint, experimental data documenting (i.e., confirming) an actual effect must exist in order to meet the weight of evidence necessary for inclusion of a chemical on the final P^3 List. This comment reflected the reality that prediction of an effect does not constitute demonstration or documentation of an actual effect. The fact that modeled endpoints are now being proposed as TLs indicates that this comment was rejected, begging the question: If no data documenting harmful effects of a specific chemical exist for use as a TL, what was the basis for including the chemical on the list in the first place? At this time NCASI reiterates that predicted toxicity does not equate with demonstration or documentation of toxicity, and that absence of experimental data showing a toxicological effect is sufficient basis for excluding a chemical from the P^3 List. In fact, inclusion of a chemical on the P^3 List in the absence of relevant data is contrary to the wording of Section 3(2)(a) of SB 737. All chemicals currently on the list having TLs based on modeled toxicity should be removed. If DEQ is unwilling to remove these chemicals from the P^3 List entirely, it should put the associated chemicals aside until relevant data become available. Specifically, DEQ should delete box M1 from the Attachment 1 flow diagram and modify Section 2.4.3 of the associated report (ORDEQ 2009) accordingly. This would effectively exempt these chemicals as candidates for P2RPs. If this is not done, these chemicals should be given the lowest priority when it comes time to develop and implement P2RPs (Comment 1).

Substances relying on modeled effects should be removed from the P^3 List.

(30) Comment - Water Environment Services (Clackamas County) (Karen Menard) - 67

WES argues that DEQ has not demonstrated that chemicals on the P^3 List pose a threat to the waters of Oregon. There is insufficient scientific information on the concentration and affects of these chemicals to humans, fish and wildlife and aquatic species in waters of the state of Oregon, and the DEQ has made a broad assumption and extrapolation of the affects in other places and applied it to this state. WES respectfully suggests that the P^3 List should be reevaluated with scientific information specific to the State of Oregon.

As mentioned above, SB737 is specific to waters of the state of Oregon. WES is not aware of any studies by the DEQ or others with scientific evidence relating the chemicals on the P^3 List to harmful health effects of human, fish and wildlife and aquatic species in Oregon. To support its rulemaking, DEQ should make publicly available any and all studies relied upon in determining the scope and composition of the P^3 List and proposed "trigger levels" as stated in the draft rule.

Furthermore, there is no evidence provided by the DEQ relating the chemicals on the P^3 List as being introduced into waters of the State of Oregon through wastewater treatment plant effluent.

DEQ's response

DEQ does not agree with narrow interpretations of SB 737 Section 3(2)(a) with respect to "documented harmful effects" for two reasons: (1) A chemical has an inherent toxicity regardless of whether a toxicity test has been performed and regardless of where it is discharged (be that Oregon or elsewhere), and (2) Estimation of this inherent toxicity by means of quantitative structure activity relationships (QSARs) or models is an accepted regulatory practice (e.g., Moore et al., *Environ Toxicol Chem* 22: 1799-1809, 2003; Reuschenbach et al., *Chemosphere* 71: 1986-1995; Cronin et al., *Environ Health Pers* 111: 1376-1390, 2003). DEQ has determined, based on the peer-reviewed literature, that toxicity modeling is an acceptable substitute for toxicity testing until such testing is actually conducted.

DEQ reviewed available data and information to better understand whether pollutants on the P^3 List are or are not likely to be present in such effluent. Although it is possible several chemicals on the P^3 List are not present in effluent, DEQ has determined that it is not possible to "conclusively establish" whether a pollutant is or is not present in effluent without sampling that effluent. DEQ has also determined that it is the legislative intent of SB 737 to require sampling of effluent to determine concentrations and quantities.

1.12 ESTIMATION OF DISCHARGES IN OREGON

(31) Comment - Water Environment Services (Clackamas County) (Karen Menard) - 67

SB737 requires DEQ to identify "…point, nonpoint, and legacy sources of priority listed persistent pollutants from existing data, including an analysis identifying the quantity, concentration and volume of such pollutants discharged by individual sources on an

annual basis" SB737,§3(2)(b). To our knowledge, DEQ has not conducted an analysis identifying the quantity, concentration and volume of chemicals on the P^3 List. DEQ is attempting to delegate its statutory obligation to conduct such analysis by mandating certain sampling and analysis duties to the 52 municipal wastewater treatment plants.

DEQ's response

This rulemaking addresses, in part, the requirements contained in Section 4(1). Section 3 describes requirements related to the report DEQ must provide to the legislature by June 1, 2010. These requirements include section 3(2)(b), which describes an analysis identifying the amounts of the priority listed pollutants discharged. DEQ is currently compiling this information into the SB 737 report due to the Legislature on June 1, 2010.

1.13 FACILITY-SPECIFIC TRIGGER LEVELS

(32) Comment - The Soap and Detergent Association (Paul DeLeo) - 21

The Trigger Levels should be established on a facility-by-facility basis. SDA acknowledges the statutory requirement that pollutants which occur in the effluent of a wastewater treatment plant or water pollution control facility at a concentration greater than the maximum contaminant limit (MCL) established under the Safe Drinking Water Act must be included in a pollution reduction plan for a given facility. However, we note that the majority of the trigger levels are for priority persistent pollutants which do not have an MCL. As stated in our comments of September 15, 2009 to the Oregon DEQ document Selection of Trigger Levels for Oregon's Priority Persistent Pollutants, we believe the trigger levels should be both chemical specific and facility specific. The environments to which treatment plants in Oregon discharge are diverse and will be impacted differently by the individual facilities. As such, a single trigger level for a given chemical applied to all facilities is not appropriate or cost effective.

DEQ's response

DEQ disagrees that trigger levels should be chemical- and facility-specific in order to effectively implement the statutory requirements. Trigger levels have been established on the basis of the inherent toxicity of a pollutant, which is not a function of the facility from which it may be discharged or of the environment into which it might be discharged.

1.14 CONSIDERATION OF BACKGROUND CONCENTRATIONS

(33) Comment - The Soap and Detergent Association (Paul DeLeo) - 21

The Trigger Levels should consider background concentrations. A number of the priority persistent pollutants are ubiquitous in the environment (e.g., PCBs, PAHs, dioxins) and others will have significant non-point sources (e.g., pesticides). As such, background concentrations of all priority persistent pollutants should be measured in the receiving water body to ascertain whether the wastewater treatment plant effluent represents a significant source of a particular pollutant to that water body. For cases where the wastewater treatment plant release is small compared to the existing concentration, a pollution prevention plan *for the wastewater treatment plant effluent* may not have a

measurable impact in reducing the load of pollutants to the receiving water body.

DEQ's response

DEQ disagrees that trigger levels need to consider background concentrations at individual wastewater treatment plants. Trigger levels were selected to determine whether concentration levels of persistent pollutants *in discharge* are high enough warrant reduction. Since sampling of effluent is required at the point of discharge, consideration of the receiving environment is not directly an issue with respect to the development of trigger levels.

1.15 CONSIDERATION OF INFLUENT CONCENTRATIONS

(34) Comment - The Soap and Detergent Association (Paul DeLeo) - 21

The Trigger Levels should consider influent concentration and treatment removal. The wastewater treatment plants should collect data on their influent so that they understand the source level of pollutants to their facility and the extent to which their facilities are able to remove particular pollutants. A substantial body of literature exists regarding the treatability of many of the pollutants on the priority persistent pollutant list, so facilities can understand whether they are operating under optimal conditions.

DEQ's response

Consideration of influent concentration and treatment removal is not required by SB 737. While such information may be of interest to specific treatment plants as they construct any required reduction plans, influent concentration and treatment removal have no bearing on trigger levels as these were selected solely on the basis of inherent toxicity and protection of human health or aquatic life.

2. CHANGES TO SELECTED TRIGGER LEVELS

2.1 TRIGGER LEVEL FOR β-SITOSTEROL (CASRN 83-46-5)

(35) Comment - Northwest Pulp & Paper Association (Kathryn VanNatta) – 35 and National Council for Air and Stream Improvement, Inc. (Dr. Jeff Louch) - 42

Peer-reviewed literature does not support inclusion of β-sitosterol on the P^3 List.

Peer-reviewed literature does not support inclusion of β-sitosterol on the P^3 List. The source of the β-sitosterol TL is the NPDES discharge permit of Clearwater Paper's pulp and paper mill in Lewiston, Idaho. Specifically, Attachment A to that permit spells out studies to assess the potential impact of the mill's discharge on endangered species. In this context, the 1 ppb toxicity benchmark for β-sitosterol is a trigger for additional research if it is exceeded in the mill's final effluent. As such, 1 ppb is not a limit per se, but is instead yet another TL.

[…]

In summary, the literature indicates that exposure to relatively pure (>95%) β-sitosterol has the potential to manifest effects on non-traditional endpoints at concentrations ≥25 ppb. However, considering the scientific debate concerning the ultimate significance of non-traditional endpoints (Comment 3), these results do not constitute clear documentation of harmful effects. On the other hand, experimental results suggesting effects on traditional, more definitive endpoints (e.g., mortality) at 10 ppb are subject to significant uncertainties resulting from the use of impure materials to prepare exposure solution(s), so any observed effects cannot be attributed to the presence of one chemical over another. Thus, overall, there is no sound scientific basis for concluding that β-sitosterol is, in fact, harmful to aquatic life, and this chemical should be removed from the P^3 List.

DEQ's response

DEQ is not reviewing pollutants on the priority persistent pollutant list at this time, and DEQ contemplates no changes to the P^3 List itself before July 2011. DEQ selected the value for β-sitosterol (CASRN 83-46-5) from the Clearwater Paper NPDES permit because it represents a regulatory benchmark agreed upon by two federal agencies (NOAA, U.S. EPA). DEQ reviewed the information contained in the comment, and the literature cited therein, and as a result DEQ will revise the trigger level for β-sitosterol from 1 μg/L to 25 μg/L.

2.2 TRIGGER LEVEL FOR β-SITOSTANOL (CASRN 83-45-4)

(36) Comment - Northwest Pulp & Paper Association (Kathryn VanNatta) – 35 and National Council for Air and Stream Improvement, Inc. (Dr. Jeff Louch) - 42

Peer-reviewed literature does not support inclusion of β-sitostanol on the P^3 List.

Peer-reviewed literature does not support inclusion of β-sitostanol on the P^3 List. The "permit limit" cited by DEQ as the basis for proposing a 1 ppb TL for β-sitostanol is not a permit limit, but is instead a toxicity benchmark that was derived for β-sitosterol specifically (Comment 5). In fact, there are no data specifically addressing the toxicology of β-sitostanol (i.e., stigmastanol) in the peer-reviewed or gray literature other than work performed by NCASI. That work (NCASI 1999) showed that 7-d exposures to nominally 100 ppb of β-sitostanol resulted in no observable effects on the survival or reproduction of *Ceriodaphnia dubia* or the survival and growth of fathead minnow, and a 28-d survival and growth test at the same concentration showed no effects on fathead minnow egg hatchability, larval or juvenile survival, or juvenile growth. Longer (56-day) life-cycle exposures at 73 ppb showed no effects on gonad somatic indices, liver somatic indices, or condition factors of the adult fathead minnows, and egg production, egg size, and egg hatchability were also not affected. Per the above, there is no basis for concluding that β-sitostanol is harmful to aquatic life. As a consequence, β-sitostanol should not be on the P^3 List and DEQ should remove it.

DEQ's response

DEQ selected the value for β-sitostanol (CASRN 83-45-4) from the Clearwater Paper NPDES permit because it represents a regulatory benchmark agreed upon by two federal agencies (NOAA, U.S. EPA). However, in view of the discussion in the comment, and the literature cited therein, DEQ will raise the trigger level for β-sitostanol from 1 to 75 μg/L. At this time, DEQ contemplates no changes to the P^3 List itself before July 2011.

2.3 TRIGGER LEVEL FOR D5 (CASRN 541-02-6)

(37) Comment - Silicones Environmental Health and Safety Council (Dr. Charles Staples, Assessment Technologies, Inc.) - 58

We represent two compounds on the priority persistent pollutant specifically D4 (CAS RN 556-67-2) and D5 (CAS RN 541-02-6). We have provided to the OR DEQ extensive materials and comments as you have worked through the development of the final list and now the trigger levels. We have also participated in two open conference calls hosted by you. We plan to provide comments on the trigger levels for these compounds. However, we find in the materials provided on the OR DEQ website an apparent error. Regarding the trigger level for D5, the Table 1 of the proposed trigger levels gives for D5 a trigger value of 2 microgram per liter and cites as the basis of this the following: "[A4] Literature review. EPA 737-F-96-005 (1996), LOEC, larval growth." Using Google to search for the EPA report, the reference turns out to be a Fact Sheet for the compound fipronil. I have attached the Fact Sheet to this note. Fipronil is also on the OR DEQ persistent pollutant list and uses the same EPA report for the development of its trigger level. Since the silicone-based D5 has nothing to do with fipronil, we conclude a simple error was made in the preparation and documentation of the trigger level for D5. Can you please investigate this and provide the correct documentation as to how the trigger level for D5 was derived?

DEQ's response

Thank you for calling this discrepancy to our attention. The correct reference for the D5

trigger level is: "Springborn Laboratories. 2000. Decamethylcyclopentasiloxane - 14-day prolonged acute toxicity to rainbow trout (*Oncorhynchus mykiss*) under flow-through conditions. Report No. 12023.6125. Silicones Environmental, Health and Safety Council (SEHSC)." This reference was reported by Environment Canada in their November 2008 assessment of the D5 challenge. The correct trigger level for D5 is therefore 16 ug/L, and not 2 ug/L. Our documentation will be corrected to reflect this and a corrected version of Table A and the trigger level selection report has been placed on our website.

(38) Comment - Silicones Environmental, Health and Safety Council of North America (Tracy Guerrero) - 58

The available peer-reviewed toxicity data for D5 do not support the establishment of a trigger level given that toxicity has not been observed in aquatic organisms, up to the limit of solubility. In addition, DEQ guidance notes that substances that have a LogKow > 8 should be excluded from consideration on the P3L because toxicity would not be expected at saturation for these compounds. Consequently, there is no basis for the development of a trigger level for D5**.**

DEQ's response

In DEQ's initial analysis of the PBT characteristics of D5, DEQ reviewed Environment Canada's analysis and conclusions, which had an approach similar to DEQ's. Environment Canada concluded that D% is a PBT and that "*…it is possible that toxicity may manifest at the solubility limit if sufficient exposure and sensitive species were present…*" However, in response to comments, the proposed trigger level for D5 was raised to 16 μg/L, the theoretical solubility limit.

(39) Comment - Silicones Environmental, Health and Safety Council of North America (Tracy Guerrero) - 58

The potential for sample contamination during material handling, transport, and analysis for D4 and D5 require the development of a comprehensive QA/QC program when monitoring for these materials in addition to substantial methodological and analytical expertise. An essential component of all SEHSC sponsored monitoring studies for assessing these materials is a comprehensive QA/QC program. SEHSC's members have considerable experience with monitoring siloxanes in domestic and international water bodies, and should be considered a resource to the DEQ for monitoring D4 and D5 in Oregon.

DEQ's response

Thank you for offering this technical support. The DEQ laboratory may contact you during development of the project quality assurance plan for insights into how best to sample and analyze D4 and D5.

2.4 TRIGGER LEVEL FOR CHLORPYRIFOS (CASRN 2921-88-2)

(40) Comment - Dow AgroSciences (Brian Bret) - 41

The proposed trigger level for chlorpyrifos is 0.02 ug/L. According to the Flowchart notes

in Table 1 Proposed Trigger Levels for Priority Persistent Pollutants (…) the Canadian Water Quality criterion (step A3) was used instead of a value that is published from one of the prior steps in the flow chart. There is a value defined for chlorpyrifos in the AWQC (A1) database. It is 0.041 ug/L for Criterion Continuous Concentration (CCC). DAS believes the AWQC value of 0.041 ug/L should be used to set the trigger level for chlorpyrifos.

DEQ's response

DEQ agrees with the comment. Consistent with the trigger level selection procedure, the trigger level for chlorpyrifos was changed to 0.04 μg/L to reflect the value in the latest (2009) version of U.S. EPA's "National Recommended Water Quality Criteria."

2.5 TRIGGER LEVEL FOR OXYFLUORFEN (CASRN 42874-03-3)

(41) Comment - Dow AgroSciences (Brian Bret) - 41

The proposed trigger level for oxyfluorfen is 1.0 ug/L. Since no value is provided in the AWQC (A1) database, the next step is the ALB (step A2) database. According to the OPP ALB, oxyfluorfen should have a trigger level of 1.3 ug/L for chronic fish toxicity. It is possible this value was rounded off, however the full value of 1.3 ug/L should be used.

DEQ's response

DEQ agrees with the comment and the trigger level for oxyfluorfen was revised to 1.3 μg/L.

2.6 TRIGGER LEVEL FOR TRIFLURALIN (CASRN 1582-09-8)

(42) Comment - Dow AgroSciences (Brian Bret) - 41

The proposed trigger level for trifluralin is 0.2 ug/L. According to the Flowchart notes in Table 1 Proposed Trigger Levels for Priority Persistent Pollutants (…) the Canadian Water Quality criterion (step A3) was used instead of a value that is published from one of the prior steps in the flow chart. No AWQC (A1) value is available but an ALB (A2) value of 1.14 ug/L exists in the ALB table for chronic fish toxicity. DAS believes the ALB value of 1.14 ug/L should be used to set the trigger level for trifluralin.

DEQ's response

DEQ agrees with the comment. Consistent with the trigger level selection procedure, the trigger level for trifluralin was changed to 1.1 μg/L to reflect the value used by U.S. EPA's Office of Pesticide Programs.

2.7 TRIGGER LEVEL FOR HEXABROMOCYCLODODECANE (HBCD) (CASRN 25637-99-4)

(43) Comment - Albemarle Corporation (Marcia L. Hardy) - 63

Experimental data on HBCD from guideline/GLP compliant studies are available and indicate Oregon's proposed trigger level is not appropriate. A chronic fish early life stage

study in rainbow trout found no effects at the limit of solubility of the gamma isomer. The gamma isomer is the predominant isomer in the commercial HBCD product.

(44) Comment - American Chemistry Council - 26

For HBCD, it appears DEQ's methodology to propose a trigger level was the use of Ecological Structure Activity Relationships (ECOSAR). The Panel supports the use of an established NOEL used for freshwater, which is 3.1 µg/L; 3 orders of magnitude higher than the proposed ECOSAR level (0.001 µg /L). This value was determined in a GLP study conducted in 1998 by Drottar KR and Krueger1. This study, testing the most sensitive species to HBCD, was evaluated and determined suitable for use in a recent European Union (EU) HBCD Risk Assessment, Final Report, May 2008 carried out by Sweden and available to the public on the following website.

DEQ's response

DEQ reviewed the information presented in these comments has revised the trigger level for HBCD from 0.001 µg/L to this compound's estimated solubility limit of 3.1 µg/L.

2.8 TRIGGER LEVEL FOR TETRABROMOBISPHENOL A (TBBPA) (CASRN 79-94-7)

(45) Comment - Albemarle Corporation (Marcia L. Hardy) - 63

Chronic studies are a more appropriate basis for setting trigger levels than acute studies. Oregon has chosen the modeled fish ChV for use in setting trigger levels (page 25, Senate Bill 737). Experimental data from a chronic study in fish, if available, is preferred. TBBPA's NOEC in the 35-d fish early life stage study, 0.16 mg/L for 35 d, is recommended for use with no assessment factor. This value is approximately 800 times higher than the proposed trigger level of 0.0002 mg/L.

(46) Comment - American Chemistry Council - 26

For TBBPA, the Panel suggests DEQ to consider the use of existing freshwater long term studies instead of the value taken from the Lee et al (1993). Values established in the long term studies: Fish - NOEC = 0.16 mg/L (160 µg/L); Daphnia - NOEC = 0.3 mg/L (300 µg/L) as opposed to the 1 µg /L suggested in the Lee et al paper; Chironomus - No specific NOEC value could be derived for the Chironomus, which is the most sensitive species (NOEC below 0.066 mg/L). Therefore, EC10 of 12.7 µg/L established by the Acartia study, which is more than 60 times the suggested 0.2 µg/L in the Oregon proposal, was used in the development of the European Union (EU) risk assessment as a protective value.

DEQ's response

DEQ reviewed the information presented in these comments and has revised the trigger level for TBBPA from 0.2 µg/L to 160 µ/L.

2.9 TRIGGER LEVEL FOR DECABROMODIPHENYL ETHER (PBDE-209) (CASRN 1163-19-5)

Comment - Albemarle Corporation (Marcia L. Hardy) - 63

Oregon's proposed trigger level, 50 µg/L, is in excess of PBDE-209's measured water solubility, <0.1 µg/L. Thus, if detected in sewage effluent, PBDE-209 would not be present in solution at the proposed trigger level. Substances must be in solution to be absorbed.

DEQ's response

Because of its chemical characteristics, the majority of any PBDE-209 in effluent would likely be associated with the solid, not dissolved, fraction of the whole effluent. It may be possible for PBDE-209 to be present in the solid fraction of effluent at a concentration of 50 ug/L or greater. Because chemical analysis will be performed on whole effluent, DEQ does not feel it is necessary to change the trigger level value originally proposed for PBDE-209.

2.10 TRIGGER LEVELS FOR CHOLESTEROL (CASRN57-88-5) & COPROSTANOL (CASRN 360-68-9)

(47) Comment - Water Environment Services (Clackamas County) (Karen Menard) - 67

On November 12, 2009, Brian Boling went on to say that cholesterol and coprostanol "will be in everyone's wastewater…it is ridiculous to have triggers this low."

(48) Comment - City of Eugene (Peter J. Ruffier) - 66

We concur with ACWA that those chemicals […] where municipal pollution prevention would not be effective at reducing concentrations, such as cholesterol, be removed from 'Table A' as part of its June 1, 2010 report to the Oregon Legislature (see SB 737, Section 3).

DEQ's response

The value of a trigger level is not a function of the expected quantity of that pollutant in effluent. Rather it is a function of the toxicity of that pollutant with respect to human health and aquatic life. Research suggests that coprostanol has an affinity to estradiol-binding sites and that large amounts may pose a threat to aquatic invertebrates. Evaluation of approaches that may or may not reduce cholesterol or coprostanol levels in effluent is a determination that will be appropriate to consider during the preparation of a persistent pollutant reduction plan.

2.11 TRIGGER LEVELS FOR PYRETHROID INSECTICIDES

(49) Comment - Bayer Crop Sciences (Richard Allen) - 22

[Deltamethrin (CASRN 52918-63-5] Use of [0.0004 µg/L] as a trigger value for wastewater treatment plant effluent is overly protective as it does not take into account

dilution of effluent in the receiving water body or the duration of exposure.

DEQ's response

DEQ did not evaluate potential exposure or the dilution of effluent because pollutant levels are to be measured directly in effluent at the point of discharge.

(50) Comment - Bayer Crop Sciences (Richard Allen) - 22

The water quality guideline refers to the concentration dissolved in water and hence bioavailable to the test organism. […] Therefore any analysis […] should take into account the amount of DOC in the effluent and quantify or determine the amount […] available in the water phase.

DEQ's response

DEQ disagrees that the amount of DOC should be taken into account in the development or implementation of trigger levels. Although some water quality guidelines were selected as trigger levels, a trigger level is to be applied to the total amount of pollutant in an effluent sample, not just to the dissolved phase. Binding to DOC or other particulate matter may remove the pollutant from the dissolved phase only to move it into sediment. Biological activity in the sediment can remobilize the pollutant as carbon and other particles are ingested by benthic organisms.

(51) Comment - Bayer Crop Sciences (Richard Allen) - 22

We presume the difference in trigger values occurs because aquatic life guideline values for lambda-cyhalothrin and bifenthrin have not been published - however your own methodology requires that a review of peer-reviewed literature is undertaken to derive an aquatic life trigger value for comparison with a human health trigger value.

DEQ's response

DEQ agrees with the comment. We are revising the trigger levels for cis-bifenthrin (CASRN 82657-04-3) and lambda-cyhalothrin (CASRN 91465-08-6) to reflect values from the aquatic toxicity literature.

For cis-bifenthrin, Siegfried (*Environ Toxicol Chem* 12: 1683-1689, 1993) reports an LD_{50} of 1.1 μg/L for aquatic invertebrates, Wang et al (*J Envi Sci* 21: 1710-1715, 2009) a non-observed-effective-concentration for a reproduction endpoint of 0.01 μg/L for *D. magna*, and Jin et al (*Aquatic Toxicol* 95: 347-354, 2009) disruption in endocrine functions in zebrafish after short exposure to 150 μg/L. Consistent with the choice of the lowest ecologically relevant endpoint, the trigger level for cis-bifenthrin was changed to 0.01 μg/L.

For lambda-cyhalothrin, Giddings et al (*Ecotoxicology* 18: 239-249, 2009) reports a median HC_5 value of 0.00105 μg/L for invertebrates and a community NOEC of 0.01 μg/L. Consistent with the choice of the lowest ecologically relevant endpoint, the trigger level for lambda-cyhalothrin was changed to 0.01 μg/L.

(52) Comment - DuPont Crop Protection (Patricia G. Devine) - 61

DuPont recommends that the trigger level for esfenvalerate [CASRN 66230-04-4] should be based on a human health standard, consistent with the level for bifenthrin and lambda-cyhalothrin, and consistent with the use of the MCL as the highest level decision point.

DEQ's response

DEQ disagrees that a human health value is the only type of value that should be considered for esfenvalerate. SB 737 does not expressly state an alternative approach for chemicals without an MCL. However, the preamble of the legislation does require DEQ to consider "…the health and well-being of humans, fish and wildlife, especially aquatic species…" DEQ has determined that, when an MCL is not available, the lower of a human health- or an aquatic life-based value is the appropriate choice. The trigger level selection process was designed to address the requirements set forth in the statute's preamble, as well as the specific requirement for when an MCL is available.

2.12 INCLUSION OF INORGANIC MERCURY (CASRN 7439-97-6)

(53) Comment - Water Environment Services (Clackamas County) (Karen Menard) - 67

The final DEQ SB 737 P^3 List adopted by DEQ in October of 2009 includes methyl mercury (CASRN 22967-92-6). It does not include Mercury (inorganic) (CASRN 7439-97-6). The Department cannot issue a trigger level or P3 Goal Value for a chemical not included on the DEQ P3 inventory as finalized.

(54) Comment - City of Corvallis (Larry Lamperti) - 06

{The October 2009 P^3 List included methylmercury but not inorganic mercury. The trigger level list includes both forms of mercury. DEQ cannot issue a trigger level for a chemical not on the October 2009 P^3 List.}

(55) Comment - City of Eugene (Peter J. Ruffier) - 66

The final DEQ SB 737 P^3 List adopted by DEQ in October 2009, included Methylmercury (CASRN 22967-92-6). It does not include Mercury (CASRN 7439-97-6). The Department cannot issue a trigger level or P3 Goal Value for a chemical not included on the DEQ P3 inventory as finalized.

(56) Comment - Oregon Association of Clean Water Agencies (Janet Gillaspie) - 16

The final DEQ SB 737 P^3 List adopted by DEQ in October of 2009 includes methyl mercury (CASRN 22967-92-6). It does not include Mercury (inorganic) (CASRN 7439-97-6). The Department cannot issue a trigger level or P3 Goal Value for a chemical not included on the DEQ P3 inventory as finalized.

(57) Comment - League of Oregon Cities (Daniel Eisenbeis) - 68

… we recommend that […] Mercury (inorganic) (CASRN 7439-97-6) be excluded from the

revised rules. Our understanding is that [it] is not included in the final October 2009 P^3 List adopted by DEQ.

(58) Comment - Pacific Klamath Energy, LLC (Raymond Martens) - 69

Klamath Energy adopts each of the comments to the Proposed Rule set forth in ACWA's February 1, 2010 letter to you [i.e., DEQ].

DEQ's response

DEQ considered the comments submitted regarding the inclusion of inorganic mercury (CASRN 7439-97-6) and has removed it from both the P3 and the analytical lists.

2.13 REMOVAL OF TRIBUTYLTIN OXIDE (TBTO) (CASRN 56-35-9)

(59) Comment - Water Environment Services (Clackamas County) (Karen Menard) - 67

We also recommend removing Bis (tributyltin) oxide (TBTO, hexabutyldistannoxane) (CASRN 56-35-9) since DEQ has concluded that this chemical is not likely to be found in municipal wastewater effluent, …

(60) Comment - Oregon Association of Clean Water Agencies (Janet Gillaspie) - 16

We also recommend removing Bis (tributyltin) oxide (TBTO, hexabutyldistannoxane) (CASRN 56-35-9) since DEQ has concluded that this chemical is not likely to be found in municipal wastewater effluent, …

(61) Comment - City of Eugene (Peter J. Ruffier) - 66

We concur with ACWA that those chemicals the DEQ concludes are not likely to appear in Oregon municipal effluent, including Bis (tributyltin) oxide [TBTO, hexabutyldistannoxane], …

(62) Comment - League of Oregon Cities (Daniel Eisenbeis) - 68

…we recommend that Bis (tributyltin) oxide (TBTO, hexabutyldistannoxane) (CASRN 56-35-9) be excluded from the revised rules. Our understanding is that DEQ has determined that the former is not likely found in municipal wastewater effluent.

DEQ's response

DEQ has been unable to find information that conclusively establishes that TBTO will not be found in municipal wastewater treatment plant effluent. Therefore, TBTO will remain among the pollutants for which DEQ is establishing a trigger level.

3. POLICY/LEGAL COMMENTS - TRIGGER LEVELS

3.1 USE TERMINOLOGY OTHER THAN "TRIGGER LEVELS"

(63) Comment - City of Gresham (Paul L. Eckley) - 65

{Use "P3 Goal Values" instead of trigger levels.}

(64) Comment - Oregon Association of Clean Water Agencies (Janet Gillaspie) - 16

We suggest that the DEQ rename the "trigger levels" to a moniker more descriptive of the intended use of these levels. We suggest the term "P3 Goal Values" be used in place of "trigger levels" and will use that term throughout our comments.

(65) Comment - Water Environment Services (Clackamas County) (Karen Menard) - 67

WES believes the DEQ should rename the phrase "trigger levels" to something more reflective of the intended use of these numeric values. The word "trigger" itself implies an exceedence similar to a water quality standard, which could expose DEQ or permittees to third party lawsuits. Since DEQ staff has stated repeatedly that trigger levels are not water quality standards, we join with ACWA in noting the phrase "P^3 Goal Values" is more appropriate and will be used throughout our comments. Overall, the P^3 Goal Values rule is overly complex, and is likely to have unintended consequences for DEQ and permittees.

(66) Comment - League of Oregon Cities (Daniel Eisenbeis) - 68

Whether or not numeric values are retained in the final rules, in order to reduce confusion we suggest that the term "trigger levels" be replaced with "P3 goal values."

(67) Comment - City of Eugene (Peter J. Ruffier) - 66

Notwithstanding the language in section (2)(c), the term 'trigger levels' can be misconstrued as a water quality standard. We recommend reference to 'trigger level' in all applicable and related documents be substituted with P3 Goal Values, that is, priority persistent pollutant goal value.

(68) Comment - Water Environment Services (Clackamas County) (Karen Menard) - 67

In the Trigger Level Rule, we recommend the term P^3 Goal Values be substituted throughout for ~~trigger level~~.

DEQ's response

DEQ carefully considered what term to apply to the level of persistent pollutants determined by the proposed rules that must be addressed in reduction plans. DEQ considers the term "trigger level" to most accurately describe the fact that the numerical values will be used for the sole purpose of "triggering" the requirement that a permittee

prepare a persistent pollutant reduction plan. DEQ does not agree that the proposed term of "P3 goal values" accurately reflects the purpose of the numerical values. In fact, the proposed term would likely be confused with the "focused goals" required by statute to be included in the reduction plans.

3.2 TRIGGER LEVELS ARE NOT WATER QUALITY STANDARDS

(69) Comment - Northwest Pulp & Paper Association (Kathryn VanNatta) - 35

Trigger Levels Are Not Water Quality Standards. Proposed OAR 340-045-0100(2)(c) language needs to be clarified and changed to align with the legislative intent of SB 737 (2007), which clearly states that a trigger level is not to be used as a water quality standard for purposes of implementing the Clean Water Act in Oregon. NWPPA supports specific suggestions by the Association of Clean Water Agencies to clarify proposed subsection (2)(c).

(70) Comment - Pacific Klamath Energy, LLC (Raymond Martens) - 69

Klamath Energy adopts each of the comments to the Proposed Rule set forth in ACWA's February 1, 2010 letter to you [i.e., DEQ].

DEQ's response

In order to prevent confusion of a trigger level with a water quality standard, DEQ has included in the proposed rule the language from SB 737 stating that trigger levels are not water quality standards under state or federal law.

3.3 SB 737 DOES NOT REQUIRE TRIGGER LEVELS

(71) Comment - City of Corvallis (Larry Lamperti) - 06

{SB 737 does not require development and implementation of trigger levels.}

{SB 737 does not require the adoption of trigger levels by rule.}

(72) Comment - City of Gresham (Paul L. Eckley) - 65

{SB 737 does not require the Environmental Quality Commission to adopt trigger levels at all.}

(73) Comment - City of Portland, Bureau of Environmental Services (Kim Cox) -24

SB 737 specified that MCLs would be used where available to determine whether a reduction plan would be required for a specific P3 substance. The statute further indicates that absent an MCL the EQC would determine by rule which other P3 pollutants would need to be included in the treatment plant's toxics reduction plans. There is no specific requirement in SB 737 for DEQ and the EQC to develop trigger levels. As an alternative, determining the likely presence of a P3 pollutant source within the typical wastewater treatment plant's service area could be used to develop a reduction plan.

(74) Comment - Oregon Association of Clean Water Agencies (Janet Gillaspie) - 16

Many of ACWA's concerns can be addressed by returning to the language of SB 737 and implementing the law as originally contemplated. Most importantly, SB 737 does not require the Environmental Quality Commission (EQC) to adopt numeric trigger levels at all. The bill states that EQC may determine by rule which persistent pollutants "*should be included in permittee's plans for reducing permittees' discharges..."*. SB 737, § 4(1)(a)(B). This does not require EQC to set any numeric level above which the P3 compounds will be addressed in reduction plans; instead, it only instructs EQC to develop a list of compounds that permittees must include in their plans. Moreover, nothing in the Clean Water Act or Oregon's regulations requires the EQC to adopt such numeric limits as part of this program.

(75) Comment - Water Environment Services (Clackamas County) (Karen Menard) - 67

Permittees are to submit reduction plans to DEQ of persistent pollutants "…that occur in concentrations greater than the maximum contaminant levels," (SB737,§(1)(a)(A)) or that the EQC "…determines by rule should be included in its permittees' plans" SB737,§(1)(a)(B). While the P^3 List contains some chemicals with MCLs, the vast majority (72%) of the listed chemicals do not. WES believes that the best use of the municipalities' time and monies will be in crafting and implementing effective pollution prevention plans for the broad groups of chemicals on the correctly-constructed P^3 List. This third requirement does not mention a selection of trigger levels. The intention is clear that the EQC should include any additional pollutants of concern for incorporation into the municipal wastewater treatment plants pollution prevention plans, not to "select" trigger levels.

(76) Comment - League of Oregon Cities (Daniel Eisenbeis) - 68

The proposed rules would implement Section 4(1)(a)(B) of SB 737 (2007), which authorizes the Environmental Quality Commission (EQC) to determine by rule which priority persistent pollutants (P3) without a Maximum Contaminant Level (MCL) should be included in toxics reduction plans. It is important to note that the language of the statute does not require or suggest that the EQC determine numeric values for this purpose. We believe that the intent of SB 737 is to deliver a simple set of guidance for development of toxics reduction plans by affected municipal wastewater treatment plants. […] It is worth noting that Section 4(2)(a) of SB 737 includes a requirement for toxics reduction plans to describe P3 compound levels in effluent, but this language does not require adoption of numeric trigger levels as proposed in the draft rules.

(77) Comment - Confederated Tribes of the Umatilla Indian Reservation (William H. Burke) - 19

There should be a "trigger" or action level for every priority persistent pollutant. We believe that we need to identify some level of persistent toxic pollutants that would be regarded as a level at which action should be taken where possible to reduce the pollutant

of concern.

DEQ's response

DEQ has determined that this rulemaking to establish trigger levels meets the legislative intent of SB 737 to measure and quantify persistent pollutants in effluent and to determine the need for a persistent reduction plan. In reviewing the history of the legislation and in particular the discussions surrounding implementation, it is clear that a trigger level concept was fully vetted and had wide support from the SB 737 Work Group during the 2009 legislative session. DEQ has further determined that rulemaking for trigger levels is consistent with assisting the Environmental Quality Commission in determining which priority pollutants will require a reduction plan. Without numeric trigger levels, permittees would be required to prepare reduction plans for all priority-listed pollutants regardless of the levels of these pollutants in the permittee's effluent. That outcome was not in-line with the legislative intent of SB 737.

3.4 DO NOT PUT TRIGGER LEVELS IN RULE

(78) Comment - Water Environment Services (Clackamas County) (Karen Menard) - 67

Returning to the plain language of SB737 and adopting a list of persistent pollutants – rather than numeric limits – will carry out the purpose of the law as originally envisioned: pollutant reduction through broad-based plans implemented on a municipal level (SB737§4(2)).

The numeric levels as currently proposed are based on emerging information and science, much of it not specific to conditions in Oregon. Including such numbers in a rule, regardless of limiting language in SB 737 or the proposed rule itself, may not prevent the levels from morphing into de facto water quality standards at a future date. Having such numbers on the books will open DEQ to litigation if they are not included in permits, or potentially even administrative action to force DEQ to formally adopt the values as water quality standards. We recommend that DEQ avoid this proverbial slippery slope by revising the proposed rule as a list rather than numeric levels.

By listing the P3 parameters likely to be found in municipal effluent in the rule, and using the P3 Goal Values as guidance, the P3 Goal Values can be updated and revised by the DEQ with additional scientific information.

Additionally, the proposed approach carries the risk of not allowing DEQ to adapt tomorrow as the science evolves. Setting trigger levels in administrative rules at this time using the limited, non-site specific data currently available could prevent future better decisions because of legal barriers around backsliding and antidegradation requirements. This could result in spending valuable dollars to meet a meaningless target rather than using that money to achieve greater environmental benefit elsewhere.

Measuring emerging contaminants is an emerging science. Even the DEQ laboratory is wrestling with the proper method detection and analytical techniques necessary to quantify low levels of the emerging contaminants such as pharmaceuticals and personal

care products that are included on the Priority Persistent Pollutant inventory. For many of these chemicals, there are no EPA Standard Methods for standardizing the analysis of these chemicals.

(79) Comment - Pacific Klamath Energy, LLC (Raymond Martens) - 69

Klamath Energy adopts each of the comments to the Proposed Rule set forth in ACWA's February 1, 2010 letter to you [i.e., DEQ].

DEQ's response

DEQ agrees that the current state of the science for some of these pollutants is evolving at rapid rates. DEQ used the best available current information to develop proposed trigger level values. Trigger level values pertain only to the need to prepare the reduction plan required to be submitted by July 1, 2011 and likely won't be effective long enough for the applicable science to change. SB 737 recognizes that information and science will change and requires that DEQ report to the legislature whenever it adds or removes a persistent pollutant from the priority list.

DEQ has included the explicit statement from SB 737 in the final rule that "Trigger levels are not standards of quality and purity for the waters of this state for the purposes of ORS 468B.048 or the federal Clean Water Act." We think this language is sufficiently clear to preclude use of the trigger levels as water quality standards.

3.5 DO NOT CONSIDER LEGACY POLLUTANTS

(80) Comment - League of Oregon Cities (Daniel Eisenbeis) - 68

We also recommend that the rules exclude Tier II (legacy and globally-sourced) P3 compounds from toxics reduction planning requirements for municipal wastewater treatment plants, as DEQ "has determined that broad scale toxic reduction efforts will not significantly reduce either of these classes of pollutants."

(81) Comment - City of Corvallis (Larry Lamperti) - 06

{The City is concerned about needing to sample for the Tier II legacy pollutants. These pollutants should be removed from the P^3 List, not have trigger levels assigned to them, and not need to be monitored.}

(82) Comment - City of Gresham (Paul L. Eckley) - 65

{The City is concerned about Tier II legacy pollutants being included in the rule. They should not be included.}

(83) Comment - City of Eugene (Peter J. Ruffier) - 66

DEQ's inclusion of Tier II legacy persistent pollutants identified in the Interim Final List in 'Table A, Proposed Trigger Levels for Priority Persistent Pollutants', is inconsistent with SB 737 and the Department's own conclusions as reported in June 2009, which state: "However, consistent with the feasibility of reduction requirements of SB 737 Section 3(2)(a)(D), DEQ has determined that broad scale toxic reduction efforts will not significantly reduce either of these classes of pollutants. Globally-sourced pollutants

typically reach Oregon from overseas sources through Aeolian transport and subsequent deposition from air, sources which are outside of the state's jurisdiction. Legacy pollutants include those for which local, as well as national and international, reduction efforts have been in place for some time. Their recalcitrance (and ubiquity) in the environment means that, event with control measures already in place, it will be many years before non-detect levels are achieved." Since by definition legacy pollutants are no longer legally allowed to be manufactured, distributed, or used and therefore municipal wastewater treatment facilities have no means to actively and directly control the sources of these pollutants, we request that the Department remove legacy P3 chemicals included in 'Table A'.

(84) Comment - Oregon Association of Clean Water Agencies (Janet Gillaspie) - 16

We recommend that all Legacy/Tier II chemicals be removed from the P3 Goal Value inventory. Municipal pollution prevention plans will not be effective in reducing concentrations of these pollutants through pollution prevention - - the focus of SB 737. According to DEQ‟s report Senate Bill 737: Development of a Priority Persistent Pollutant (P3) List for Oregon (June, 2009), DEQ determined that for Tier 2- Legacy Persistent Pollutants that "*broad scale toxic reduction efforts will not significantly reduce either of these classes of pollutant"3.* The report continues that globally-sourced pollutants reach Oregon from overseas sources, and that legacy pollutants have local, national and some international reduction efforts that have been in place for some time.

(85) Comment - Water Environment Services (Clackamas County) (Karen Menard) - 67

As Bruce Hope of the DEQ stated during his presentation at the January 28, 2010 Public Information Session of SB737 Trigger Level Rulemaking, many of the Tier II chemicals on the P^3 List are banned and have been for many years. There are also "…the new legacy pollutants" that are in the process of being banned on a national level. As Mr. Hope stated, the problem with these pollutants "is stock piling," which cannot be managed through regulating current discharges from municipal wastewater treatment plants.

We recommend that Legacy/Tier II pollutants be removed from the P^3 List. According to DEQ's report Senate Bill 737: Development of a Priority Persistent Pollutant (P3) List for Oregon (June, 2009), DEQ determined that for Tier II- Legacy Persistent Pollutants that "*broad scale toxic reduction efforts will not significantly reduce either of these classes of pollutant".* The report continues that the primary source of these pollutants is from outside Oregon, typically overseas. Given that SB737 only seeks the development of pollution reduction plans for Permittee wastewater treatment plants, it is overbroad, inapplicable and burdensome for DEQ to seek to include Tier II pollutants on the P^3 list for which Permittees should have to create a pollution reduction plan. It is generally understood and agreed within the wastewater treatment industry that these Legacy/Tier II pollutants are not entering the waters of the state through treatment plants, but through other sources, and therefore it is inappropriate to seek to compel Permittees to develop pollution reduction plans that are broader than the scope of the state's authority to regulate plant discharges.

The EPA's comprehensive approach to reduction of Legacy/Tier II pollutants in order to manage their risks is far more likely to have a positive impact on the waters of the State of Oregon.

[…]

In lieu of seeking to compel permittees to develop plans for the reduction of pollutants that are not present in their discharges, we commend to DEQ the EPA approach.

DEQ's response

One commenter requested DEQ remove legacy pollutants from its priority persistent pollutant list. DEQ is not re-evaluating the pollutants included in the list at this time. Other commenters requested that legacy pollutants (those pollutants included in Tier II of the priority persistent pollutant list) not be included within this rulemaking to establish trigger levels. DEQ has determined that inclusion of legacy pollutants in this rulemaking is necessary to meet the specific requirements and intent of SB 737. The statute does not include any provisions exempting specific classes or categories of pollutants from consideration, and explicitly highlights activities directly relevant to legacy pollutants (see SB 737, § 4(2)(a)(3)) that municipalities may ultimately include in their persistent pollutant reduction plans should effluent concentrations exceed trigger levels.

3.6 ADOPT AN INVENTORY OF PERSISTENT POLLUTANTS

(86) Comment - Oregon Association of Clean Water Agencies (Janet Gillaspie) - 16

We recommend that the Environmental Quality Commission (EQC) adopt an inventory of the listed Priority Persistent Pollutants (P3) that are likely to be found in Oregon municipal wastewater effluent. Returning to the plain language of SB 737 and adopting a list of persistent pollutants – rather than numeric limits – will carry out the purpose of the law as originally envisioned: pollutant reduction through broad-based plans implemented on a municipal level. SB 737, §4(2). The numeric levels as currently proposed are based on emerging information and science, much of it not specific to conditions in Oregon. Including such numbers in a rule, regardless of limiting language in SB 737 or the proposed rule itself, may not prevent the levels from morphing into de facto water quality standards at a future date. Having such numbers on the books will open DEQ to litigation if they are not included in permits, or potentially even administrative action to force DEQ to formally adopt the values as water quality standards. We recommend that DEQ avoid this proverbial slippery slope by revising the proposed rule as a list rather than numeric levels. Using the "list" approach will not undermine the purpose of SB 737 and instead will strengthen its original intent. As ACWA has explained, permittees are not in a position to develop reduction plans on a compound-by-compound basis. There is insufficient technical information available to do this. Instead, the reduction plans will follow SB 737"s direction to include broad measures such as collection programs, education, and recycling, among many other items, to address persistent pollutants as a whole. SB 737 §4(2). This purpose can easily be accomplished by presenting the new, emerging persistent pollutants (e.g., those without an MCL) in list form while the scientific studies

provide additional information.

ACWA notes that SB 737 still contains a requirement for permittees to describe the contents of their discharge using water quality data. SB 737 §4(2)(a). This effort can easily take place without adopting the numeric levels currently included in the proposed rule. If the purpose of this rulemaking is, as we assert, to reduce toxic effects in the environment, measuring the rate of change in toxics coming from municipal sources is the point, not the comparison against a potentially arbitrary trigger.

By listing the P3 parameters likely to be found in municipal effluent in the rule, and using the P3 Goal Values in guidance, the P3 Goal Values can be updated and revised by the DEQ with additional scientific information

Additionally, the proposed approach carries the risk of not allowing DEQ to be smarter tomorrow as the science evolves. Setting trigger levels in administrative rules at this time using the meager, not site-specific data currently available could prevent future, better decisions because of legal concerns regarding backsliding and antidegradation. This could result in spending valuable dollars to meet a meaningless target rather than using that money to achieve greater environmental benefit elsewhere.

Measuring emerging contaminants is an emerging science. Even the DEQ laboratory is wrestling with the proper method detection and analytical techniques necessary to quantify low levels of the emerging contaminants such as pharmaceuticals and personal care products that are included on the Priority Persistent Pollutant inventory. For many of these chemicals, there are no EPA Standard Methods for the Examination of Water and Wastewater for analysis of these chemicals.

(87) Comment - Water Environment Services (Clackamas County) (Karen Menard) - 67

We recommend that the Environmental Quality Commission (EQC) adopt an inventory of the listed Priority Persistent Pollutants (P3) that are likely to be found in Oregon municipal wastewater effluent. As part of DEQ's statutorily-required analysis, we propose DEQ issue findings regarding whether a P3 is likely to be found at a WWTP and the findings of harm to the waters of this state.

SB737 states in its preamble that the goal is to find "economically feasible alternative" for reducing pollutants. The incorporation of "trigger levels" by rule with the intent for sampling and analysis by the municipalities is not an economically feasible alternative. We propose a more simple approach consistent with the direction of the Oregon Legislature by having the EQC adopt the INVENTORY of Priority Persistent Pollutants (P^3) likely or possibly found in Oregon municipal wastewater effluent. The P^3 Goal Values would be retained by the Department in guidance where they can be updated and revised as improved scientific information is available.

Using the "list" approach will not undermine the purpose of SB 737 and instead will strengthen its purpose. WES supports ACWA's comments noting that Permittees are not in a position to develop reduction plans on a compound-by-compound basis. There is insufficient technical information available to do this. Instead, the reduction plans will

most likely follow SB 737's direction to include broad measures such as collection programs, education, and recycling, among many other items, to address persistent pollutants as a whole SB737 §4(2). This purpose can easily be accomplished by presenting the new, emerging persistent pollutants (e.g., those without an MCL) in list form while the scientific studies provide additional information.

DEQ's response

DEQ included all of the trigger levels in rule (both those based upon the MCL and those selected by DEQ) based upon DEQ's interpretation of the statutory requirements and to be consistent with the intent of the legislation. Some commenters suggested that including numeric values for trigger levels in the rule would limit DEQ's ability to adapt to new information and science in the future. DEQ also recognizes and agrees that the current state of the science for some of these pollutants is evolving at rapid rates. The best available current information was utilized to develop proposed trigger level values. In addition, DEQ disagrees that flexibility in this instance is preferable. In order to be specific and clear regarding the applicable values that monitoring results must be compared against, DEQ established a selection process and selected the trigger level values accordingly.

Some commenters expressed a concern that trigger levels would be used or litigated with the result that they would become de facto water quality standards. However, the statute clearly states that these values "are not standards of quality and purity for the waters of this state for the purposes of ORS 468B.048" (SB 737 4(1)(b)). These values were developed in a fundamentally different manner than the approach DEQ would take to develop water quality standards, and consistent with the legislation, will not be using them as such.

Some commenters also expressed a concern that including a trigger level for each pollutant leads to a requirement to develop reduction plans on a compound-by-compound basis. DEQ disagrees that its rulemaking, as drafted, results in this outcome. We have organized the P^3 List into groupings or classes of pollutants to acknowledge that developing and implementing plans for pollutant groups that have similar toxicity, chemistry, and potential sources is the most practical approach. However, DEQ also recognizes the intent and specific language found in Senate Bill 737 directs the Department to develop a method to determine if individual listed pollutants occur in effluent. Once this determination is complete through the effluent screening process conducted during 2010, we agree that the reduction plans should address pollutants in logical groups.

3.7 PROPOSED RULE LANGUAGE: SECTION 1

(88) Comment - City of Portland, Bureau of Environmental Services (Kim Cox) - 24

Section (1) refers back to ORS 468B.138 but repeats some of the definitions from that ORS. This is potentially confusing. If the definitions are repeated then they need to be repeated in their entirety for clarity. Another option would be to include the reference to

ORS 468B.138 and include definitions specific to SB 737 in Section (1).

In Section (1) (a) the definition of persistent pollution is not the same as in the legislation. The definition from ORS 468B.138 could be inserted at this point for clarification: "Persistent pollutant" means a substance that is toxic and either persists in the environment or accumulates in the tissues of humans, fish, wildlife or plants.

DEQ's response

DEQ agrees with the comment and will modify the definition language to be consistent with the definition found in Senate Bill 737.

3.8 PROPOSED RULE LANGUAGE: SECTION 2(B)

(89) Comment - City of Eugene (Peter J. Ruffier) - 66

Section (2)(b) is immaterial to the rule and should be deleted.

(90) Comment - Water Environment Services (Clackamas County) (Karen Menard) - 67

Section 2(b): the second sentence should be deleted in its entirety.

(91) Comment - League of Oregon Cities (Daniel Eisenbeis) - 68

Delete proposed OAR 340-045-0100(2)(b).

DEQ's response

DEQ agrees with the comments offered on Section 2(b) and will delete this section in its entirety.

3.9 PROPOSED RULE LANGUAGE: SECTION (C) - NOT A WATER QUALITY STANDARD

(92) Comment - City of Corvallis (Larry Lamperti) - 06

{The proposed rule does not clearly state that trigger levels shall not be considered as discharge limitations.}

(93) Comment - City of Gresham (Paul L. Eckley) - 65

{Provide assurances that rule will not create new NPDES permit limits}

(94) Comment - City of Eugene (Peter J. Ruffier) - 66

Section (2)(c) should be revised to further clarify the applicability of 'trigger levels' (or P3 Goal Values) as they pertain to state and federal statutes:

P3 Goal Values ~~Trigger levels~~ are not standard of quality and purity for the waters of this state for the purposes of ORS 468B ~~[.048]~~ or the Clean Water Act [~~Section 313~~]. P3 Goal Values ~~A trigger level~~ may not be applied, used, or otherwise construed as a numeric or narrative waster quality standard in Oregon. P3 Goal Values are not a reference measure or other evidence of toxicity in applying OAR 340-041-0033 or OAR 340-41-007 and shall

not be considered as discharge limits in the development of NPDES or WPCF permits. These P3 Goal Values are set as part of the requirements of SB 737 and shall be used only for determination of municipal pollution prevention plans under that process.

(95) Comment - City of Portland, Bureau of Environmental Services (Kim Cox) - 24

Section (2) (c) of the proposed rule specifically limits the application of the trigger levels: "Trigger levels are not standards of water quality or purity…." DEQ is commended for taking this step to try and prevent the misapplication of the triggers to permit requirements. This may be, however, in conflict with the CWA charge to permit writers to use any and all available information in the drafting of permit requirements. Once given the certification of the EQC through rule making, especially with the moniker of "trigger", it is a short step to arguing these are in fact standards worthy of permit inclusion. If the EQC must adopt these numbers, a name more appropriate to the intended use should be applied, i.e. "Toxic Reduction Guidance Levels" or "Reduction Plan Screening Level". An additional safeguard against misuse could also be to edit the referenced section to read "(c) Toxic Reduction Guidance Levels are not standards of water quality or purity for the waters of the state for the purposes of ORS 468B.048 or Clean Water Act Section 313, nor shall they be used to determine discharge limitations for permitting."

(96) Comment - Oregon Association of Clean Water Agencies (Janet Gillaspie) - 16

Revise Discussion of Water Quality Standards – Section (c) We appreciate the Department's inclusion in the rule of the SB 737 language related to the P3 inventory not being treated as a water quality standard. We want to emphasize that ACWA strongly recommends that the P3 Goal Values be removed from the text of the rule. However, should the DEQ recommend that the P3 Goal Values be incorporated into the text of the rule, revisions are needed. We recommend that the proposed OAR 340-045-0100 (c) be revised to read: (c) "P3 Goal Values Trigger levels are not standards of quality and purity for the waters of this state for the purposes of ORS 468B .048 or the Clean Water Act Section 313. P3 Goal Values A trigger level may not be applied, used, or otherwise construed as a numeric or narrative waster quality standard in Oregon. P3 Goal Values are not a reference measure or other evidence of toxicity in applying OAR 340-041-0033 or OAR 340-41-0007 and shall not be considered or included as discharge limits in the development of a municipal NPDES or WPCF permit. These P3 Goal Values are set as part of the requirements of SB 737 and shall be used only for determination of municipal pollution prevention plans under that process.

(97) Comment - Water Environment Services (Clackamas County) (Karen Menard) - 67

We appreciate the Department's inclusion in the rule of the SB 737 language related to the P^3 inventory not being treated as a water quality standard. However, to avoid unintentional consequences, we recommend that additional language be included. We recommend that the proposed OAR 340-045-0100 (c) be revised to read: (c) "P^3 Goal

Values ~~Trigger levels~~ are not standards of quality and purity for the waters of this state for the purposes of ORS 468B ~~[.048]~~ or the Clean Water Act [~~Section 313~~]. P^3 Goal Values ~~A trigger level~~ may not be applied, used, or otherwise construed as a numeric or narrative waster quality standard in Oregon. P^3 Goal Values are not a reference measure or other evidence of toxicity in applying OAR 340-041-0033 or OAR 340-41-0007 and shall not be considered as discharge limit in the development of a NPDES or WPCF permit. These P^3 Goal Values are set as part of the requirements of SB 737 and shall be used only for determination of municipal pollution prevention plans under that process.

(98) Comment - League of Oregon Cities (Daniel Eisenbeis) - 68

Proposed OAR 340-045-0100(2)(c) should be modified to explicitly state that use or reference to P3 goal values is limited to guiding development of toxics reduction plans: (c) P3 goal values Trigger levels are not standards of quality and purity for the waters of this state for the purposes of ORS 468B.048 or Clean Water Act Section 313. A P3 goal value trigger level may not be applied, used, or otherwise construed as a numeric or narrative water quality standard in Oregon. P3 Goal Values are not a reference measure or other evidence of toxicity in applying OAR 340-041-0033 or OAR 340-41-0007 and shall not be considered as a discharge limit in the development of a NPDES or WPCF permit. These P3 Goal Values shall be used only to inform plans required of permittees by ORS 468B.140.

DEQ's response

DEQ has included the explicit statement from SB 737 in the proposed rule that "Trigger levels are not standards of quality and purity for the waters of this state for the purposes of ORS 468B.048 or the federal Clean Water Act." We think this language is sufficiently clear to avoid use of the trigger levels as water quality standards.

3.10 PROPOSED RULE LANGUAGE: SECTION (D) - WRITTEN APPROVAL

(99) Comment - City of Corvallis (Larry Lamperti) - 06

{The City is concerned that effluent sampling plans are subject to written DEQ approval.}

(100) Comment - City of Gresham (Paul L. Eckley) - 65

{The City is concerned about the need for approval of sampling plans; does not believe this is efficient.}

(101) Comment - City of Portland, Bureau of Environmental Services (Kim Cox) - 24

Sections (d) to (f) appear to deviate from setting trigger levels to a broader implementation focus. Is there a reason these implementation requirements are included in the "Proposed Trigger Level Rule"? Section (2) (d) indicates that permittees will need written approval from the Department take samples, analyze the results and determine whether trigger levels have been exceeded. SB 737 does not indicate that such written approval will be needed. What process and documentation does the Department envision will be needed to comply with Section (2) (d)?

(102) Comment - City of Eugene (Peter J. Ruffier) - 66

Section (2)(d) unreasonably restricts the ability of permittees to collect municipal effluent samples in a timely manner. This is a time sensitive project and individual DEQ review and approval of sampling plans is not time efficient. Since the DEQ has undertaken development and implementation of methodologies for the analysis of P3 chemicals and, at DEQ's request, ACWA laboratory experts are preparing the requisite Quality Assurance Project and Sampling and Analysis Plans that will guide the effluent monitoring, these documents should suffice to guide permittees or their consultants with the necessary techniques to collect the required sample. We suggest Section (2)(d) be revised as follows:

~~Subject to written approval by the Department,~~ Each permittee shall ~~will~~ measure the concentration of priority persistent pollutants in their effluent in a low flow period (see OAR 340- 41-0002(32) grab sample. The permittee shall compare the results of these measurements to the guidance P3 Goal Values ~~trigger levels~~, determine whether any persistent pollutants exceeds its P3 goal value ~~trigger level~~, and document this determination in a report to the Department.

(103) Comment - Oregon Association of Clean Water Agencies (Janet Gillaspie) - 16

Proposed subsection (d) would require the DEQ to review and approve the written sampling plans for each of the 52 permittees subject to SB 737. The Oregon Legislature has put SB 737 on a very tight time schedule. Given the time constraints that DEQ and municipalities must meet under SB 737, DEQ review and approval of individual sampling plans is not time efficient.

As the Department knows, ACWA has been working with the DEQ Laboratory and Water Quality staff since June of 2009 to work collaboratively to conduct the required effluent monitoring. ACWA members and DEQ have reached an agreement in principle with the DEQ Laboratory to conduct the required effluent monitoring on a fee-for-service basis. The Oregon municipal laboratory managers and Oregon DEQ laboratory managers have met routinely to review the P^3 List and reach consensus on appropriate analytical methods and detection levels. At DEQ‟s request, ACWA laboratory experts are preparing a *Quality Assurance Project Plan* and *Sampling and Analysis Plan* that will guide the effluent monitoring. We look forward to continued collaboration with DEQ to ensure the effluent sampling is conducted with the highest precision and accuracy. We recommended that proposed OAR 340-045-0100(d) be revised to read: (d) Subject to written approval by the Department, Each permittee shall will measure the concentration of priority persistent pollutants in their effluent in a single low flow period see OAR 340- 41-0002(32) grab sample. The permittee shall compare the results of this these measurement to the guidance P3 Goal Values trigger levels, determine whether or not any persistent pollutants exceeds its P3 Goal Value trigger level, and document this determination in a report to the Department.

(104) Comment - Water Environment Services (Clackamas County) (Karen

Menard) - 67

WES respectfully recommends that Section (d) be removed completely. It is inconsistent with SB737, which orders DEQ to do the sampling, and it is an inappropriate expropriation of resources. It is the responsibility of the DEQ to provide scientific evidence to justify the need for sampling and analysis. Proposed subsection (d) would require the DEQ to review and approve the written sampling plans for each of the 52 permittees subject to SB 737. The Oregon Legislature has put SB 737 on a very tight time schedule. Given the time constraints that DEQ and municipalities must meet under SB 737, DEQ review and approval of individual sampling plans is not time efficient. At this time, there is still no consensus on when to monitor plant effluent and how many samples is considered adequate. Given the large costs involved in just one sampling event ($7,075 per sample for analysis only) and the low probability that one or two samples per plant could provide adequate scientific information to justify sampling in the first place, WES argues it is cost prohibitive to sample and analyze for the P^3 List and recommends that monies instead be directed towards crafting and implementing the municipal pollution prevention plans.

(105) Comment - League of Oregon Cities (Daniel Eisenbeis) - 68

Modify proposed OAR 340-045-0100(2)(d) to more explicitly state what is implied by the statute and rulemaking proposal: (d) Subject to written approval by the Department, Each permittee shall measure the concentration of priority persistent pollutants in their effluent in a single low flow period [see OAR 340-41-0002(32)] grab sample. The permittee shall, compare the results of this measurement these measurements to the guidance P3 Goal Values trigger levels, determine whether or not any persistent pollutants exceeds its P3 goal value trigger level, and document this determination in a report to the Department.

DEQ's response

DEQ agrees that Section 2(d) should be written more clearly and has revised the rule language to address these comments, including removal of the phrase, "Subject to written approval by the Department…".

3.11 PROPOSED RULE LANGUAGE: SECTION (E) - RIGHT OF APPEAL

(106) Comment - City of Eugene (Peter J. Ruffier) - 66

Sections (2)(e) appears to unreasonably restrict the rights of the permittee to appeal a final agency action as pertains to this rule. We request that this section be revised to read as follows:

The Department will review this report and either approve or reject the determination that a persistent priority pollutant has or has not exceeded its ~~trigger level~~ guidance P3 Goal Value~~. If the Department rejects the reported determination, the department will issue its own determination and that determination will be binding on the permittees~~.

Furthermore, the Department should provide a clear description of the criteria and process it will use to review the permittee's determination, and use a consistent basis to decide that a determination is to be rejected. Any rejection should be fully explained.

(107) Comment - Oregon Association of Clean Water Agencies (Janet Gillaspie) - 16

We recommend Section (e) be revised to read: (e) The Department will review this report and either approve or reject the determination that a persistent priority pollutant has or has not exceeded its trigger level the guidance P3 Goal Value. If the Department rejects the reported determination, the department will issue its own determination and that determination will be binding on the permittee.

(108) Comment - Water Environment Services (Clackamas County) (Karen Menard) - 67

The Department cannot remove a permittee's right to appeal a final agency action. We recommend Section (d) be revised to read: (e) The Department will review this report and either approve or reject the determination that a persistent priority pollutant has or has not exceeded its ~~trigger level~~ the guidance P3 Goal Value~~. If the Department rejects the reported determination, the department will issue its own determination and that determination will be binding on the permittee~~.

(109) Comment - League of Oregon Cities (Daniel Eisenbeis) - 68

Modify proposed OAR 340-045-0100(2)(e) to make clear that an agency determination is subject to appeal: (e) The Department will review this report and either approve or reject the determination that a persistent pollutant has or has not exceeded the guidance P3 goal value its trigger level. If the Department rejects the reported determination, the Department will issue its own determination and that determination shall constitute a final order under ORS 183.480 will be binding on the permittee.

DEQ's response

DEQ has rewritten this section to reflect that DEQ is ultimately responsible for making the determination whether a trigger level has been exceeded and not the permittee. Permittees do have the right to appeal the Department's determination. The Department's determination will be in writing and will notify permittees of their appeal rights. Those appeal rights are specified in existing statutes and regulations, and it is not necessary to repeat them in this rule.

3.12 PROPOSED RULE LANGUAGE: SECTION (F) - BASIS FOR PLANS

(110) Comment - City of Eugene (Peter J. Ruffier) - 66

Section (2)(f) appears to be inconsistent with requirements set forth in SB 737 and should be deleted entirely and the following language inserted into the statue:

By July 1, 2011, each permittee shall submit to the Department of Environmental Quality a plan for reducing the permittee's discharge of persistent pollutants listed by DEQ as Priority Persistent Pollutants in concentrations exceeding the guidance P3 Goal Values for which DEQ has determined there are reasonable and feasible municipal effluent reduction strategies.

(111) Comment - Oregon Association of Clean Water Agencies (Janet Gillaspie) - 16

As proposed, Section (f) is inconsistent with SB 737. We recommend it be deleted in its entirety and the below language, directly consistent with the statute, be used: (f) By July 1, 2011, each permittee shall submit to the Department of Environmental Quality a plan for reducing the permittees discharge of persistent pollutants listed by DEQ as Priority Persistent Pollutants in concentrations exceeding the guidance P3 Goal Values for which DEQ has determined there are reasonable and feasible municipal effluent reduction strategies.

The phrase "*for which DEQ has determined there are reasonable and feasible municipal effluent reduction strategies*" is important to ensure municipal Pollution Prevention Plans are targeted on the pollutants where municipal action can be effective in reducing toxic pollutants. Some parameters are not amenable to pollution prevention plans at the municipal level. For example, what might a municipal effluent pollution prevention program entail for concentrations of cholesterol in effluent?

(112) Comment - City of Corvallis (Larry Lamperti) - 06

{The City is concerned that there may not be a reduction strategy for all pollutants that may exceed the trigger level. Rule should clearly state that a written reduction plan is not required if DEQ has not identified a feasible reduction strategy.}

(113) Comment - Water Environment Services (Clackamas County) (Karen Menard) - 67

As proposed, Section (f) is inconsistent with SB 737. We recommend it be deleted in its entirety and the modified language of statue: (f) By July 1, 2011, each permittee shall submit to the Department of Environmental Quality a plan for reducing the permittees discharge of persistent pollutants listed by DEQ as Priority Persistent Pollutants for which DEQ has determined there are reasonable and feasible municipal effluent reduction strategies. The phrase "*for which DEQ has determined there are reasonable and feasible municipal effluent reduction strategies*" is important to ensure municipal Pollution Prevention Plans are targeted on the pollutants where municipal action can be effective in reducing toxic pollutants. For example, what might a municipal effluent pollution prevention program entail for concentrations of cholesterol in effluent? The inclusion of cholesterol as a pollutant for reduction by a wastewater treatment plant is ineffectual at best and inapplicable.

(114) Comment - League of Oregon Cities (Daniel Eisenbeis) - 68

To conform with ORS 468B.140, strike and replace proposed OAR 340-045- 0100(2)(f) with the following: (f) By July 1, 2011, each permittee shall submit to the Department of Environmental Quality a plan for reducing the permittee's discharges of persistent pollutants listed by DEQ as persistent pollutants in concentrations exceeding the P3 Goal Values for which DEQ has determined there are reasonable and feasible municipal effluent reduction strategies.

(115) Comment - Pacific Klamath Energy, LLC (Raymond Martens) - 69

Klamath Energy adopts each of the comments to the Proposed Rule set forth in ACWA's February 1, 2010 letter to you [i.e., DEQ].

DEQ's response

DEQ revised the rules to reflect the specific requirements in the statute governing the date by which persistent pollutant reduction plans are due and also to address requirements for permittees that, in the future, may become subject to the requirements of the statute. With regard to the commenters that suggest that the phrase, "for which DEQ has determined there are reasonable and feasible municipal effluent reduction strategies," should be included in the rule, DEQ does not have authority to add the language. The recommended qualifier is not referenced in, or authorized by, SB 737. SB 737 charges DEQ with assessing the costs and effectiveness of reduction measures in prioritizing such measures in its report to the Legislature but not in considering under what circumstances a permittee is required to submit a reduction plan. DEQ considered these qualifiers during the development of the final P^3 List and some pollutants were removed from further consideration at that point for the reasons cited by the commentors.

3.13 REMOVE TABLE A ENTIRELY

(116) Comment - City of Eugene (Peter J. Ruffier) - 66

Reference to Table A in the rule should be removed and substituted with: P3 Goal Values will be set by the DEQ for Priority Persistent Pollutants that are expected to be found in US municipal wastewater effluent.

(117) Comment - Oregon Association of Clean Water Agencies (Janet Gillaspie) - 16

We recommend deleting Table A in its entirety. DEQ should insert a list of the P3 pollutants that would be expected to be found in Oregon municipal wastewater effluent for EQC adoption. The detailed P3 Goal Values should be developed by DEQ into an Internal Management Directive.

(118) Comment - Water Environment Services (Clackamas County) (Karen Menard) - 67

We recommend deleting Table A in its entirety. DEQ should insert a list of the P3 pollutants that would be expected to be found in Oregon municipal wastewater effluent for EQC adoption. The detailed P3 Goal Values should be developed by DEQ into an Internal Management Directive.

(119) Comment - League of Oregon Cities (Daniel Eisenbeis) - 68

We suggest that the proposed rules be modified to delete reference to numeric "trigger level" values and rather identify a list of P3 compounds that the EQC determines to be likely present in Oregon municipal wastewater effluent. Numeric values could be retained as part of DEQ guidance for informing toxics reduction plans. The inclusion of numeric

values in administrative rule is problematic in key regards. Many of these compounds are emerging contaminants, and the techniques for measuring and understanding the impacts of the pollutants are still very much in development. Administrative rule does not allow sufficient flexibility to address such uncertainty and developing knowledge. Furthermore, despite provisions in statute and the proposed rules that the trigger levels are not water quality standards, the League has considerable concern that adoption of such numeric values in rule may lead to unintentional and inappropriate use or reference of those numeric values in various facets of water quality regulation, thereby serving as de facto water quality standards. We suggest that Table A be replaced with a list of P3 compounds that the Department determines to be likely present in municipal Oregon municipal wastewater effluent, and that the proposed rules be revised accordingly.

(120) Comment - Pacific Klamath Energy, LLC (Raymond Martens) - 69

Klamath Energy adopts each of the comments to the Proposed Rule set forth in ACWA's February 1, 2010 letter to you [i.e., DEQ].

DEQ's response

DEQ disagrees with the comments suggesting that the term "Trigger Level" not be used and the associated values not be included in administrative rule. See responses to comments 1.11, 3.1, and 3.4 regarding documented presence of persistent pollutants in effluent, use of the term "Trigger Level" and placement of the trigger level values in rule, respectively.

3.14 "LEVELS OF QUANTIFICATION " IN RULE

(121) Comment - City of Portland, Bureau of Environmental Services (Kim Cox) - 24

Section (2) (a) identifies that trigger levels are set out in Table A. In the "Selection of Trigger Levels for Oregon's Priority Persistent Pollutants" document, the method specifies that selection of trigger levels is dependent on knowing the quantitation limits (QL) for that particular pollutant: if the QL is higher than the level selected at that point in the process, then the QL would become the trigger level. To date, no such list of QLs for these substances has been published for this selection process. The QLs and the associated methods should be included as part of the rule, in Table A.

At the Portland hearing regarding the trigger levels, DEQ staff explained that LOQs were used instead of PQLs (QLs) in development of the trigger levels. In consideration of that revelation the LOQs should be documented in Table A and a footnoted explanation of LOQs and their relationship to PQLs or QLs should be provided.

(122) Comment - Water Environment Services (Clackamas County) (Karen Menard) - 67

During the webinar […] held on November 12, 2009, Brian Boling of DEQ stated that 13 of the 118 chemicals on the P^3 List have a "trigger below ability of current methods tested." This is in sharp contrast with Bruce Hope's presentation on January 28, 2010 where he

stated that none of the trigger levels are lower than the limit of quantitation (LOQ) or lowest standard on the calibration curve. The proposed trigger levels during both discussions for those 13 chemicals are the same.

During the same webinar on November 12, 2009, Mr. Boling indicated that 10 of the 118 chemicals on the P^3 List had no background or method development of any kind and he stated that the DEQ lab personnel "don't know these are reasonable" in referring to the trigger levels for those 10 chemicals.

DEQ's response

Because levels of quantification (LOQ) are likely to change as analytical methods are refined by DEQ's laboratory, DEQ has determined that it will be more efficient to list the LOQ and the details of the associated analytical methods in documents prepared to support rule implementation.

DEQ replaced the term "Practical Quantitation Limit," or PQL, with the term "Level of Quantification," or LOQ, for consistency and clarity with regards to other Department programs (such as permitting). The LOQ captures the concept of a level at which a commercial laboratory can reproduce results. There is no important technical distinction between these two terms.

There may have been a misunderstanding of statements made during the public hearing versus those made in other venues. To clarify, it proved possible to assign trigger levels to all 118 pollutants on the P^3 List. While it may be necessary to use the LOQ in place of the trigger level for some pollutants, DEQ will not know if, or how many, trigger levels will need to default to the LOQ until methods development is completed.

3.15 EXPLANATION OF "TREATMENT TECHNIQUES" IN RULE

(123) Comment - City of Portland, Bureau of Environmental Services (Kim Cox) - 24

Section (2) (b) refers to "treatment techniques" in the context of MCLs. What is the reference and how is it applicable in this case? Depending on what that means it is potentially a significant departure from SB737 which only refers to MCLs.

DEQ's response

"Treatment techniques" applies only within the context of an MCL. When there is no reliable method that is economically and technically feasible to measure a contaminant at particularly low concentrations, a treatment technique (TT) is set rather than a MCL. This portion of the originally proposed rule language that referred to such techniques has been deleted.

3.16 OPERATION OF SCIENCE WORKGROUPS

(124) Comment - Oregon Center for Environmental Health (Mari Anne Gest) - 31

DEQ's Trigger Level Science Peer-Review Panel does not appear to include a scientist or

representative from the environmental health/non-profit sector. DEQ should immediately expand current and future committees of advisors and scientists to include at least one scientist/representative who works in the non-profit sector of environmental health or science.

(125) Comment - Oregon Association of Clean Water Agencies (Janet Gillaspie) - 16

ACWA does not agree with the assumptions used in setting the P3 Goal Values. It is important to highlight that there was no consensus among the members of the Peer Review Group2 on the assumptions used in the P3 Goal Value selection and calculations.

(126) Comment - Water Environment Services (Clackamas County) (Karen Menard) - 67

In addition to not agreeing with the concept of "trigger levels", and to the extent DEQ continues forward with its intended rulemaking, WES also wishes to note that it does not agree with the assumptions used in setting the P^3 Goal Values. It is important to highlight that there was no consensus amount the members of the Peer Review Group on the assumptions used in the P^3 Goal Value selection and calculations. The 'trigger levels' for P^3s were selected either by assuming that an adult drinks two liters of wastewater effluent per day and that a child drinks one liter of wastewater per day with ecological adjustments or applying the maximum contaminant level (MCL) for a given pollutant. WES does not have any comments on the MCLs, but is deeply concerned regarding DEQ's methodology for the remaining proposed pollutants.

DEQ's response

DEQ disagrees that the fact that the trigger level peer-review panel did not reach consensus on all questions posed to them represents a flaw in the trigger level development process. The Scientific Peer Review panel was tasked by DEQ to perform solely as a scientific advisory body, rather than as a committee designed to reflect stakeholder views. DEQ selected their members from a list of qualified candidates in the business, academic, and government sectors. These individuals were selected primarily on the basis of their considerable scientific or technical expertise in one or more of the following disciplines: toxicology, risk assessment, epidemiology/biostatistics, public health, water quality modeling, transport and fate modeling, exposure modeling, and ecotoxicology. Because the peer-review panel was tasked to address only scientific issues, and not policy or stakeholder issues, the affiliation of their members was not a relevant consideration. In addition, the workgroup and review panel were tasked with providing DEQ with advice, not consensus, on difficult scientific and technical issues. That these groups did not reach consensus on some issues merely reflects legitimate differences of professional and scientific opinion, and is not a deterrent to use of their advice.

3.17 COST OF RULE IMPLEMENTATION

(127) Comment - City of Gresham (Paul L. Eckley) - 65

{The City is concerned about the cost of implementing the rule.}

(128) Comment - Pacific Klamath Energy, LLC (Raymond Martens) -

Klamath Energy also requests that DEQ exercise its authority … to make certain that businesses … that do not meaningfully contribute to P3 levels in municipal wastewater effluent are not disproportionately saddled with the costs of achieving SB 737's objectives.

DEQ's response

DEQ prepared its best estimate of the direct and indirect costs it anticipates may result from the implementation of this rule. See the Statement of Need and Fiscal and Economic Impact prepared for this rulemaking for additional information.

3.18 INCLUDE SAFE HARBOR PROVISION IN RULE

(129) Comment - The Soap and Detergent Association (Paul DeLeo) - 21

The Trigger Levels should be a "safe harbor" if they are not exceeded. For trigger levels established by Oregon DEQ, there should be a "safe harbor" for cases where the trigger levels is *not* exceeded where by the wastewater treatment plants, their customers and related stakeholders are not liable for any existing concentrations in the absence of a finding that such concentrations are unsafe for humans or the environment by the Oregon DEQ.

DEQ's response

DEQ acknowledges the comment. DEQ has concluded that the concern raised by the commenter regarding concentrations that may be found below the trigger level is already adequately addressed by the legislation. The statute does not require any action for pollutants that are measured below their MCL. Through this rulemaking, DEQ is establishing the same consequence for those pollutants without a MCL value. Neither the legislation nor this rule contains any additional requirements for pollutants that are not found in effluent above the trigger level.

4. TECHNICAL COMMENTS - SB 737

4.1 FRAGRANCE MATERIALS

(130) Comment - Fragrance Manufacturers Association of the United States (FMA) and the Research Institute for Fragrance Materials (RIFM) (Dr. Daniel Salvito) - 36

There are three materials noted in the current proposed rulemaking for which we have provided data, study reports, and summaries (e.g., regulatory risk assessments) that do not appear to have been considered in establishing trigger levels. These three materials are HHCB (Galaxolide CAS#1222-05-5); musk indane (Phantolide CAS# 15323-35-0); and musk ketone (CAS# 81-14-1). Two additional materials musk tibetene (CAS# 145-39-1) and musk xylene (CAS# 81-15-2) are prohibited for use in the fragrance materials industry. Information regarding their prohibition were also provided in our previous submissions to the DEQ. Please find attached a data sheet, previously submitted to the DEQ, summarizing the available data on these materials.

DEQ's response

This comment was accompanied by a table which cross-references technical reports that relate more to the placement of these chemicals on the Priority Persistent Pollutant List (P^3L) than to the issue of trigger levels. The comment does not specifically suggest a preferred or alternative trigger level value for any of these fragrance materials. Absent a clear and concise statement of an alternative trigger level, DEQ is retaining the values proposed originally.

4.2 FLAME RETARDANTS

(131) Comment - Albemarle Corporation (Marcia L. Hardy) - 63

{Summary} Three chemicals [hexabromocyclododecane (HBCD) (CASRN 25637-99-4), tetrabromobisphenol A (TBBPA) (CASRN 79-94-7), decabromodiphenyl ether (PBDE-209) (CASRN 1163-19-5)] should not have been placed on the P^3 List because they do not meet PBT criteria.

DEQ's response

The pollutants DEQ included on the priority persistent pollutant list is not within the scope of this rulemaking. At this time, DEQ contemplates no changes to the P^3 List itself before July 2011. Comments related to an alternative trigger level value for these chemicals are addressed elsewhere.

4.3 EFFLUENT SAMPLING & MONITORING

(132) Comment - Eugene Water & Electric Board (Karl Morgenstern) - 50

How frequently will the municipal wastewater treatment plants be required to monitor for the priority pollutants?

(133) Comment - Confederated Tribes of the Umatilla Indian Reservation

(William H. Burke) - 19

DEQ should require quarterly screening events (sampling of effluent) in the first year to determine if there are seasonal affects that must be accounted for in future sampling. If effluent data in the first year indicate there are no seasonal affects, then sampling should occur annually or at a less frequent level as deemed appropriate by DEQ.

DEQ's response

DEQ acknowledges the comments received regarding the frequency of sampling events. DEQ is not addressing the details regarding the frequency of sampling and other related details within the scope of this rulemaking. DEQ refers the commenters to the memorandum on effluent screening of March 12, 2010, which can be accessed at: (http://www.deq.state.or.us/wq/SB737/docs/EffScreenMemo0310F.pdf).

(134) Comment - Eugene Water & Electric Board (Karl Morgenstern) - 50

Will municipal wastewater treatment plants be required to collect upstream and downstream samples for these priority pollutants to better understand if there are upstream pollutants not attributable to the wastewater treatment plant effluent?

DEQ's response

No. The statute and regulation only require the effluent to be sampled. See SB 737 section 4 (references to "discharge") and section 2(c) of the rule.

(135) Comment - Eugene Water & Electric Board (Karl Morgenstern) - 50

How will DEQ address upstream priority pollutants that exceed trigger levels and are not associated with wastewater treatment plant effluent?

DEQ's response

Addressing upstream priority persistent pollutants is not within the scope of the statute or this rule. Per SB 737, only effluent will be sampled. Trigger levels only apply to effluent. In that context, trigger levels will only be used to determine if a pollution reduction plan is required.

(136) Comment - Eugene Water & Electric Board (Karl Morgenstern) - 50

How and with whom will the monitoring data from wastewater providers be shared.

DEQ's response

DEQ will provide an analysis report to each permittee that: (1) reports concentrations of each P3-listed pollutant in their effluent sample; and (2) lists the trigger level for each pollutant. These results will be uploaded into DEQ's Laboratory Analytical Storage and Retrieval (LASAR) database, which is available to the public.

(137) Comment - Eugene Water & Electric Board (Karl Morgenstern) - 50

It might be useful to have some method or interface for wastewater treatment plants to communicate their monitoring results to drinking water providers so that we can both work

together effectively to reduce pollutants in our watersheds.

DEQ's response

DEQ acknowledges the comment and generally supports efforts to share information among wastewater treatment plants and drinking water providers.

(138) Comment - Eugene Water & Electric Board (Karl Morgenstern) - 50

How will this rule and trigger levels affect wastewater reuse projects?

DEQ's response

Since SB 737 did not specifically address the reuse of treated municipal effluent (recycled water), the permitting and use of recycled water will continue to be regulated under OAR 350-055, Recycled Water Use. Consequently, this rule and the trigger levels are not anticipated to have any immediate or direct effect on recycled water use. However, OAR 340-055-0016(5) does allow DEQ to include additional permit limits or conditions or both if it determines or has reason to believe additional requirements for the use of recycled water are necessary to protect public health or the environment or both.

5. GENERAL COMMENTS - SB 737

5.1 POLLUTION REDUCTION PLANS

(139) Comment - Eugene Water & Electric Board (Karl Morgenstern) - 50

In addition to the toxic reduction plans that will be required, what kind of 'next steps' will there be to follow up with wastewater providers and determine whether or not these plans are working?

DEQ's response

The persistent pollutant reduction plans will be incorporated by reference to Schedule E of the facilities' NPDES or WPCF permit. The plan itself will detail the steps necessary to achieve and measure reductions in these pollutants. Plans must include a specific description of the concentrations and estimated annual quantity of persistent pollutants that are discharged, based on water quality sampling data. DEQ will work with municipalities in advance of the July 2011 deadline to ensure that persistent pollutant reduction plans are sufficient. DEQ will develop an Internal Management Directive to staff that outlines how all plans will be reviewed. Municipalities will submit all persistent pollutant reduction plans to the SB 737 Project Coordinator no later than July 1, 2011. Municipalities will be responsible for measuring success as detailed in the plan. Under certain circumstances, DEQ may remove the requirement to continue sampling and reduction activities by the municipality.

5.2 FUNDING OF POLLUTION REDUCTION MEASURES

(140) Comment - Mr. Mark Smith, Corvallis, OR - 62

I hope it is as obvious to you as it is to me that the cost of eliminating these "Priority persistent pollutants" from wastewater should (must) be born by the pharmaceuticals that develop, manufacturer and market these harmful substances. A tax should be imposed, on a "per ton" basses, on each manufacturer, of a substance on the list, which goes directly to the municipality to offset the cost for elimination of the substance from the waste stream. The producers of this "crap" need to be held accountable for the substance from cradle to grave. Hopefully the increased cost for the substance (due to the tax) will tend to drive these substances out of existence or at least make those that want them pay the real "total cost" for them.

DEQ's response

DEQ will describe and discuss strategies for the management, reduction, or elimination of these priority persistent pollutants in a report due to the Legislature on June 1, 2010.

6. LIST OF COMMENTERS

The following is a list of all individuals and corporations who provided comments on various aspects of the SB 737 process since its inception. Those listed in bold commented on the trigger level rulemaking. The commenter ID number (- ##) appears after the name of each commenter in the summary of comments above.

Commenter ID	Commenter *
01	**City of Pendleton, OR**
02	Gary Johnson, Beaverton, OR
03	Minnesota Pollution Control Agency (MPCA)
04	Ken Shump, Portland, OR
05	Eddie Huckins, Yachats, OR
06	**City of Corvallis, OR**
07	Ray Kinney, Siuslaw watershed resident
08	Oregon Department of Agriculture (ODA)
09	Pat Ross, Molalla, OR
10	Willow Lake Treatment Plant, Salem, OR
11	Neilson Research Corp., Medford, OR
12	Kent Knock, Rogue River, OR
13	Stephen Gramlich, Salem, OR
14	Snake River Produce, Ontario(?), OR
15	Marissa Houlberg, Tualatin, OR
16	**Oregon Association of Clean Water Agencies, Portland, OR**
17	Kathy Newcomb, Beaverton, OR
18	Oregon Environmental Council (OEC), Portland, OR
19	**Confederated Tribes of the Umatilla Indian Reservation (CTUIR), Pendleton, OR**
20	Ciba Expert Services, Basil, Switzerland
21	**The Soap and Detergent Association (SDA), Washington, DC**
22	**Bayer CropScience, Folsom, CA**
23	Pentachlorophenol Task Force
24	**Bureau of Environmental Services (BES), City of Portland, OR**
25	Irene Jackson, Stayton, OR
26	**American Chemistry Council, Arlington, VA**
27	DeAngelo Brothers, Inc., Hazelton, PA
28	Chemtura Corp., Middlebury, CT
29	Oregon Department of Forestry (ODF), Salem, OR
30	Gowan Chemicals, Yuma, AZ
31	**Oregon Center for Environmental Health, Portland, OR**
32	The Dial Corporation, Scottsdale, AZ
33	Cheminova, Inc., Arlington, VA
34	The 2,4-DB Task Force
35	**Northwest Pulp & Paper Association (NWPPA)**
36	**The Fragrance Materials Association of the United States**

Commenter ID	Commenter *
37	Johnson & Johnson, New Brunswick, NJ
38	City of Bend, OR
39	Western Wood Preservers Institute, Vancouver, WA
40	CropLife America, Washington, DC
41	**Dow AgroSciences, Roseville, CA**
42	**National Council for Air & Stream Improvement (NCASI)**
43	Alkylphenols & Ethoxylates Research Council
44	Columbia Riverkeeper; Rogue Riverkeeper; Northwest Environmental Defense Center; Klamath Riverkeeper
45	Oregon Golf Course Superintendents Association of America, Vancouver, WA
46	Oregonians for Food and Shelter (OFS); and for Oregon Forest Industries Council; Oregon Farm Bureau Federation; Oregon Dairy Farmers Association; Oregon Wheat Growers League; Oregon Cattlemen's Association; Oregon Pest Control Association; Oregon Seed Council; Oregon Hazelnut Commission; Oregon Small Woodlands Association; Idaho Power Company; Rasmussen Spray Service; Oregon Metals Council; Oregon State Grange; Northwest Food Processors Association; Far West AgriBusiness Association; Associated Oregon Loggers; Beef Northwest
47	Oregon Department of Human Services (DHS), Portland, OR
48	Oregon Association of Nurseries (OAN), Wilsonville, OR
49	Monsanto, St. Louis, MO
50	**Eugene Water & Electric Board (EWEB), Eugene, OR**
51	Alliance for a Clean and Green Oregon, Portland, OR
52	BASF Corp., Research Triangle Park, NC
53	Oregon Toxics Alliance (OTA), Eugene, OR
54	Syngenta Crop Protection, Austin, TX
55	AMVAC Chemical Corporation, Newport Beach, CA
56	Jennifer McKinnis
57	DuPont (Surfactants)
58	**Silicones Environmental, Health and Safety Council**
59	Pyrethroid Working Group
60	FMC Corporation
1.1.1 61	**1.1.2 DuPont Crop Protection**
62	Mark Smith
1.1.3 63	**1.1.4 Albemarle Corporation**
64	Catherine Koehn
1.1.5 65	**1.1.6 City of Gresham, OR**
1.1.7 66	**1.1.8 City of Eugene, OR**
1.1.9 67	**1.1.10 Water Environment Services, Clackamas County, OR**
1.1.11 68	**1.1.12 League of Oregon Cities**
1.1.13 69	**1.1.14 Pacific Klamath Energy, LLC, Klamath Falls, OR**

* If only name is given, commenter was assumed to be a private individual.